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FlexNet Manager Suite 2024 R2

FlexNet Manager for SAP Applications User Guide

Legal Information

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Contents

1. FlexNet Manager for SAP Applications User Guide 11
   - What's New in This Release 11
   - Help and Documentation Resources 11
   - Product Training 12
   - Contacting Us 12
2. Installing the SAP Connector Libraries for integration with SAP 13
   - Downloading SAP Connector for Microsoft .NET 13
   - Installing the connector on the FlexNet Inventory Beacon 14
   - Installing the connector on the FlexNet Manager Suite Servers 14
3. Components for FlexNet Manager for SAP Applications 15
   - Workflow Summary 15
   - FlexNet Manager Suite 16
   - SAP Admin Module 17
   - Satellite Transport 18
   - SAP Inventory Agent 18
     - SAP Inventory Agent Options 18
     - SAP Inventory Agent Logging 19
4. SAP Functionality in FlexNet Manager Suite 21
   - Accessing the SAP Features 21
   - Selecting the System Landscape 21
   - Page Elements in FlexNet Manager Suite 22
   - Grids 23
     - Filters 23
     - Searches 26
     - Exporting a Grid 27
     - Changing the Columns Displayed in a Grid 27
5. Initial Setup of FlexNet Manager Suite 29
   - System Landscape Setup 29
     - Accessing the System Landscape Editor 30
     - The System Landscape Details Page 31
     - Managing Your System Landscape 34

Collection of User Details and Consumption Data from SAP Systems **48**
Access Rights to SAP Functionality **49**
FlexNet Manager Suite Access Rights 49
Account-Specific Access Rights in SAP Mode 49
Licensing Information Setup **54**
License-Type Hierarchy 54
Handling Over-Consumption of License Types 62
Managing SAP License Ratios 66
6. Inventory Beacons **70**
Concept **70**
Register an Inventory Beacon **72**
Communication between the SAP Admin Module and an Inventory Beacon **74**
Configuring IIS for Communication between the Inventory Beacon Server and the SAP Admin Module **74**
Managing Inventory Beacon Connections **75**
Creating SAP Connections 75
Modifying SAP Connections 79
Deleting SAP Connections 80
Executing Connections 80
7. System Tasks Status Monitoring **82**
SAP Import Task **82**
Status Indicator for System Tasks **82**
Selecting the Monitored Tasks **83**
Displaying System Tasks **83**
System Task Information **83**
Filtering for SAP-Related System Tasks **86**
Accessing System Task Information **86**
8. The Dashboard (SAP Overview Page) **88**
Compliance Position **88**
Named User Licenses **88**
Current vs. Optimal **89**
License Utilization **89**
License Ratios **89**
Changing the Period for the SAP Overview Page **90**
9. SAP License Position **91**
Current License Position **91**

License Consumption 93
License Position Management 100
License Position History 103
Viewing the License Position History 105
Deleting Recommendation Sets from the License Position History 105
10. The SAP Admin Module 106
Main Menu Items in the SAP Admin Module 106
The System Landscape in the SAP Admin Module 107
System Types in the SAP Admin Module 108
Information in the System Landscape List View 108
Setup and Maintenance of Landscapes and RFC Destinations 109
Central User Administration 114
HR System Setup 116
Dialog RFC Destinations in the SAP Admin Module 118
User Data or License Data Changes 119
Changing User Data Directly in FlexNet Manager for SAP Applications 120
Changing User Data Using the Transaction SU01 120
Initializing User Data Fields 121
Changing License Data Directly in FlexNet Manager for SAP Applications 121
Changing License Data Using the Transaction SU01 122
Initializing License Data Fields 122
Modifications of User and License Data 123
Viewing User Data Modification Logs 123
Counting Rows in Reports 124
SAP License Contract Information in the SAP Admin Module 124
Specifying License Contract Data 125
Displaying License Contract Data 125
Modifying License Contract Data 126
Deleting License Contract Data 126
Data Collection Using the Staging Database Monitor 126
Collecting Data from Dependent SAP Systems 127
Data Collection Status 131
11. Optimization in the SAP Admin Module 137
User Data Validation Report 137
Setting User Data Checks for User Data Validation 138

Creating a User Data Validation Report ... 139
Logon Evaluation Report ... 141
Creating a Logon Evaluation Report ... 142
Results of a Logon Evaluation Report ... 144
Check for License Type 11 Report ... 145
Creating a Check for License Type 11 Report ... 145
Troubleshooting the Check for License Type 11 Report ... 147
Accepting License-Type Recommendations in a Check for License Type 11 Report ... 147
License Distribution by Cost Center (License Chargeback) Report ... 147
Creating a License Distribution by Cost Center (License Chargeback) Report ... 148
Reading the Results of a License Distribution by Cost Center Report ... 149
Customer Reports ... 151
Adding a Customer Report ... 152
Modifying a Customer Report ... 152
Deleting a Customer Report ... 152
Activity Checks ... 152
Available Activity Checks ... 153
Defining and Executing Activity Checks ... 153
Viewing Activity Check Results ... 154
12. Regular Optimization of the SAP License Position in FlexNet Manager Suite ... 155
Consumption Analysis Report ... 155
Creating a Consumption Analysis Report ... 156
Reading the Results of a Consumption Analysis Report ... 157
The "SAP Consumption Analysis Details" Dialog ... 158
Role Utilization Report ... 159
Creating a Role Utilization Report ... 160
Reading the Results of a Role Utilization Report ... 160
Advanced Role Analysis ... 162
The "SAP Consumption Analysis Details" Dialog ... 164
Module Usage Report ... 165
Creating a Module Usage Report ... 165
Reading the Results of the Module Usage Report ... 166
The "SAP Consumption Analysis Details" Dialog ... 169
Managing Indirect Access ... 170
Workflow ... 170

Collecting Indirect Access Evidence ... 171
Remote System Evidence ... 171
SAP User Accounts Evidence ... 174
Managing Evidence Using Non-SAP Systems ... 177
Indirect Access Evidence Report ... 190
User Consolidation ... 192
General Criteria in the User Consolidation ... 193
Custom Criteria in the User Consolidation ... 193
Configuring the User Consolidation ... 194
Previewing User Consolidation Results ... 195
SAP Transaction Profiles ... 196
Accessing the Transaction Profiles Page ... 196
Transaction Profile Information ... 197
Creating a Transaction Profile ... 198
Populating a Transaction Profile with Objects ... 198
Identifying Objects that are Included in Transaction Profiles ... 202
Viewing Objects of a Transaction Profile ... 203
Editing a Transaction Profile ... 203
Configuring Optimization Rules ... 204
Introduction to License Rules ... 204
Introduction to License Rule Sets ... 205
Configuring Default License Rules ... 212
License Rule Set Simulations ... 225
Duplicate User Rule ... 228
SAP Package Licensing ... 232
Workflow of SAP Package Consumption Analysis ... 232
Package Metrics and Formulas ... 233
Displaying SAP Packages in FlexNet Manager Suite ... 234
Manually Adding Packages ... 235
Viewing Package Details ... 236
Editing Package Information ... 238
Deleting a Package ... 240
Previewing the Package Consumption ... 240
13. Remediation in the SAP Admin Module ... 242
Importing Recommendations ... 243

Process License Recommendations Report **244**
Creating a Process License Recommendations Report 244
Information in the Process License Recommendations Report 245
Processing License-Type Recommendations 247
Recommendation History Report **252**
Creating a Recommendation History Report 252
Information in the Recommendations History Report 253
Duplicate User Recommendations Report **255**
Creating a Duplicate User Recommendations Report 255
Duplicate User Recommendation Status 256
Duplicate User Recommendations Review 256
14. SAP Package Analysis in the SAP Admin Module **260**
Importing Source Data of Packages **260**
Deleting Primary Data **261**
Displaying Packages of Installed Systems **261**
SAP Package Measurement **262**
Executing a Package Measurement 262
Displaying Package Measurement Results 263
Setting Package Usage Alerts **263**
Setting Parameters for Package Usage Alerts 264
Displaying All Packages of the System Landscape **264**
XI Adapter Data Volume Report **266**
15. System Measurement in the SAP Admin Module **268**
Performing a System Measurement **268**
Consolidating Measurement Results in the LAW **269**
Loading the LAW Measurement Results **270**
16. Statistics in the SAP Admin Module **271**
Management Summary **271**
Creating a Management Summary Report 271
Data in the Management Summary Report 272
License Analysis **273**
Creating a License Analysis Report 273
Data in the License Analysis Report 274
Contract Utilization Analysis **274**
Creating a Contract Utilization Analysis Report 274

Data in the Contract Utilization Analysis Report—License Analysis (Variance) 275
Data in the Contract Utilization Analysis Report—License Usage Contract Total 275
Data in the Contract Utilization Analysis Report—Contract Utilization 276

17. Working with Independent Systems 277

Data Collection from Independent SAP Systems 277
Data Collection Using an Inventory Beacon 278
Executing Connections 279
Measuring Packages on Independent SAP Systems 279
Previous Package Measurements 280
Exporting Recommendations for Independent SAP Systems 280
Importing License-Type Recommendations 281
Recommendation Processing on Independent SAP Systems 281
Creating a Process Recommendations Offline Report 282
Recommendation Status Values for Independent SAP Systems 283
Information in the Process Recommendations Offline Report 284
Accepting Recommendations 286
Rejecting Recommendations 286
Overwriting Recommendations 287
Resetting Recommendations 288
Committing License-Type Changes 288

18. User Exits in the SAP Admin Module 290

User Exits: Data Check 290
Creating a User Exit ID for the User Data Check 290
Modifying a User Exit ID for the User Data Check 291
Copying a User Exit ID for the User Data Check 291
Changing the Description of a User Exit ID for the User Data Check 291
Deleting a User Exit ID for the User Data Check 292
User Exits for LDAP Connections 292
Creating a User Exit ID for an LDAP Connection 292
User Exits for Packages 293
Creating a User Exit for Packages 293
Modifying a User Exit for Packages 293

19. Properties and Methods 294

Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules 294
Custom Rule Methods 296

Package Rule Properties and Methods **299**

20. Scheduled Tasks **304**

Common Task Utility **304**

Parameters for ndcrproc.exe 304

Import SAP Inventories **305**

Import SAP Package License **306**

Import SAP User and Activity Information **306**

Recognition Data Import **307**

Upload Third-Party Inventory Data **308**

21. Index **309**

1

FlexNet Manager for SAP Applications User Guide

Designed for use with SAP® Business Suite, FlexNet Manager for SAP Applications helps you to centrally monitor and analyze your organization's SAP license usage. This enables you to ensure accurate and appropriate licensing, and so better plan and budget for future SAP purchases.

What's New in This Release

The FlexNet Manager Suite 2024 R2 Features by Release list the new features that are available in this release.

You can find the Features by Release information in the following locations:

- Available on Flexera Product Documentation site https://docs.flexera.com/ for each release.
- Downloadable from the Flexera Product and License Center, where you downloaded the installer for the system. Log in at `https://flexerasoftware.flexnetoperations.com/`.

Help and Documentation Resources

This FlexNet Manager for SAP Applications User Guide is the complete operator's guide for regular use of FlexNet Manager for SAP Applications.

Context-sensitive help is available from many places in FlexNet Manager Suite. Look for the **Help** button in the topright corner of each page.

The *FlexNet Manager for SAP Applications Installation Guide* PDF provides information regarding FlexNet Manager for SAP Applications installation, licensing, and authorizations and roles. It is included in the folder `0_Documentation` of the product zip file.
Before using FlexNet Manager for SAP Applications, ensure that FlexNet Manager Suite has been configured appropriately for your organization. For more information, see the FlexNet Manager Suite product documentation.

Product Training

Online and class-based training materials are available for customers using FlexNet Manager for SAP Applications or FlexNet Manager Suite, through the Flexera University.

For details, see:

- Instructor-led courses: `http://www.flexerasoftware.com/services/education/instructor-course-listing-enterprise-license-optimization.htm`
- Online-courses: `http://www.flexerasoftware.com/services/education/online-course-listing-enterprise-license-optimization.htm`.

Contacting Us

You may contact us from anywhere in the world by visiting our Website at: `http://www.flexera.com`.

2

Installing the SAP Connector Libraries for integration with SAP

The following tasks only need to be completed if the product is being integrated with SAP to centrally monitor and analyze your organization's SAP license usage.

- Downloading SAP Connector for Microsoft .NET
- Installing the connector on the FlexNet Inventory Beacon
- Installing the connector on the FlexNet Manager Suite Servers.

Downloading SAP Connector for Microsoft .NET

Download and install the SAP Connector .Net Framework:

1. Download SAP Connector for Microsoft .NET 3.0.25.0 for Windows 64bit (compiled with .NET framework 4.0) from the SAP Product Downloads website https://support.sap.com/en/product/connectors/msnet.html.
2. After the download, extract and install the .msi file. The .msi file installs various .dll files.

   Note: *The installer asks you to specify a location which defaults to* `C:\Program Files\SAP\SAP_DotNetConnector3_Net40_x64\`. *This path contains the following .dll files:* `sapnco.dll` *and* `sapnco_utils.dll`.

3. Locate these files and follow the instructions in *Installing the connector on the FlexNet Inventory Beacon* and *Installing the connector on the FlexNet Manager Suite Servers* to copy the product installation paths.

Installing the connector on the FlexNet Inventory Beacon

This should be done on any of the inventory beacons which are integrating with SAP systems.

Copy `sapnco.dll` and `sapnco_utils.dll` from the SAP Connector installation path to: `[BeaconInstallationPath]\DotNet\bin`.

For example, if using the default installation path, the files will be copied to:

- `C:\Program Files (x86)\Flexera Software\Inventory Beacon\DotNet\bin\sapnco.dll`
- `C:\Program Files (x86)\Flexera Software\Inventory Beacon\DotNet\bin\sapnco_utils.dll`.

Installing the connector on the FlexNet Manager Suite Servers

This step only needs to be done for FlexNet Manager Suite On-Premise customers who are using the SAP integration.

On the FlexNet Manager Suite Presentation Server, copy `sapnco.dll` and `sapnco_utils.dll` from the SAP Connector installation path to: `[FNMSInstallPath]\SAP\Portal\bin\`.

For example, if using the default installation path, the files will be copied to:

- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\SAP\Portal\bin\sapnco.dll`
- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\SAP\Portal\bin\sapnco_utils.dll`.

On the FlexNet Manager Suite Batch Server, copy `sapnco.dll` and `sapnco_utils.dll` from the SAP Connector installation path to: `[FNMSInstallPath]\BeaconSvc\bin\`, and `\DotNet\bin\[FNMSInstallPath]`.

For example, if using the default installation path, the files will be copied to:

- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\BeaconSvc\bin\sapnco.dll`
- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\BeaconSvc\bin\sapnco_utils.dll`
- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\DotNet\bin\sapnco.dll`
- `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\DotNet\bin\sapnco_utils.dll`.

Note: *The FlexNet Manager Suite Presentation Server and FlexNet Manager Suite Batch Server may be a single "application server" if using a single-server deployment.*

3

Components for FlexNet Manager for SAP Applications

FlexNet Manager for SAP Applications is designed for use with SAP® and S/4HANA Business Suite applications. It integrates with FlexNet Manager Suite to offer enhanced processes for gathering user and consumption data from SAP servers, to provide transparency, and optimize your SAP license position.

FlexNet Manager for SAP Applications consists of the following components:

- FlexNet Manager Suite
- SAP Admin Module
- Satellite Transport
- SAP Inventory Agent.

FlexNet Manager for SAP Applications includes support for:

- S/4HANA systems in User and Package license optimization.
- Migration to S/4HANA systems. New migration and license surplus fields allow you to plan for, and track, your migration so that you see your current license position with your existing landscape(s) and can identify any license surplus that can be used as credits towards your S/4HANA implementation.

Workflow Summary

This overview explains how the components of FlexNet Manager for SAP Applications interact. For information about the individual components of FlexNet Manager for SAP Applications, see the *FlexNet Manager for SAP Applications User Guide* PDF.

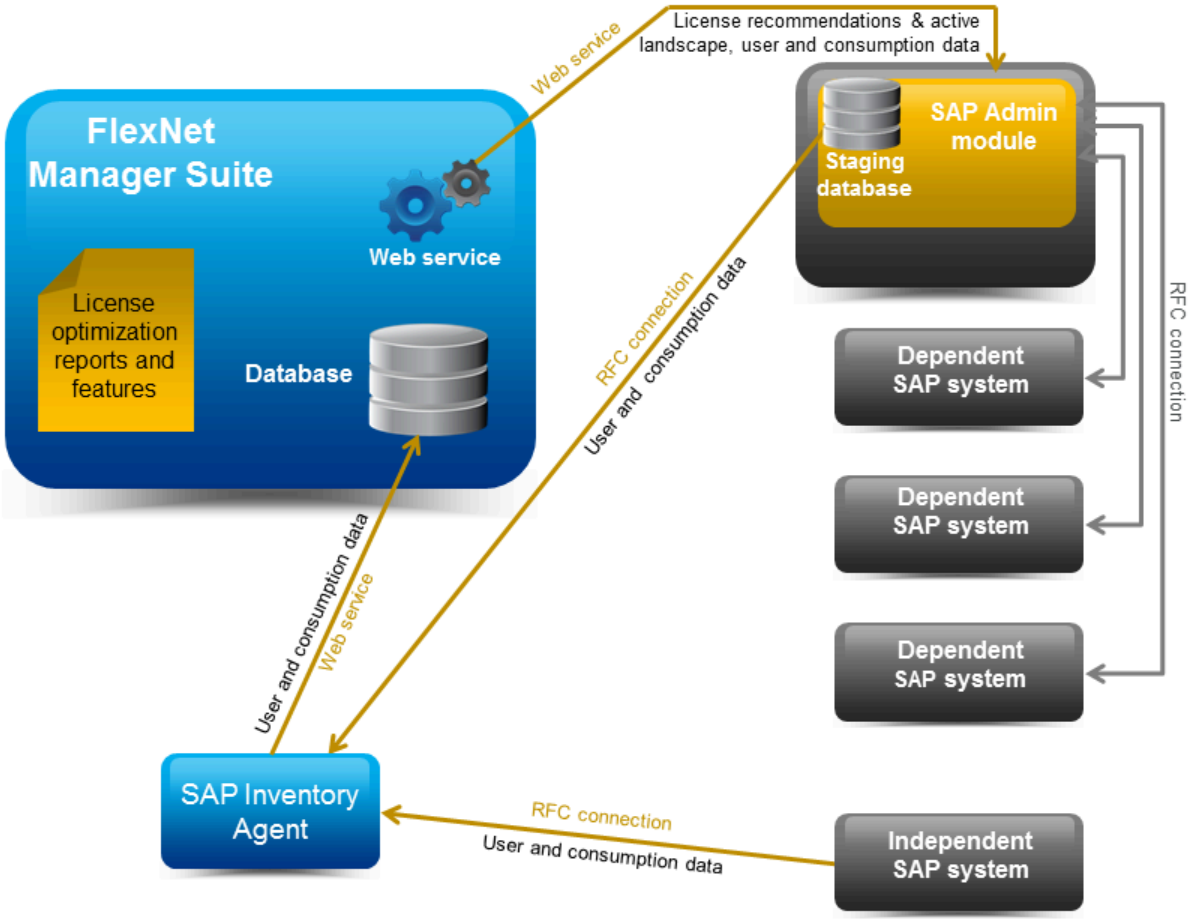
The SAP Admin module connects to its dependent SAP systems using RFC-enabled functions, and collects user and consumption data. The collected data is held in a staging database on the SAP Admin module. (An SAP landscape can contain more than one SAP Admin module, each with its own dependent SAP systems.) The SAP Inventory Agent reads the data and transfers it to the FlexNet Manager Suite database. FlexNet Manager Suite analyzes the data and determines the optimal license position, based on a combination of license-assignment rules and duplicate-user rules that you have configured. The resulting recommendations are staged on the FlexNet Manager Suite server from where

they are imported into the SAP Admin module.

In the SAP Admin module, the SAP administrator can review the recommended changes. She decides which recommendations she wants to accept and sets the license types as suggested. When the SAP administrator updates the license types, the SAP Admin module then accesses the user primary records on its dependent SAP systems and updates them accordingly.

SAP systems that are not connected to the SAP Admin module are referred to as *independent SAP systems*. The SAP Inventory Agent accesses and collects the user primary record information from these systems via Remote Function Call (RFC). The data can be analyzed in SAP mode in FlexNet Manager Suite in the same way as data of dependent SAP systems. For information on remediation on independent SAP systems, see *Remediation on Independent SAP Systems* in the *FlexNet Manager for SAP Applications User Guide* PDF.For information on remediation on independent SAP systems, see *Remediation on Independent SAP Systems*.

Figure 1: Data flow between the components in an on-premises implementation



FlexNet Manager Suite

FlexNet Manager Suite provides hardware and software asset management for enterprises from desktop to datacenter. Asset reports provide actionable insight into software installations, application usage, license compliance status, upcoming payments, and purchased versus installed license reconciliation.

FlexNet Manager for SAP Applications integrates with FlexNet Manager Suite to enable robust features for SAP license optimization and SAP license management, and to enhance the transparency of your SAP licensing situation.

The license management and optimization capabilities of FlexNet Manager for SAP Applications are available from the web-based user interface of FlexNet Manager Suite. These capabilities offer efficient processes for analyzing user and consumption data, and provide instant, up-to-date information about your license position.

You can access almost all the features of FlexNet Manager for SAP Applications via FlexNet Manager Suite's web interface, using the SAP button in the modal navigation bar. The remaining features, which are mainly related to remediation, are available from the SAP Admin module.

The web-based user interface provides fast and easy access from virtually any PC. The SAP dashboard shows a highlevel summary of your current baseline and optimal license position in a diagram, to enable you to quickly identify areas that need attention.

The System Landscape Editor, also available in SAP mode, enables you to represent your organization's system landscape, reflecting your organization's structure or your organization's SAP contracts. The systems that you include in the system landscape are inventoried and provide data such as user primary records, role memberships, and activity logs. This data is subsequently analyzed to determine the current baseline license position (the license position that is achieved by executing a user consolidation). Using reports and license rules, you can determine the optimal license position. This information is sent to the SAP Admin module where you can update the SAP user license data accordingly.

The chapter SAP Functionality in FlexNet Manager Suite will help you become familiar with the general features of the SAP mode in FlexNet Manager Suite. Refer to the FlexNet Manager Suite documentation for detailed information on FlexNet Manager Suite.

SAP Admin Module

The SAP Admin module is an SAP application that helps SAP administrators to manage their SAP license assignments.

The SAP Admin module is written in ABAP/4, and a development partner namespace is reserved from SAP AG. The SAP Admin module is installed directly on an SAP system and therefore does not require any external hardware or software. Dedicated R/3 tables are used for data storage. Thus, there cannot be any conflicts with SAP functions or company-specific developments.

Each SAP Admin module collects data from its dependent SAP systems. The collected data is stored in a staging database. The SAP Inventory Agent connects to the staging database and loads the data into the FlexNet Manager Suite database. The data can then be analyzed using the SAP features in the web interface of FlexNet Manager Suite.

You use the SAP Admin module to update the user primary records in the connected SAP systems (also called *dependent SAP systems*) according to the license-type optimization data the SAP Admin module receives from FlexNet Manager Suite. In addition, the SAP Admin module provides features for maintaining and cleaning up user primary data to optimize the quality of the user records (for example, the Logon Evaluation Report). This helps to improve the results of the license optimization. You can specify the relevant criteria on the SAP Admin module according to your organization's requirements.

If required, your implementation can contain several SAP Admin modules that are connected to FlexNet Manager Suite. Each SAP Admin module has its own set of dependent SAP systems.

The SAP Admin module of FlexNet Manager for SAP Applications is available for SAP Basis release 7.0 or higher.

The menus and elements of the SAP Admin module are described in more detail under Main Menu Items in the SAP Admin Module.

Refer to the *FlexNet Manager for SAP Applications Installation Guide* for information regarding FlexNet Manager for SAP Applications installation, licensing, authorizations, and roles.

Satellite Transport

The FlexNet Manager for SAP Applications Satellite transport (RFC-enabled function modules and the required data structures) is an optional component. It is only required in specific scenarios.

For each SAP Basis release that is maintained by SAP AG, a specific release for FlexNet Manager for SAP Applications satellites is available—currently ranging from SAP Basis release 4.6C to 7.5.

For more information on the Satellite transport, see the *FlexNet Manager for SAP Applications Installation Guide* PDF.

SAP Inventory Agent

The SAP Inventory Agent (SAPReader.exe) accesses and collects the user primary record information from SAP Admin module systems and independent SAP systems via Remote Function Call (RFC).

The SAP Inventory Agent collects the data that is staged on the database in the SAP Admin module and uploads it to the FlexNet Manager Suite database. The data was collected from the dependent SAP systems that are connected to the SAP Admin module; it usually includes user information (user name, first and last name, validity dates, user type, user group, accounting number, cost center, and login times), transactions, CPU and memory consumption, roles and sub-roles, and license types and their hierarchy. After the SAP Inventory Agent has uploaded the data to FlexNet Manager Suite, it is cached in the FlexNet Manager Suite database and can be used to optimize your organization's license position.

The SAP Inventory Agent is run using the Windows scheduled task `Import SAP user and activity information`. You can adjust the timing of the automated data collection from the SAP Admin module. The default setting for the SAP Inventory Agent is to run weekly. However, you can configure the SAP Inventory Agent to run more often or less often. To change the scheduling of the SAP Inventory Agent, open the Microsoft Windows Task Scheduler and configure the task `Import SAP user and activity information`. For information about the Task Scheduler, see `http://technet.microsoft.com/en-us/library/dd363654(v=ws.10).`

In a default installation, SAPReader.exe is located in the folder `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\DotNet\bin`. The SAP Inventory Agent is installed automatically during installation of FlexNet Manager Suite.

SAP Inventory Agent Options

You can control the SAP Inventory Agent via the command line using a number of options.

Table 1: SAP Inventory Agent options

Parameter	Description
-c *<configuration_file>*	Specifies the XML file that contains the SAP RFC connection details for gathering SAP inventory. This XML file can be exported from the **System Landscape:** *name* page in FlexNet Manager Suite (.

Parameter	Description
-e	Encrypts passwords inside the file specified by the `-c` option. Example: "`SAPReader.exe -c <configuration_file> -e`"
-o *<output_folder>*	Outputs SAP inventory to a specified folder.
-s *<server_name>*	Reads data from a specified system. To specify multiple systems, separate the systems with a comma, using the following format: *<ServerName>*/*<SystemNumber>*/*<SystemID>*/*<ClientID>*, *<ServerName>*/ *<SystemNumber>*/*<SystemID>*/*<ClientID>* This option supports any string matching.
-t	Reads SAP information in a single thread.
-a	Tests the connection to all SAP Admin module and independent systems. To test the connection to a specific system, use the `-a` option in combination with the `-s` option. Example: "`SAPReader.exe -a -s <ServerName>`"
-i *<input_file_or_folder>*	Imports the SAP inventory from a specified folder or file, into FlexNet Manager Suite.
-b	For use with inventory beacons: uncompresses an intermediate package file and resolves its content into the FlexNet Manager Suite database.
-p *<consumption-enddate>*	Specifies the end date of the consumption period, using the format yyyymm. When importing consumption data from an SAP Admin module, the available consumption data is dependent on the import of relevant data from its dependent SAP systems.
-m *<m-months>*	Specifies the number of months that SAP consumption data should be read, ending today or as specified by the `-p` option. When importing consumption data from an SAP Admin module, the available consumption data is dependent on the import of relevant data from its dependent SAP systems.
-f *<configuration_file>*	Specifies the XML file that contains the list of SAP tables to import.
-l	Calculates the SAP license position.
-n *<TenantUID>*	Specifies the tenant unique identifier for retrieving the SAP RFC connection.
-help	Displays this help text.

SAP Inventory Agent Logging

By default, the SAP Inventory Agent generates a log file when it runs on the application server or on an inventory beacon server.

Log files are created in the folder `%CommonAppData%\Flexera\Compliance\Logging\SAPReader\SAPReader.log`. (The location varies across versions of Microsoft Windows. For example, on Windows Server 2008 R2 Standard, this path is normally `C:\ProgramData\Flexera\Compliance\Logging\SAPReader\SAPReader.log`.)

Log files are usually created daily. The current log file has the name SAPReader.log. The names of older log files receive

a suffix with the date, in the format yyyy-mm-dd, for example, SAPReader.log2014-01-14.

Log files are kept for 30 days; log files that are older than that are automatically deleted.

4

SAP Functionality in FlexNet Manager Suite

In this chapter, you will learn about:

- Accessing SAP functionality in FlexNet Manager Suite — see Accessing the SAP Features.
- Selecting the SAP system landscape that you want to work in — see Selecting the System Landscape.
- Working with page elements in FlexNet Manager Suite — see Page Elements in FlexNet Manager Suite.
- Using grids in FlexNet Manager Suite — see Grids.

Accessing the SAP Features

To access the SAP features in FlexNet Manager Suite:

1. Use your web browser to browse to `http://Your-portal-server/Suite`, where *Your-portal-server* is the name of the web server on which FlexNet Manager Suite is installed.
2. In the FlexNet Manager Suite web interface, click **SAP**.

The **SAP Overview** page displays.

If your setup contains more than one system landscape, the **Choose an SAP System Landscape** page displays. Click on a system landscape to display the **SAP Overview** page for that landscape.

To return to this page at any time, click **SAP** in the modal navigation menu (at the top of the page) or the bread crumbs (below the main navigation bar).

Selecting the System Landscape

If your setup contains more than one landscape, you need to select the system landscape in which you want to work.

You are prompted to select a system landscape each time after you do one of the following:

- Work in SAP mode for the first time in a session and click a menu item (other than **System Landscapes** under **Configuration**).
- Access the **SAP System Landscapes** page and click a menu item.

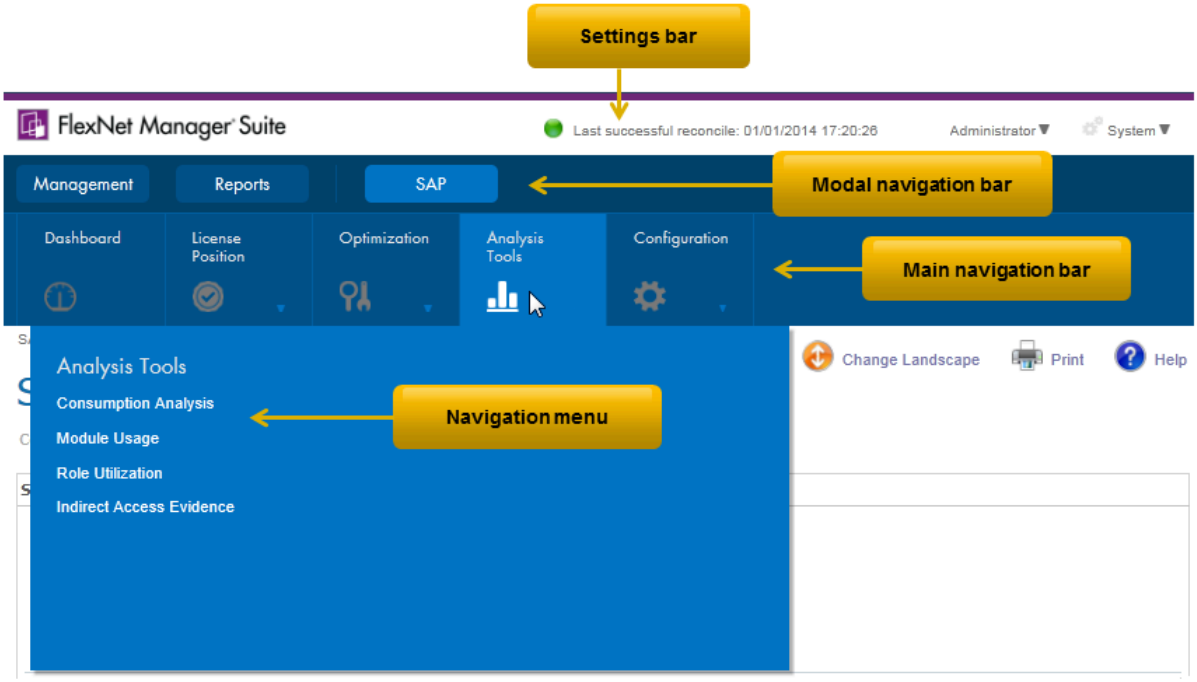
To select a system landscape:

- If the **Choose an SAP System Landscape** page prompts you to select a system landscape, click on the landscape name for which you want to perform an action.
- If you are accessing a menu option other than **System Landscapes** under **Configuration**, you can switch to a different system landscape by clicking the **Change Landscape** icon in the top-right corner of the page.

Page Elements in FlexNet Manager Suite

There are a number of common elements that you find on all pages of FlexNet Manager Suite.

- The *settings* bar at the top of the page contains high-level status information, such as the last reconciliation date and the account name, and the **System Settings** menu.
- Navigation bars:
  - The *modal navigation bar* changes the mode in which FlexNet Manager Suite is operating. Click the **SAP** button on this navigation bar to access the SAP functionality of FlexNet Manager for SAP Applications.
  - The *main navigation bar* displays the primary functionality areas. In this documentation, this is usually simply referred to as the *navigation bar*.
  - The *navigation menu* opens when you point the mouse to an item in the main navigation bar.
  - The *breadcrumbs* at the top of the page show your navigation path to the currently displayed page.
  - The *title* at the top of the page identifies the information currently displayed. If there are multiple landscapes, the Change Landscape icon enables you to switch to a different system landscape (available on all pages except **SAP System Landscapes** under **Configuration**).
  - The main area on the page is divided into *sections* containing grids, data entry masks, or graphs.



Grids

Grids are used throughout FlexNet Manager Suite. For most grids, you can sort, filter, and group data. You can also export data from any grid.

The preferences you specify are stored as a Windows roaming user profile, so that your preferences are applied each time you access FlexNet Manager Suite. See the documentation about the Windows operating system running on your application server (Windows Server 2003 or Windows Server 2008) for more information about roaming user profiles.

A list of records is automatically displayed when you navigate to a grid. When you leave a grid and return, any existing filter is removed. However, the following settings that you selected in the **Advanced** menu will still apply:

- Number of items per grid (**Change Page Size** option)
- Any grouping settings (**Show Grouping** option)
- Fields selected for display (**Choose Fields** option)

Navigation elements are displayed at the bottom of the page. Click the forward and backward arrows or select a specific page number to navigate through the grid.

To modify the number of items displayed on each page, open the **Advanced** menu and select **Change Page Size**. Then select the appropriate number of items from the list.

Filters

Filters enable you to reduce the number of items in a list by showing only those items that match patterns you specify.

You can filter the data of only one column or multiple columns.

There are two levels of filters available in grids: simple, and advanced. You start to build your filter controls in the same way for both levels.

Simple Filtering

Use the simple filter to filter the data of only one column, or to set filter conditions and values for multiple columns, where the filters are combined in a logical-AND.

To filter a grid:

1. At the top of the grid, open the **Advanced** menu and click **Show Filter**. (A check mark appears if the option is activated.)
2. A new row appears at the top of the grid, immediately under the column headers. In each column, there is a field for you to type a value that you want entries to match. To the right of each of these fields there is a small filter icon.
3. In the column or columns where you want the filter to be active, type the value that the filter should match.

   When you pause typing for a short time, the filter is automatically applied. Filter matches are case insensitive. By default, the filter displays items that *start with* the value you have typed. You can change this behavior in the next step.
4. To change the way that your filter value is applied, click the small filter icon to the right of the filter value field.

   A menu of filtering conditions appears, with the current condition checked. The default condition is **Begins with**. Select a different condition to change the effect of the filter.
5. If required, repeat steps 3 and 4 for other columns.

   If you filter the data of multiple columns, they are combined with a logical-AND. This means that grid items will only be displayed when they match *all* of the conditions and values.

Advanced Filtering

The Filter Builder enables you to create complex filter conditions for grids.

Use the Filter Builder if you want to filter multiple columns and combine these filters with an option other than a logical-AND. For example, you may want items that match either the value in the first column or the value in the second column, but not necessarily both (this is a logical-OR relationship). There are other ways to make a more advanced filter as well (such as a filter that matches a choice of values in a single column). You have all these options and more available in the advanced Filter Builder.

To create an advanced filter:

1. Do one of the following:
   - Start a new filter (click **Advanced** and select **Show Filter**).
   - Continue to extend an existing simple filter (see Simple Filtering).

When a filter is in operation, a summary statement of the filter appears at the bottom of the page. The summary translates your filter settings into terms suitable for the SQL database, with the percent sign acting as a wildcard that substitutes for any other characters. If you have not yet set any filter values, this hyperlinked statement says **Create Filter**.

Note: *Only a single wildcard character is currently supported when filtering. Multiple multi-character wildcards are not supported in SAP custom rule sets, and items that come after a second wildcard character are ignored in the custom rule filter.*

2. Click **Create Filter**.

   The **Filter Builder** dialog appears. The current filter is described, with each color-coded part of the text also acting as a control that you can click and change.

3. Click any area of the Filter Builder to see a context menu of available options for that position.

   You can create complex filters using groups to collect some matches together. One key point to realize is that each logic rule groups together, and applies to, the items immediately below it (until interrupted by another logic rule). This means that you read the logic rule rather backwards. Instead of the spoken language ordering "A or B or C", the layout reads "Or A,B,C".

4. When you are satisfied with your settings in the Filter Builder, click **OK** to apply the filter to your grid and see the results.

Filter Builder Options

You can create complex filters using the Filter Builder options.

The options available by clicking a logic rule (such as And or Or) are as follows.

Table 2: Filter Builder options

Option	Description
And	The following (child) rules must all be satisfied.
Or	A grid item will be displayed if it satisfies any of the following (child) rules.
Not And	The results are opposite from **And**—items satisfying all the child rules are excluded, and everything else is displayed.
Not Or	The results are opposite from **Or**—items satisfying any of the child rules are excluded, and everything else is displayed.
Add Group	Inserts a new logic rule (defaulting to **And**) as a child of this one. You can nest multiple levels of groups.
Add Condition	Inserts a new statement with default values under this logic rule. Identical to clicking the **+** symbol to the right of this logic rule.
Remove	Delete this logic rule and all its children from the filter. There is no warning confirmation, and no undo. If you remove all content from the filter, a new logic rule (defaulting to **And**) appears as a starting point for your next creation.

Turning Filters On and Off

When you set a filter, a check box appears as part of the filter summary statement. While the filter is active, this check box is selected. You can control filter activity by clicking this check box.

To temporarily disable a filter:

1. Click the check box to clear it.

   The filter is disabled, and the current page from your grid displays in full. However, the settings for your filter are not altered.

2. Click the check box a second time to restore the filter.

Filtering vs. Searching

Filtering a list is very similar to searching. It requires a new fetch from the underlying database, and filters the entire set of data for this list, not just the currently-visible page.

Unlike searching, filtering enables you to:

- Constrain the search for a value within a specific column (or field).
- Combine distinct values for different columns.
- Choose different filter conditions for each of the active columns.
- Include different values for a column (A or B or C) to include in the display.
- Invert the results of the filter (using Not).

You can combine searching and filtering, in either order.

Searches

Searching is a convenient way to reduce the amount of data to be downloaded to your browser, and thereby speed up your work. You can search within any of the columns displayed in a grid using the search toolbar at the top of the page.

Searching

You can combine searching and filtering, in either order. Searching applies only to the fields (or columns) currently displayed in a grid. To search hidden fields, you must first make them visible in the grid. The search is case insensitive.

To search for items from a grid:

1. At the top left of the grid, enter the value to search for in the search field **Search columns...**.
2. Click the magnifying glass button to the right of the search field.

Restoring Grids after Searching

Restore a grid after a search to clear the **Search** field and refresh the data in the grid.

To restore the original grid after a search:

1. Click the clear search button .

Exporting a Grid

When you have arranged the contents of a grid to your liking, you can export the grid to a choice of other file formats for distribution or additional work.

Grids can be exported to the following formats:

- Microsoft Excel 97-2003
- Microsoft Excel 2007+
- Adobe PDF
- CSV File

Data exported to .rtf format can be viewed and edited using Microsoft Word. Other text editors, such as Microsoft Wordpad or Write do not support all of the RTF features used in .rtf files exported from FlexNet Manager Suite.

An exported grid includes the current column positions and sort sequence.

To export a grid:

1. Open the **Advanced** menu at the top of the grid and select the appropriate option:
   - To export the entire grid, select **Export All**.
   - To export a selection of grid rows, select **Export Selection**.
2. Select the appropriate format from the list.
3. Depending on your browser, a dialog displays asking whether you want to open or save this file. Select the option to save, and click **OK** or **Save**.
4. Depending on your browser, the file may automatically download to your default location, or a **Save As** dialog may display. If there is a **Save As** dialog, browse to a folder to store the exported grid, and enter an appropriate file name. Click **Save**.
5. When the download is complete, choose to open the exported grid, open the folder, or close the dialog.

Changing the Columns Displayed in a Grid

Most grids in FlexNet Manager Suite show only a selection of the fields from the underlying database. You can configure the grid to show as many or as few of the underlying fields as you choose. One reason to change the displayed fields is to perform special searches or filtering on the data. Your choice of columns to display persists when you go to look at a

different page and then return to the one you modified.

To change the columns displayed in a grid:

1. In the button bar at the top of the grid, click **Advanced**.
2. In the button menu that appears, click **Choose Fields**.

   The **Field Chooser** palette appears, floating over the grid. You may drag the palette by its title bar to any convenient location.
3. To add a column to the grid, drag the new column header from the **Field Chooser** to your preferred position in the row of column headers.

   Small down and up arrows appear to indicate where the new column will be inserted in the column headers.
4. To remove a column from the grid, drag the column header from the header row and drop it anywhere on the **Field Chooser**.

   The column disappears from the grid, and the column header is inserted in alphabetical order into the **Field Chooser**.
5. To close the **Field Chooser**, click the red **X** button in the top-right corner of the **Field Chooser**.

5

Initial Setup of FlexNet Manager Suite

Note: *Before executing any of the tasks in this section, ensure that FlexNet Manager Suite has been installed and configured.*

Typically, you would setup FlexNet Manager Suite before configuring the SAP Admin module.

The initial setup of FlexNet Manager Suite usually includes the following tasks:

- Setting up the system landscape—see System Landscape Setup.
- Maintaining the collection of user and consumption data from SAP systems using the SAP Inventory Agent—see Collection of User Details and Consumption Data from SAP Systems.
- Setting access rights—see Access Rights to SAP Functionality.
- Modeling your SAP licensing information—see Licensing Information Setup.

System Landscape Setup

In SAP mode of FlexNet Manager Suite, you use the System Landscape Editor to represent and manage all your SAP systems.

Your systems are organized in a landscape or multiple landscapes, according to your enterprise's requirements. You can group your systems into a hierarchical structure as needed. For example, you could create groups based on your organization's structure (per branch, business unit, and so on) or according to the systems' technical properties.

The System Landscape Editor provides an overview of all the SAP systems that are organized in a landscape. It is the primary area where you add, edit, and delete system landscapes. You can change the system landscape's status to enable and disable updating the dashboard with licensing data.

You use the System Landscape Editor to add SAP Admin module systems, dependent, and independent SAP systems to a landscape. In addition, you configure the RFC connection details for the systems that connect to FlexNet Manager Suite (SAP Admin module systems and independent SAP systems connect to FlexNet Manager Suite, but there is no direct

connection between FlexNet Manager Suite and dependent SAP systems). It also enables you to edit existing systems and to remove systems from the landscape.

If you are using inventory beacons, the landscapes that you define in the System Landscape Editor are distributed to all inventory beacons. You can then define the SAP systems for these landscapes on the inventory beacon.

For more information about defining an SAP system on an inventory beacon, see Creating SAP Connections.

Accessing the System Landscape Editor

To access the System Landscape Editor:

1. In FlexNet Manager Suite, click **SAP** in the top modal menu.
2. In the navigation bar, click **Configuration**.
3. Select **System Landscapes**. The **SAP System Landscapes** page is the main page of the editor and contains a list of the system landscapes.
4. Use the **Advanced > Choose Fields** option to display all fields you require:

Field	Notes
Name	The name of the system landscape that was provided when the landscape was created.
Description	A description of the system landscape.
Status	The status of a landscape indicates the following: • `Active` — The dashboard will be updated with data on the optimal license position from the landscape. • `Inactive` — The dashboard will not be updated with data on the optimal license position from the landscape. • `Archived` — The landscape is no longer in use and has been archived. License information from an archived landscape will not be synchronized with the software licenses presented in FlexNet Manager Suite. • `Simulation` — The landscape is not a production landscape. Instead, it is used only for simulating the application of license rules and analyzing their effect on the compliance position.
Creation Date	The date and time when the landscape was created.
Creation User	The user who created the landscape.
Updated Date	The date and time when the landscape was last changed.
Updated User	The user who made the last change to the landscape.

5. Drill down into a system landscape by double-clicking on it.

The corresponding **System Landscape:** *name* page shows the systems (SAP systems and non-SAP systems) and system

groups that are included in the landscape in the **SAP Systems** list.

The System Landscape Details Page

When you access a system landscape via the System Landscape Editor, the corresponding **System Landscape:** *name* page shows information pertaining to the selected landscape.

For information on how to display the **System Landscape:** *name* page, see Accessing the System Landscape Editor.

Details Section

The **Details** section of the **System Landscape:** *name* page shows the following information.

Option	Description
Name	The name of the system landscape that was provided when the landscape was created.
Description	A description of the system landscape.
Status	The status of a landscape indicates the following: • `Active` — The dashboard will be updated with data on the optimal license position from the landscape. • `Inactive` — The dashboard will not be updated with data on the optimal license position from the landscape. • `Archived` — The landscape is no longer in use and has been archived. License information from an archived landscape will not be synchronized with the software licenses presented in FlexNet Manager Suite. • `Simulation` — The landscape is not a production landscape. Instead, it is used only for simulating the application of license rules and analyzing their effect on the compliance position.
Handling over-consumption of license types	This option indicates how FlexNet Manager for SAP Applications should calculate the license position for license types that are over-consumed. • **Recommend promoting users to spare superior licenses**—Over-consumed licenses can be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type. This is the default setting. • **Show deficits against assigned license (license is at risk)**—Spare superior licenses are not used to cover licenses that are *over-utilized*. Instead, the over-consumed license is shown as *over-utilized*, and the resulting license deficit can be viewed on the **License Position** page.
Location	The location to which the landscape is allocated.
Cost Center	The cost center to which the landscape is allocated.

Option	Description
Business Unit	The business unit to which the landscape is allocated.
Category	The category to which the landscape is allocated.
Created by	The user who created the landscape.
Created at	The date and time when the landscape was created.
Last updated by	The user who made the last change to the landscape.
Last updated at	The date and time when the landscape was last changed.

SAP Systems Section

On the **System Landscape:** *name* page, use the check box **Show outline view of landscape** to select between two display modes. When the check box is selected, the system tree on the left provides a structural overview of the system landscape and its systems and system groups. The list on the right provides information about the system or system group that is currently selected in the system tree. You would usually work in this outline view when setting up your landscape.

When the check box **Show outline view of landscape** is cleared, all systems and system groups of the landscape are shown in a grid view. You would usually work in this view when you want to view the details of several systems at a glance or if you are searching or filtering systems.

The setting of the check box **Show outline view of landscape** will be remembered; that is, the next time you open a system landscape, the check box will have the same setting as when you last left it.

The **SAP Systems** grid contains the following columns (listed alphabetically). By default, some are shown in the column chooser. Select **Advanced > Choose Fields** to display additional fields.

Column	Description
Active Price List	The active price list is imported from the relevant SAP system (via the USMM transaction).
Client ID	The client ID of the SAP system.
Database System	The database technology that the SAP server is using.
Default License Type	The default license type that is used if no license type is specified for a user. This data is automatically imported when the system is inserted. For technical reasons, the default license type for non-SAP systems is set to 91.
Dependent On	If the system type is **Dependent SAP system**, this column shows the name of the SAP Admin module system to which the dependent system is connected. Otherwise, this column is blank.
FNM-SAP Version	Shows the FlexNet Manager for SAP Applications release that is currently installed. This data is automatically imported when the system is created. For offline systems, this field is blank.

Column	Description
Group Path	Contains the path of the system within the landscape. (This column is available only in grid view.)
Hardware Key	The hardware key that is assigned to the SAP system. This data is automatically imported when the system is created. This field is blank for portals, non-SAP systems, and system groups.
Installation No.	The system's installation number that is registered with SAP. This data is automatically imported when the system is created.
Inventoried By	The application server (the text `Application server` displays) that was used to collect the SAP inventory.
Inventory Date	The date when the SAP system inventory was collected.
Last Changed On	The date when the system was last changed. This data is automatically imported when the system is created.
LAW Version	The version of the SAP LAW. This data is automatically imported when the system is created.
Migration Status	Displays one of: • Blank if no migration status has been set for this system, or if the **SAP suite type** is `S/4HANA`. • `Not planned` • `Planned` • `In progress` • `Completed`.
Parent Group	The name of the parent group of which the system is a child. If the system does not belong to a parent group, this field is empty. (This column is available only in grid view.)
SAP BASIS Patch	The version of the SAP Basis patch that is installed.
SAP BASIS Release	The version of the SAP Basis release that is installed.
SAP Suite Type	Shows one of: • `Classic Business Suite` • `S/4HANA` — This choice requires that the **SAP System Type** is set to `Independent SAP system` or `Dependent SAP system`. ***Tip:*** *SAP Admin module is not supported if the* ***SAP Suite Type*** *is set to S/4HANA.*
Server	The name of the SAP server.

Column	Description
ST-PI Release	The version of the ST-PI release that is installed.
System Environment Type	The type of the system environment: • `Production` • `Test` • `Customizing` • `Demo` • `Training/Education` • `SAP Reference`.
System ID	Three-character identifier that identifies the SAP system.
System Number	The system number of the SAP system.
System Type	The type of SAP. The following options are available: • `Dependent SAP system` — A system that is connected to an SAP Admin module. • `Independent SAP system` — A system that is not connected to an SAP Admin module. • `Non-SAP system` — A system that communicates with one of your SAP systems, but that is not an SAP system itself. • `SAP Admin module` — A system that collects data from its dependent SAP systems for analysis in FlexNet Manager Suite.

Managing Your System Landscape

Organize your landscape in the structure that best meets your organization's requirements.

Managing your system landscape will usually involve the following tasks:

- Editing a System Landscape
- Adding a System Landscape
- Deleting a System Landscape
- Adding a Dependent SAP System
- Editing an Independent SAP System or SAP Admin Module System
- Deleting an SAP System
- Adding an SAP System Group

- Editing an SAP System Group
- Deleting an SAP System Group

For information on non-SAP systems, see Managing Evidence Using Non-SAP Systems. For information on non-SAP systems, see Managing Evidence Using Non-SAP Systems.

For information about defining, editing, and deleting SAP systems on an inventory beacon, see Managing Inventory Beacon Connections and its subtopics.

Important: *For inventory beacons which run on the central application server, the collection of SAP inventory data is* ***not*** *supported. In this scenario, the connections to the SAP systems must be configured directly in SAP mode using the web interface of FlexNet Manager Suite. For procedural information, see Adding an SAP Admin Module System, Adding a Dependent SAP System, and Adding an Independent SAP System.*

Managing your system landscape will usually involve the following tasks:

Editing a System Landscape

When you access the **SAP System Landscapes** page for the first time, FlexNet Manager for SAP Applications contains one inactive system landscape, named *Default System Landscape*. Some fields can be populated by clicking the **Select** button . This requires that the corresponding values have been added in FlexNet Manager Suite beforehand (using the options under **Management > Enterprise**).

To edit a system landscape:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that you want to modify. Alternatively, select the system landscape and click **View**.

   The **System Landscape:** *name* page opens.
3. In the **Details** pane, click **Edit**.

   The **System Landscape:** *name* page opens in edit mode.
4. Make your changes, and click **Save**.

Adding a System Landscape

You require sufficient access rights to add new landscapes. If you do not have sufficient rights, the **Add** button on the **System Landscapes** page will not be available. For more information, see *Access Rights to SAP Functionality*. For more information, see Access Rights to SAP Functionality.

In some scenarios, for example, if your company merged with another organization and is required to true-up its SAP systems separately, you might have to create multiple system landscapes to facilitate one true-up per system landscape. In scenarios with multiple system landscapes, each landscape requires its own license type hierarchy and user consolidation. For more information, see License-Type Hierarchy and User Consolidation, respectively. For more information, see the sections License-Type Hierarchy and User Consolidation, respectively.

To add a system landscape:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.

   The **SAP System Landscapes** page displays. It contains a grid with a list of all existing system landscapes.

2. Click **Add**.
3. On the **Create New SAP System Landscape** page, enter a name, a description (optional), and the status of the new landscape.
4. Under **Compliance**, select how over-consumed license types should be handled, and populate the fields under **Ownership**.

   For information about field values, see The System Landscape Details Page. Some fields can be populated by clicking the **Select** button . This requires that the corresponding values have been added in FlexNet Manager Suite beforehand (using the options under **Management > Enterprise**).

5. Click **Create**.

The new landscape is created and the **System Landscape:** *name* page displays.

Deleting a System Landscape

If you no longer need a system landscape, you can delete it.

To delete a system landscape:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, select the landscape or landscapes that you want to delete and click **Delete**.
3. In the **Delete System Landscape** dialog, click **Delete** to delete the landscape or landscapes.

Adding an SAP Admin Module System

You need to set up an SAP Admin module system in FlexNet Manager Suite before you can add SAP systems that are connected to this SAP Admin module.

This topic is relevant only if you are using FlexNet Manager for SAP Applications in an on-premises implementation. For adding an SAP Admin module in a Cloud implementation, see Creating SAP Connections.

To add an SAP Admin module to a system landscape in FlexNet Manager Suite:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.

   The **SAP System Landscapes** page displays.

2. Double-click the landscape to which you want to add a system. If you are setting up your landscape for the first

time, you would usually select the predefined `Default System Landscape`.

The **System Landscape:** *name* page displays.

3. Go to the **SAP Systems** section and click **Add**.

   The **Select system type** dialog display with the **SAP** option selected by default.

4. Click **OK**.

   The **Create New SAP System** page displays.

5. Go to the **Connectivity** section and select **SAP Admin Module**.

6. Complete as much of the following system information as possible.

   Required fields are highlighted in yellow.

Field Name	Description
System ID	The unique identifier of the SAP system to which you want to connect.
Client ID	The client ID of the SAP system to which you want to connect.
Description	The description of the SAP system to which you want to connect (optional).
Parent group	Click the ellipsis button to assign the system to a parent group.
SAP Admin Module	You selected this option above because you are adding an SAP Admin module system.
Server name	The DNS name of the SAP system. This value will be used by the RFC connection. This field can also store the SAP system's IP address.
System number	The SAP system number. This value will be used by the RFC connection.
User name	The user name that is to be used when connecting to the SAP system and making RFC calls.
Password	The password that is to be used when connecting to the SAP system and making RFC calls. ***Important:*** *The password should not contain any backward slashes (\). Otherwise, the connection to the SAP system cannot be established.*
Repeat password	Re-enter the password.
Test Connection	Click this button to test whether the connection details you entered are correct.
First name	The first name of the owner of the system.
Last name	The last name of the owner of the system.
Business phone number	The business phone number of the owner of the system.

Field Name	Description
Mobile phone number	The mobile phone number of the owner of the system.
Email	The email address of the owner of the system.
Location	The location of the owner of the system.

7. Click **Create** to save the information.

The SAP Admin module system is added to the system landscape, and the **SAP System:** *name* page displays the system details, as well as the lists of **Dependent SAP Systems** and **Users**. For information about the **Users** table, see Displaying the SAP System Users.

Adding a Dependent SAP System

Before you can add dependent SAP systems, you must have added the SAP Admin module that these dependent SAP systems connect to. For more information, see Adding an SAP Admin Module System.

Use the System Landscape Editor to add dependent SAP systems that are connected to an SAP Admin module system to the system landscape. Dependent SAP systems can be CUA systems or non-CUA systems.

This topic is relevant only if you are using FlexNet Manager for SAP Applications in an on-premises implementation. For adding a dependent SAP system in a Cloud implementation, see Creating SAP Connections.

To add a dependent SAP system, you initially create an *independent* SAP system that you add to an SAP Admin module. When you add this system to an SAP Admin module, the system becomes a *dependent* SAP system.

Tip: *You can also use this procedure to change an independent SAP system into a dependent SAP system.*

To add a dependent SAP system to an SAP Admin module:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the landscape that contains the SAP Admin module to which the system that you want to add is connected.

   The **System Landscape:** *name* page displays.
3. Go to the **SAP Systems** section and click **Add**.

   The **Select system type** dialog displays with the **SAP** option pre-selected.
4. Click **OK**.

   The **Create New System** page displays with the **Independent SAP system** option pre-selected in the **Connectivity** section.
5. Complete as many of the following field as possible with the system information that you have available.

Field Name	Description
System ID	The unique identifier of the SAP system to which you want to connect.
Client ID	The client ID of the SAP system to which you want to connect.
Description	The description of the SAP system to which you want to connect (optional).
System landscape	The name of the system landscape to which you are adding a system. This information is non-editable.
Parent group	Click the ellipsis button to assign the system to a parent group.
Independent SAP System	This option which is selected by default indicates that the new system is an independent SAP system. This system will be changed to a dependent SAP system at a later stage when you add it to an SAP Admin module.
Server name	The DNS name of the SAP system. This value will be used by the RFC connection. This field can also store the SAP system's IP address.
System number	The SAP system number. This value will be used by the RFC connection.
User name	The user name that is to be used when connecting to the SAP system and making RFC calls.
Password	The password that is to be used when connecting to the SAP system and making RFC calls. ***Important:*** *The password should not contain any backward slashes (\). Otherwise, the connection to the SAP system cannot be established.*
Repeat password	Re-enter the password.
Test Connection	Click this button to test whether the connection details you entered are correct.
First name	The first name of the owner of the system.
Last name	The last name of the owner of the system.
Business phone number	The business phone number of the owner of the system.
Mobile phone number	The mobile phone number of the owner of the system.
Email	The email address of the owner of the system.
Location	The location of the owner of the system.

Field Name	Description
SAP suite type	Choose one of: • `Classic Business Suite` • `S/4Hana`. ***Note:*** *Dependent SAP systems set to S/4HANA will not be imported into the SAP Admin module for SAP transport requests that run based on FlexNet Manager Suite version 2018 R2 or earlier. We recommend that you upgrade to the FlexNet Manager Suite version 2019 R1 or later if your SAP landscape does include S/4HANA dependent SAP system as this will allow you to view your complete SAP system.*
Migration status	This control is only available when the **SAP suite type** is set to `Classic Business Suite`. You may then choose one of: • `Not planned` • `Planned` • `In progress` • `Completed`.

6. Click **Create** to save the information.
7. Open the landscape that contains the SAP Admin module to which the system that you want to add is connected. Do one of the following:
   - Open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**. On the **SAP System Landscapes** page, double-click the landscape that contains the SAP Admin module to which the system that you want to add is connected.
   - In the breadcrumbs, click **System Landscape:** *name*.
8. Open the details page of the SAP Admin module to which the dependent SAP system is connected. To do so, on the **System Landscape:** *name* page, under **SAP Systems**, select the SAP Admin module and click **View**.
9. On the **SAP System:** *name* page, scroll down to the **Dependent SAP Systems** grid.
10. In the **Dependent SAP Systems** grid, click **Add**.

    The **Select SAP Systems** dialog displays.
11. Select the system that you created in steps 1 to 6. You can also add multiple systems in one step by selecting the respective check boxes.
12. Click **OK**.

The system type is changed to *dependent SAP system*, and the system is added to the system landscape. The **SAP System:** *name* page displays the system details as well as the **Users** grid. For information about the **Users** grid, see Displaying the SAP System Users.

Adding an Independent SAP System

This topic is relevant only if you are using FlexNet Manager for SAP Applications in an on-premises implementation. Independent SAP systems are not connected to an SAP Admin module. For information on adding an independent SAP system in a Cloud implementation, see Creating SAP Connections.

To add an independent SAP system:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the landscape to which you want to add an independent SAP system.

   The **System Landscape:** *name* page displays.
3. Go to the **SAP Systems** section and click **Add**.

   The **Select system type** dialog displays with the **SAP** option pre-selected.
4. Click **OK**.

   The **Create New System** page displays with the **Independent SAP system** option pre-selected in the **Connectivity** section.
5. Complete as many of the following field as possible with the system information that you have available.

   Required fields are highlighted in yellow.

Field Name	Description
System ID	The unique identifier of the SAP system to which you want to connect.
Client ID	The client ID of the SAP system to which you want to connect.
Description	The description of the SAP system to which you want to connect.
System landscape	The name of the system landscape to which you are adding a system. This information is non-editable.
Parent group	Click the ellipsis button to assign the system to a parent group.
Independent SAP system	This option which is selected by default (as detailed in Step 4 above) indicates that the new system is an independent SAP system.
Server name	The DNS name of the SAP system. This value will be used by the RFC connection. This field can also store the SAP system's IP address.
System number	The SAP system number. This value will be used by the RFC connection.
User name	The user name that is to be used when connecting to the SAP system and making RFC calls.

Field Name	Description
Password	The password that is to be used when connecting to the SAP system and making RFC calls. ***Important:*** *The password should not contain any backward slashes (\). Otherwise, the connection to the SAP system cannot be established.* ***Important:*** *On some configurations, a logon error can occur when connecting an independent SAP system. The issue may affect SAP systems up to SAP Basis release 6.4, but primarily affects systems running SAP Basis 4.6. It is recommended that you test the connection using the* ***Test connection*** *button. If the test returns an error saying that the connection to the system was established, but that credentials were incorrect, enter the password in uppercase letters. For more information, see SAP Note 792850.*
Repeat password	Re-enter the password.
Test Connection	Click this button to test whether the connection details you entered are correct.
First name	The first name of the owner of the system.
Last name	The last name of the owner of the system.
Business phone number	The business phone number of the owner of the system.
Mobile phone number	The mobile phone number of the owner of the system.
Email	The email address of the owner of the system.
Location	The location of the owner of the system.
SAP suite type	Choose one of: • `Classic Business Suite` • `S/4HANA`.
Migration status	This control is only available when the **SAP suite type** is set to `Classic Business Suite`. You may then choose one of: • `Not planned` • `Planned` • `In progress` • `Completed`.

6. Click **Create** to save the information.

The independent SAP system is added to the system landscape, and the **SAP System:** *name* page displays the system details as well as the **Users** list. For information about the **Users** table, see Displaying the SAP System Users.

Editing an Independent SAP System or SAP Admin Module System

To edit an independent SAP system or an SAP Admin module system:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that contains the system you want to edit. Alternatively, select the desired landscape and click **View**.
3. On the **System Landscape:** *name* page, under **SAP Systems**, double-click the system that you want to edit. Alternatively, select the desired system and click **View**.
4. On the **SAP System:** *name* page, click **Edit** to switch into edit mode. You can adjust the following fields.

Field Name	Description
System ID	The unique identifier of the SAP system to which you want to connect.
Client ID	The client ID of the SAP system to which you want to connect.
Description	The description of the SAP system to which you want to connect (optional).
Parent group	Click the ellipsis button to assign the system to a different parent group.
SAP Admin module	Select this option if the system is an SAP Admin module system.
Independent SAP system	Select this option if the system is an independent SAP system.
Server name	The DNS name of the SAP system. This value will be used by the RFC connection. This field can also store the SAP system's IP address.
User name	The user name that is to be used when connecting to the SAP system. This field is editable only for independent SAP systems.
System number	The SAP system number. This value will be used by the RFC connection.
Password	The password that is to be used when connecting to the SAP system. This field is editable only for independent SAP systems.
Repeat password	Re-enter the password. This field is editable only for independent SAP systems.
First name	The first name of the owner of the system.
Last name	The last name of the owner of the system.

Field Name	Description
Business phone number	The business phone number of the owner of the system.
Mobile phone number	The mobile phone number of the owner of the system.
Email	The email address of the owner of the system.
Location	The location of the owner of the system.
SAP suite type	This control is not available for an SAP Admin module. For an Independent SAP System, choose one of: • `Classic Business Suite` • `S/4HANA`.
Migration status	This control is not available for an SAP Admin module. For an Independent SAP System, this control is only available when the **SAP suite type** is set to `Classic Business Suite`. You may then choose one of: • `Not planned` • `Planned` • `In progress` • `Completed`.

5. Click **Save** to update the SAP system details.

Editing a Dependent SAP System

To edit a dependent SAP system:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the landscape that contains the SAP Admin module to which the system that you want to edit is connected.
3. On the **System Landscape:** *name* page, under **SAP Systems**, double-click the SAP Admin module to which the system that you want to edit is connected. Alternatively, select the desired system and click **View**.
4. On the **SAP System:** *name* page, scroll down to the **Dependent SAP Systems** list.
5. Double-click the desired dependent SAP system.
6. On the **SAP System:** *name* page, click **Edit** to switch into edit mode. You can adjust the following fields.

Field Name	Description
System ID	The unique identifier of the SAP system to which you want to connect.
Client ID	The client ID of the SAP system to which you want to connect.
Description	The description of the SAP system to which you want to connect (optional).
First name	The first name of the owner of the system.
Last name	The last name of the owner of the system.
Business phone number	The business phone number of the owner of the system.
Mobile phone number	The mobile phone number of the owner of the system.
Email	The email address of the owner of the system.
Location	The location of the owner of the system.
SAP suite type	Choose one of: • `Classic Business Suite` • `S/4HANA`
Migration status	This control is only available when the **SAP suite type** is set to `Classic Business Suite`. You may then choose one of: • `Not planned` • `Planned` • `In progress` • `Completed`.

7. Click **Save** to update the details for the dependent SAP system.

Deleting an SAP System

To delete an SAP system:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. Double-click the system landscape that contains the system that you want to delete. The **System Landscape:** *name* page is displayed.
3. In the **SAP Systems** grid, ensure that no filter is active so that all systems are displayed. Then, select the system that you want to delete and click **Delete**.

4. In the **Delete System** dialog, click **Delete** to confirm.

Displaying the SAP System Users

An SAP system's users list is available for SAP Admin module systems, dependent SAP systems, and independent SAP systems. It shows the user data, roles, and consumption data of the system's users.

The **Users** grid is populated after the SAP Inventory Agent has been executed. It is located on the **SAP System:** *name* page and contains the following details (use the **Advanced > Choose Fields** option to display the fields you require).

Column Name	Description
User Name	The user ID of the user on the remote system.
First Name	The first name of the user on the remote system.
Last Name	The last name of the user on the remote system.
License Type	The license type that is currently assigned to the user.
Number of Roles	The number of roles that are currently allocated to the user. If the number is blue, you can click on it to see which roles are allocated to the user.
Valid From	The start date of the user's validity period.
Valid To	The end date of the user's validity period.
User Type	The user type of the user.
User Group	The group to which the user belongs.
Last Logon Date	The date when the user last logged on to the SAP system.
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Created On	The user's creation date.
Account No.	The accounting number of the user.
Assign. To Special Version	The user's special version, if the user has been assigned one.
Chargeable Client	The two-character ID of the chargeable user's system client.
Chargeable System ID	The three-character ID of the chargeable user's system.
Chargeable User Name	The user name of another user who is representing this user.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Cost Center	The user's cost center.

Column Name	Description
Country Surcharge	The user's country surcharge, if the user has been assigned one.
Division	The user's division.
Email	The email address of the user on the system on which the user was identified.
Locked Status	Indicates whether the user is currently locked. Possible values: • 0: Not locked • 32: Locked by CUA administrator • 64: Locked by administrator • 128: Locked after failed logon
Max. Multiple Logon	The maximum number of simultaneous multiple logons that the user had in the specified period.
No. Multiple Logon	Displays how often the user was logged on multiple times in the specified period.
Representative From Date	The start date of the period during which this user is representing another user.
Representative To Date	The end date of the period during which this user is representing another user.
Tel. Extension	The user's phone extension.
Tel. Number	The user's phone number.

Adding an SAP System Group

You can group systems on multiple levels within a system landscape. This enables you to easily model your enterprise structure. In addition, SAP administrators can target entire system groups for administration purposes, to implement security features, or to assign rules.

A system group can contain both CUA systems and non-CUA systems.

To add an SAP system group:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the landscape to which you want to add a system group. Alternatively, select the desired landscape and click **View**.
3. On the **System Landscape:** *name* page, select the **Show outline view of landscape** check box to switch to the outline view (if not already selected).
4. In the system tree, select the element to which you want to add a group and click **Add system group** .
5. The **Create SAP System Group** dialog opens. Enter a name and a description (optional) for the new system

group.

6. Click **Create** to add the new SAP system group to the landscape.

Editing an SAP System Group

To edit an SAP system group:

1. Perform steps 1 to 3 as described in the procedure under Adding an SAP System Group.
2. In the system tree, select the system group that you want to edit, and click **Edit system group** .
3. In the **Edit SAP System Group** dialog, make your changes (edit the name or the description) and click **Save**.

Deleting an SAP System Group

To delete an SAP system group:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and then selecting **System Landscapes**.
2. Double-click the system landscape that contains the system group that you want to delete. The **System Landscape:** *name* page is displayed.
3. Select the **Show outline view of landscape** check box to switch into outline view. In the system tree, select the system group that you want to delete and click **Delete system group** below the system tree.
4. In the **Delete SAP System Group** dialog, click **Delete** to confirm.

Collection of User Details and Consumption Data from SAP Systems

FlexNet Manager Suite automatically imports inventory data from the SAP Admin module and its connected SAP systems and generates a new optimal license position on a regular basis.

The data collection includes the following steps:

1. **Collecting data from the dependent SAP systems into the staging database on the SAP Admin module.** Each SAP Admin module collects data from its dependent SAP systems using RFC-enabled functions. The collected data is stored in a staging database on the SAP Admin module system. For more information, see Data Collection Using the Staging Database Monitor.For more information, see *Data Collection Using the Staging Database Monitor* in the *FlexNet Manager for SAP Applications User Guide* PDF.
2. **Collecting data from the staging database on the SAP Admin module into FlexNet Manager Suite using the SAP Inventory Agent.** The SAP Inventory Agent connects to the staging database and loads the data into the FlexNet Manager Suite database. For more information, see *SAP Inventory Agent* in the *FlexNet Manager for SAP Applications User Guide* PDF. For more information, see SAP Inventory Agent.

If your landscape contains independent SAP systems, the SAP Inventory Agent connects to these systems and collects the available data. It then loads the data into the FlexNet Manager Suite database. Package measurement data can be collected only from independent systems that have the Satellite transport installed. Activity check data cannot be collected from independent systems.

Access Rights to SAP Functionality

The main security model for the FlexNet Manager for SAP Applications web interface in FlexNet Manager Suite is based on the existing access-rights infrastructure that is used in FlexNet Manager Suite.

FlexNet Manager Suite Access Rights

You can manage access rights separately for the following security sections in SAP mode in FlexNet Manager Suite:

- **License Position**
- **Optimization**
- **Analysis Tools**
- **Configuration**

The first step to managing access rights in FlexNet Manager Suite is to create one or more accounts. Every user who wants to use FlexNet Manager Suite within your enterprise needs an account.

You then assign the account specific roles and define the specific access rights for each role. This is done on the **Accounts** page in FlexNet Manager Suite.

To configure access rights for SAP mode:

1. In FlexNet Manager Suite, navigate to the system menu ▼ in the top right corner and click **Accounts**.
2. On the **Accounts** page, on the **All Accounts** tab, click the name of the account that you want to configure.
3. From the **Role** drop-down list, select an appropriate role from the that enables access to the SAP mode in the FlexNet Manager Suite web interface.
4. Expand the **SAP** section.

   The main sections within the SAP mode for which you can configure access rights display.
5. Select the corresponding check boxes to allow or deny access to specific features.

Account-Specific Access Rights in SAP Mode

In addition to the FlexNet Manager Suite access rights, you can set specific access rights for specific accounts in SAP mode. These SAP mode access rights override the access rights that have been assigned to the role(s) that the accounts belong to in FlexNet Manager Suite.

You can manage access rights separately for the following sections in SAP mode:

- **System Landscapes**—see Managing Access Rights for System Landscapes
- **Systems**—see Managing Access Rights for Systems
- **License Assignment Rule Sets**—see Managing Access Rights for License Assignment Rule Sets.

Each details page for these sections contains a link called **Configure access**. Click this link to open a relevant security dialog.

Important: *Be careful when setting access rights, because it is possible to set permissions in such a way that you effectively lock yourself out of FlexNet Manager Suite. In most cases, this will simply require the resetting of access rights by an operator with appropriate access rights.*

Managing Access Rights for System Landscapes

When you configure access rights for system landscapes, you can do so on a role-based model (based on the account's roles in FlexNet Manager Suite), or you can manage access for specific accounts and specific security sections of a system landscape.

To manage access rights for system landscapes:

1. In SAP mode, open the System Landscape Editor by pointing to **Configuration** and clicking **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that you want to configure. Alternatively, select the system landscape and click **View**.
3. The **System Landscape:** *name* page is displayed. In the **Tasks** section, click **Configure access**.
4. In the **Configure Access** dialog, select one of the following options:
   - **Use role-based access rights**—Select this option if the access rights that are assigned to the account's role from FlexNet Manager Suite should be used for this landscape. This is the default option for system landscapes.
     Click **Save**.
   - **Restricted to specific accounts**—Select this option to manage access rights for specific accounts and for specific security sections of the landscape.
     The **Configure Access** dialog displays a list of accounts. By default, each security section is set to **No Access** (the account is restricted from the specific section).
     a. In the grid, select the account whose access rights you want to configure and click **Edit**.
     b. In the **Define Access Levels** dialog, configure the access rights for each security section by selecting the appropriate value from each list. See Table 1 for available access levels for each section.
     c. Click **OK**.

Access Levels for System Landscapes

Use this table to determine the access level of specific accounts for each security section of the system landscape in which you are currently working.

Table 3: Access levels for system landscapes

Section	Access Level	Definition
License Position	No Access	Account has no access to the License Position section.
	Read-Only	Account rights only allow to view license position data.
	Normal	Account rights allow to view and recalculate the license position, and make recommendations available to the SAP Admin module.
	Administrator	Account rights allow to view and recalculate the license position, make recommendations available to the SAP Admin module, and delete archived recommendation sets.
Optimization	No Access	Account has no access to the Optimization section.
	Read-Only	Account rights only allow to view rules and transaction profiles.
	Normal	Account rights allow to view, create, and modify rules and transaction profiles, and run simulations.
	Administrator	Account rights allow to view, create, modify, and delete rules and transaction profiles, and run simulations.
Analysis Tools	No Access	Account has no access to the Analysis Tools section.
	Full Access	Account rights only allow to view analysis results.
Configuration	No Access	Account has no access to the Configuration section.
	Read-Only	Account rights only allow to view system landscapes and systems.
	Normal	Account rights allow to view, create, and modify system landscapes and systems.
	Administrator	Account rights allow to view, create, modify, and delete system landscapes and systems.

Managing Access Rights for Systems

When you configure access rights for systems, you have the following options:

- Access rights can be inherited from those set for the system landscape to which the system belongs.
- You can manage access for specific accounts and specific security sections of a system.

To manage access rights for systems:

1. In SAP mode, open the System Landscape Editor by pointing to **Configuration** and clicking **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that contains the system that you

want to configure. Alternatively, select the system landscape and click **View**.

3. The **System Landscape:** *name* page is displayed. Double-click the system that you want to configure. Alternatively, select the system and click **View**.
4. The **SAP System:** *name* page is displayed. In the **Tasks** section, click **Configure access**.
5. In the **Configure Access** dialog, select one of the following options:
   - **Inherit access configuration from system landscape**—Select this option if the access rights should be inherited from those set on the system landscape to which the system belongs. This is the default option for system landscapes.
     Click **Save**.
   - **Restricted to specific accounts**—Select this option to manage access rights for specific accounts and for specific security sections of the landscape.
     The **Configure Access** dialog displays a list of accounts that have had an access level assigned to at least one of the four security sections in the system landscape. By default, each security section is set to `No Access` (the account is restricted from the specific section).
     a. In the grid, select the account whose access rights you want to configure and click **Edit**.
     b. In the **Define Access Levels** dialog, configure the access rights for each security section by selecting the appropriate value from each list. See the table Table 1 for available access levels for each section.
     c. Click **OK**.

Access Levels for Systems

Use this table to determine the access level of specific accounts for each security section of an SAP system.

Table 4: Access levels for systems

Section	Access Level	Definition
License Position	`No Access`	Account has no access to the data for this system in the License Position section.
	`Full Access`	Account has full access to the data for this system in the License Position section.
Optimization	`No Access`	Account has no access to the data for this system in rule previews, simulations, and transaction profiles.
	`Full Access`	Account has full access to the data for this system in rule previews, simulations, and transaction profiles.
Analysis Tools	`No Access`	Account has no access to the analysis results for this system in the Analysis Tools section.
	`Full Access`	Account has full access to the analysis results for this system in the Analysis Tools section.
Configuration	`No Access`	Account has no access to the system in the Configuration section.

Section	Access Level	Definition
	`Read-Only`	Account rights only allow to view the system details in the Configuration section.
	`Normal`	Account rights allow to view and modify the system details in the Configuration section.
	`Administrator`	Account rights allow to view, modify, and delete the system in the Configuration section.

Managing Access Rights for License Assignment Rule Sets

Managing access rights for license assignment rule sets is similar to managing rights for systems. When you configure access rights for license assignment rule sets, you have the following options:

- Access rights can be inherited from those set for the system or system landscape to which the license assignment rule set has been assigned to.
- You can manage access for specific accounts and specific security sections of a system.

To manage access rights for license assignment rule sets:

1. In SAP mode, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *`system landscape name`* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *`system landscape name`* page, double-click the rule set for which you want to configure access rights.
4. The **License Assignment Rule Set:** *`rule set name`* page opens. In the **Tasks** section, click **Configure access**.
5. In the **Configure Access** dialog, select one of the following options:

   - **Inherit access configuration from system landscape**—Select this option if the access rights should be inherited from those set on the system or system landscape to which the license assignment rule set has been assigned.
     Click **Save**.
   - **Restricted to specific accounts**—Select this option to manage access rights for specific accounts.
     The **Configure Access** dialog displays a list of accounts that have had an access level assigned to at least one of the four security sections in the system landscape. By default, each section is set to `No Access` (the account is restricted from the specific section).

     a. In the grid, select the account whose access rights you want to configure and click **Edit**.

     b. In the **Define Access Levels** dialog, configure the access rights for the **Optimization** section by selecting the appropriate value from the list. See the table above for available access levels.

     c. Click **OK**.

Access Levels for License Assignment Rule Sets

Use this table to determine the access level of specific accounts for each security section for the license rule set.

Table 5: Access levels for license assignment rule sets

Section	Access Level	Definition
License Position	`Not Applicable`	No applicable access rights to set.
Optimization	`No Access`	Account has no access to the license assignment rule set.
	`Read-Only`	Account rights only allow to view the license assignment rule set and details of the rules within the license assignment rule set.
	`Normal`	Accounts rights allow to view and modify the license assignment rule set, run simulations, and view, create, and modify the rules of the license assignment rule set.
	`Administrator`	Accounts rights allow to view, modify, and delete the license assignment rule set, run simulations, and view, create, modify, and delete the rules of the license assignment rule set.
Analysis Tools	`Not Applicable`	No applicable access rights to set.
Configuration	`Not Applicable`	No applicable access rights to set.

Licensing Information Setup

Use the following features to define the licensing information as specified in your SAP license contract in FlexNet Manager for SAP Applications:

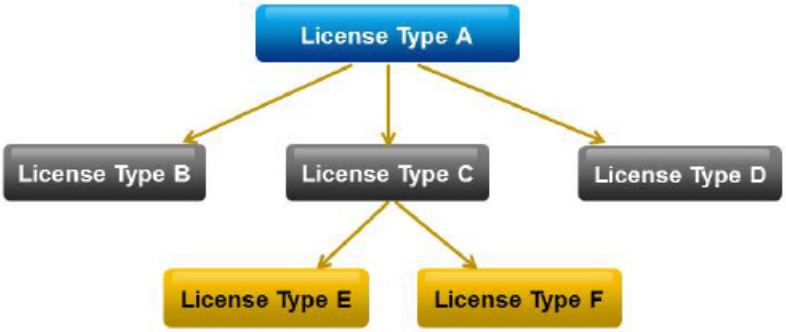
- Define the priority of SAP license types by setting up the license-type hierarchy.
- Specify whether spare superior license-types can be used to cover over-consumed license types that are a sub-type of the superior license type.
- If your SAP contract stipulates a minimum ratio among specific license types, specify that license ratio so that it can be taken into account during license-type optimization.

License-Type Hierarchy

The license-type hierarchy defines the strict hierarchical order of license types; that is, it defines the child license types that are contained in specific parent license types.

The SAP Inventory Agent imports the license-type hierarchy—along with other data—from the SAP Admin module for each dependent SAP system. When you set up FlexNet Manager for SAP Applications for the first time, you need to specify from which system the license-type hierarchy should be loaded. Usually you load the hierarchy from the SAP system on which the LAW is run. You should ensure that the license data is maintained accurately in the LAW.

Figure 3: Example of a well-formed license-type hierarchy.



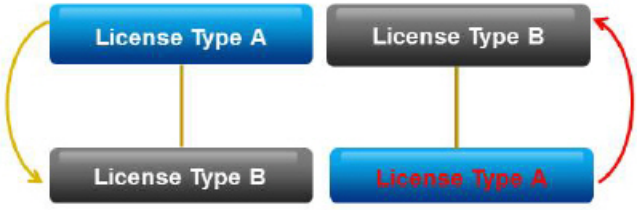
When FlexNet Manager for SAP Applications calculates the license position, it consolidates the user accounts across systems into logical users. Based on the license-type hierarchy, it then assigns the highest required license type to each user. It is therefore essential that the license-type hierarchy is set up properly.

The most expensive license types are usually identified using the SAP table LAW_CONT, which lists the additional license types that are contained in a license type. The validity of this table is dependent on the patch level of the LAW system. After new license types have been specified by SAP, it can take some time before an appropriate patch is provided.

You can import, view, and modify the license-type hierarchy using the **License Types** feature under **Optimization**.

When you define a license type as a sub-license type of a higher license type, you must ensure that this relationship is well formed. This means that there must be no cyclical references between license types in the hierarchy. For example, license type A cannot be a sub-license type of license type B, if license type B is already a sub-license of license type A. If FlexNet Manager for SAP Applications detects a cycle in the license-type hierarchy, it displays an alert message. You should remove the cycle (for example, by removing the incorrect sub-license type), otherwise the consolidated users might be assigned insufficient license types, and the license position might not be calculated correctly.

Figure 4: Example for a cycle in the license-type hierarchy. To remove the cycle, the sub-license type A (red) needs to be removed from license type B.



The license types that are defined under **License Types** will be available for selection when you configure license rules.

Loading the License-Type Hierarchy

Usually you load the hierarchy from the SAP system on which the LAW is run.

To load the license-type hierarchy:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Types:** *system Landscape name* page, in the **Tasks** section, click **Load Hierarchy**.
4. In the **Load SAP License-Type Hierarchy** dialog, click the name of the SAP system from which the license-type hierarchy should be loaded.
5. Click **Create**.

The **License Types:** *system Landscape name* page displays the license-type hierarchy in the **License Types** grid.

After you loaded the license-type hierarchy from an SAP system, you can view its details and edit it, if necessary.

Viewing the License-Type Hierarchy

After you have loaded the license-type hierarchy from an SAP system, you can view its details and edit it, if necessary.

To display the license-type hierarchy:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

The **License Types:** *system Landscape name* page shows the license-type hierarchy.

You can double-click a license type in the grid to see its license sub-types.

License-Type Hierarchy Details

On the **License Types:** *system Landscape name* page, the **Details** section informs you from which system the hierarchy was loaded, when it was loaded, and which operator loaded it.

The **License Types** section contains an overview of all defined license types.

Option	Description
Code	The license-type identifier.
Short Name	The short name of the license type.
Long Name	The long name of the license type.
Active	**Yes** indicates that you are entitled to use the license type; **No** indicates that you are not entitled to use it. This value is automatically set when you import a license-type hierarchy from the LAW. It does not affect which license types can be recommended during license optimization.
Number Purchased	The number of licenses that were purchased.
Unit Price	The unit price for a license type.

Option	Description
Over-Consumption	This column indicates how FlexNet Manager for SAP Applications calculates the license position for license types that are over-consumed. Possible values: • **Recommend promotion** — Over-consumed licenses can be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type. • **Show deficits/risks** — Spare superior licenses are not used to cover over-utilized licenses. Instead, the license is displayed as at risk, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types.
Created By	The name of the user who created the license type.
Created At	The date and time when the license type was created.
Last Updated By	The name of the user who last updated the license type.
Last Updated At	The date and time when the license type was last updated.

Drilling into the License-Type Hierarchy

On the **License Types:** *system Landscape name* page, you can double-click a license type in the grid to see its license sub-types.

To display sub-types of a license type:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top right corner of the page.
3. On the **License Types:** *system Landscape name* page, select the license type in the grid whose sub-types you want to display and click **View**. Alternatively, double-click the license type.

See License-Type Details for detailed listings of controls and descriptions for license types.

License-Type Details

The **License Type:** *name* page displays detailed information for a particular license type.

Table 6: Details section

Control	Description
Code	The license type identifier.
Short name	The short name of the license type.
Long name	The long name of the license type.

Control	Description
Include in recommended license types for S/4HANA	This option should be selected if you want the license type to appear in the list of options meant for S/4HANA license types on the **License Assignment Rules** page.
Active	A license type is marked as active if you are entitled to use it. The status of this check box is automatically set when you import a license-type hierarchy from the LAW. This check box does not affect which license types can be recommended during license optimization.
Number purchased	The number of licenses that were purchased.
Unit price	The unit price for a license type.
Handling over-consumption of license types	This option indicates how FlexNet Manager for SAP Applications calculates the license position for license types that are over-consumed. • **Recommend promoting users to spare superior licenses** — Over-consumed licenses can be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type. This is the default setting. • **Show deficits against this license (license is at risk)** — Spare superior licenses are not used to cover *over-utilized* licenses. Instead, the over-consumed license is *over-utilized*, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types.
Created by	The name of the user who created the license type.
Created at	The date and time when the license type was created.
Last updated by	The name of the user who last updated the license type.
Last updated at	The date and time when the license type was last updated.

The **License Sub-Types** section lists the sub-types of the license type that is specified in the **Details** section in the **Code** field, including the following information:

- **Identifier** — Shows the identifier of the sub-type.
- **Short Name** — Shows the short name of the sub-type.

Recommended Settings for Recommended License Types

The **Recommended license type for S/4HANA** field is available in all license assignment rule types (except the "Developer" rule).

You can set the **Recommended license type** and **Recommended license type for S/4HANA** to recommend different license types to users for the same license assignment rule.

Note: *The* ***Recommended license type*** *drop-down list includes all license types from the loaded license type*

*hierarchy, whereas the **Recommended license type for S/4HANA** drop-down includes license types that are marked as recommended for S/4HANA . See License-Type Details for more information on license types.*

Depending on the system composition in your landscape, here are some recommendations for setting these options:

Landscape with only classic Business Suite systems

If you have only classic systems in the system landscape, and are therefore using only classic license types:

1. Set the **Recommended license type** field to an applicable classic license type
2. Leave the **Recommended license type for S/4HANA** field to **Same as above** (the default value).

Landscape with only S/4HANA systems

If you have only S/4HANA systems in the system landscape, and are therefore using only S/4HANA license types:

1. Set the **Recommended license type** field to an applicable classic license type
2. Leave the **Recommended license type for S/4HANA** field to **Same as above** (the default value).

Landscape with both classic Business Suite and S/4HANA systems

If you have a mix of S/4HANA and classic systems in the system landscape, and are therefore using both classic and S/4HANA license types in the same landscape

1. Set the **Recommended license type** field to an applicable classic license type
2. Set the **Recommended license type for S/4HANA** field to an applicable S/4HANA license type (not **Same as above**).

***Note:** You cannot select the same license type for both **Recommended license type** and **Recommended license type for S/4HANA**.*

Segregating license assignment rules between classic Business Suite and S/4HANA systems

You may choose to segregate your license assignment rules between classic Business Suite and S/4HANA systems. To segregate your license assignment rules between classic Business Suite and S/4HANA:

1. Identify the license assignment rule you want to segregate.
2. Create a new license assignment rule which is the same type as the one you want to segregate.
3. Assign the new rule to S/4HANA systems using the **Assign to systems** action link on the rule details page.
4. Assign the existing rule to Classic systems using the **Assign to systems** action link on the rule details page.

   ***Note:** An alternative to steps 2-4 above would be to create separate rule sets and assign one to Classic systems and the other to S/4HANA systems, using **Change default system assignment** action link on the rule set details page. See Assigning Rules and Rule Sets to Systems.*

5. Review the order of rules or rule sets to ensure rules which apply to S/4HANA or Classic system are ordered before rules or rule sets that apply to all systems. This is required to prevent users from being matched against

rules that apply to all systems. See Changing the Order of Rule Sets.

Adding License Types to the Hierarchy

You can edit the license-type hierarchy you loaded. For example, you could add new license types that include sub-types.

To add license types to the hierarchy:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Types:** *system Landscape name* page, click **Add**.
4. In the **Add SAP License Type** dialog:
   a. Enter the code and short name of the license type (required) and a long name (optional).
   b. Select or deselect the **Active** check box to indicate whether you are entitled to use the license type.
   c. Click **Create**.

   The **License Type:** *name* page opens.
5. If you wish to edit the information in the **Details** section:
   a. Click **Edit**.
   b. Modify the details
   c. Click **Save**.
6. To add sub-types to the license type you just created:
   a. Click **Add** in the **License Sub-Types** section.
   b. In the **Add SAP License Type** dialog, select the check box for one or more license types that you want to add as sub-types to the current license type.
   c. Click **Create** to add the sub-types to the license type you created.

Deleting License Types in the Hierarchy

You can delete unwanted license types from the hierarchy.

To delete a license type in the hierarchy:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Types:** *system Landscape name* page, select the license type that you want to delete, and click **Delete**.
4. In the dialog box, click **Delete** to confirm.

Deleting License Types in S/4HANA systems

You can delete unwanted license types in S/4HANA systems.

To delete a license type in an S/4HANA system:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Types:** *system Landscape name* page, select the license type that you want to delete, and click **Delete**.
4. In the dialog box, click **Delete** to confirm.

Editing License Types in the License-Type Hierarchy

You might want to edit the license-type hierarchy you loaded.

For example, you could add unit price information for license types to enable the visual presentation of SAP license utilization in the dashboard.

To edit the license-type hierarchy:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top right corner of the page.
3. On the **License Types:** *system Landscape name* page, select the license type that you want to edit and click **View**. Alternatively, double-click the license type.
4. To edit the information in the **Details** section, click **Edit** to open the page in write-enabled mode. You can edit the following fields:

Control	Description
Code	The license type identifier.
Short name	The short name of the license type.
Long name	The long name of the license type.
Active	A license type is marked as active if you are entitled to use it. The status of this check box is automatically set when you import a license-type hierarchy from the LAW. This check box does not affect which license types can be recommended during license optimization.
Number purchased	The number of licenses that were purchased.

Control	Description
Unit price	You can specify and store a unit price for each license type. This information can then be used by the dashboard for the license utilization overview and for the **Details** section on the **License Position** page. ***Note:*** *The available currency values depend on the settings you selected when you installed FlexNet Manager Suite. If required, you can change the available currencies.*
Handling over-consumption of this license type	This option indicates how FlexNet Manager for SAP Applications calculates the license position for license types that are over-consumed. • **Recommend promoting users to spare superior licenses**—Over-consumed licenses can be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type. This is the default setting. • **Show deficits against this license (license is at risk)**—Spare superior licenses are not used to cover *over-utilized* licenses. Instead, the over-consumed license is *over-utilized*, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types.

5. Click **Save**.
6. To add license sub-types:
   a. In the **License Sub Types** section, click **Add**.
   b. In the **Add SAP License Type** dialog, enter the code and short name of the license type (required) and a long name (optional).
   c. Select or deselect the **Active** check box to indicate that you are entitled to use the license type.
   d. Click **Create**.
7. To delete license sub-types:
   a. In the **License Sub Types** section, select the license sub-type that you want to remove and click **Delete**.
   b. In the dialog box, click **Delete** to confirm.

Handling Over-Consumption of License Types

You can specify how FlexNet Manager for SAP Applications should calculate the license position for license types that are over-consumed.

To use this feature, the license-type hierarchy must have been defined.

You can either let over-consumed licenses be *over-utilized*, or you can use spare licenses of a superior license type of

which the over-consumed license is a sub-type, to cover these licenses. The latter option can help you avoid the need to purchase additional licenses. Licenses that are *over-utilized* are displayed on the **License Position** page in the **License Deficit** column.

When a license type that can be covered by spare superior licenses exceeds its purchase count, FlexNet Manager for SAP Applications will use spare licenses of the license type that is on the next level in the license hierarchy to cover it.

You can specify for an entire landscape that spare superior licenses be consumed to prevent lower-priority license types from being *over-utilized*. You can also fine-tune this setting for individual license types within a landscape. For more information, see Landscape-Wide Handling of Over-Consumption of License Types and Handling of Over-Consumption of Specific License Types, respectively.

Examples for Over-Consumption of License Types

The following examples illustrate the effect that the consumption of spare superior licenses can have on your license position.

Example 1: Spare Licenses Available

This example assumes the following:

- The mySAP Limited Professional (53) license type was defined in the license-type hierarchy as a sub-license type of mySAP Professional (52).
- Spare superior licenses of type mySAP Professional (52) can be consumed if lower-priority licenses of type mySAP Limited Professional (53) are *over-utilized*.
- No license ratio is active. (For more information on license ratios, see Managing SAP License Ratios.)

License Type	Purchased	Used (Current)	Used (Optimal)	Used (Contractual)	License Deficit
mySAP Limited Prof. (53)	5	3	7	5	0
mySAP Professional (52)	15	9	5	7	0

In the previous example, the **Used (Optimal)** column shows the optimal usage (the number of licenses required after optimization rules have been applied): seven mySAP Limited Professional (53) licenses and five mySAP Professional (52) licenses are required. This optimal usage does not factor in spare licenses of a higher type that could cover licenses that are lower in the license-type hierarchy.

However, according to the **Purchased** column, only five mySAP Limited Professional (53) licenses have been purchased. As a result, another two licenses of type 53 are required. Because only five licenses of type mySAP Professional (52) are required, and 15 have been purchased, 10 spare licenses are available. Therefore, two licenses of type mySAP Professional (52) can be used to cover the two additional licenses of type mySAP Limited Professional (53).

The **Used (Contractual)** column shows the best-case licensing scenario that can be achieved within your contractual obligations, with five licenses of type mySAP Limited Professional (53) and seven licenses of type mySAP Professional (52) being used.

The **License Deficit** column shows that no additional licenses need to be purchased.

Example 2: No Spare Licenses Available

This example assumes the following:

- The mySAP Limited Professional (53) license type was defined in the license-type hierarchy as a sub-license type of mySAP Professional (52).
- Spare superior licenses of type mySAP Professional (52) can be consumed if lower-priority licenses of type mySAP Limited Professional (53) are *over-utilized*.
- No license ratio is active. (For more information on license ratios, see Managing SAP License Ratios.)

License Type	Purchased	Used (Current)	Used (Optimal)	Used (Contractual)	License Deficit
mySAP Limited Prof. (53)	5	3	8	6	1
mySAP Professional (52)	15	13	13	15	0

Here, the **Used (Optimal)** column indicates that in the best-case scenario, eight licenses of type mySAP Limited Professional (53) and 13 licenses of type mySAP Professional (52) are required. This optimal usage does not factor in spare licenses of a higher type that could cover licenses that are lower in the license-type hierarchy.

However, only five mySAP Limited Professional (53) licenses have been purchased, which means that another three licenses are required.

But because only 13 mySAP Professional (52) licenses are required, and 15 have been purchased, two spare licenses are available. Licenses of type mySAP Limited Professional (53) are sub-licenses of type mySAP Professional (52); therefore, the two spare licenses of type mySAP Professional (52) can be used to cover two of the three licenses of type mySAP Limited Professional (53) that are required.

This is summed up in the **Used (Contractual)** column, which shows the optimal license position with spare licenses factored in. In this example, the organization could use six licenses of type mySAP Limited Professional (53), and 15 licenses of type mySAP Professional (52). This column should be viewed in combination with the **License Deficit** column.

As shown in the **License Deficit** column, only one additional license of type mySAP Limited Professional (53) is required to stay compliant.

License Type	Purchased		License Deficit		Used (Contractual)
mySAP Limited Prof. (53)	5	+	1	=	6
mySAP Professional (52)	15	+	0	=	15

Landscape-Wide Handling of Over-Consumption of License Types

You use the **Handling over-consumption of license types** option on the **System Landscape:** *name* page to specify how FlexNet Manager for SAP Applications should handle the over-consumption of license types across the landscape.

To specify landscape-wide over-consumption settings:

1. In FlexNet Manager Suite, click **SAP**, point to **Configuration** and click **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape for which you set over-consumption options. Alternatively, select the system landscape and click **View**.
3. In the **Details** pane, click **Edit** to switch into edit mode.
4. In the **Compliance** section, for the **Handling over-consumption of license types** option, indicate how you want FlexNet Manager for SAP Applications to handle over-consumed license types:
   - Select **Recommend promoting users to spare superior licenses** if over-consumed licenses should be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type.
   - Select **Show deficits against assigned license (license appears at risk)** if spare superior licenses should not be used to cover *over-utilized* licenses.
5. Click **Save**.

On the **System Landscape:** *name* page, if the **Recommend promoting users to spare superior licenses** option is selected for the **Handling over-consumption of license types** setting (landscape-wide setting), you can prevent specific license types from consuming spare superior license types by specifying the appropriate setting on the corresponding **License Type:** *name* page. For more information, see Handling of Over-Consumption of Specific License Types.

Handling of Over-Consumption of Specific License Types

If the **Recommend promoting users to spare superior licenses** option is selected for the **Handling over-consumption of license types** setting on the **System Landscape:** *name* page, you can select the **Show deficits against this license (license appears at risk)** option on the **License Type:** *name* page to prevent specific license types from consuming spare superior license types.

If the **Show deficits against assigned license (license appears at risk)** option on the **System Landscape:** *name* page is selected, this overrides the option that is selected for the **Handling over-consumption of this license type** setting on the **License Type:** *name* page. Spare superior licenses will not be used to cover *over-utilized* licenses on a landscape-wide level.

To specify over-consumption settings for specific license types:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Types**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Types:** *system landscape name* page, select the license type for which you want set over-consumption options, and click **View**. Alternatively, double-click the license type.
4. On the **License Type:** *name* page, below the **Handling over-consumption of this license type** option, select one of the following options:
   - Select **Recommend promoting users to spare superior licenses** if over-consumed licenses should be covered by spare licenses of a superior license type of which the over-consumed license is a sub-type.

- Select **Show deficits against this license (license is at risk)** if spare superior licenses should not be used to cover *over-utilized* licenses.

On the **License Types** page, the **Over-Consumption** column in the **License Types** grid indicates whether a spare superior license type can be consumed by a lower-priority license type.

For more information on license types in the hierarchy, see License-Type Hierarchy.

Managing SAP License Ratios

If your SAP license contract contains a license ratio, you can specify this ratio to ensure that it is taken into account during license-type optimization.

Your organization's SAP license contract might contain a clause that enforces a minimum ratio between specific license types. For example, the license contract might stipulate that the minimum ratio of mySAP Limited Professional licenses (license type 53) to mySAP Professional licenses (license type 52) must be 25% to 75%.

With FlexNet Manager for SAP Applications, you can specify a license ratio on the **License Ratio** page (in the **Optimization** section) that will be taken into account when the license position is calculated.

The specified license ratio (if activated) will be reflected in the results on the **License Position** page and in the **License Ratio** diagram on the dashboard. For more information, see Current License Position and License Ratios, respectively.

License Ratio Examples

The effects of license ratios are described using example scenarios.

In the following examples, the columns contain the following information:

- **License Type**—Shows the license types on which the example is based.
- **Purchased**—Shows the number of licenses of each type that have been purchased.
- **Used (Current)**—Shows the number of licenses of each type that are currently consumed.
- **Used (Optimal)**—Shows the optimal usage for each license type—the number of licenses that would be consumed if all recommendations made by FlexNet Manager for SAP Applications (based on the active optimization rules and user consolidation) were accepted.
- **Used (Contractual)**—Shows the best possible license position within your contractual obligations. That means that FlexNet Manager for SAP Applications analyzes the following factors:
  - All active optimization rules
  - The active license ratio
  - Settings for over-consumption of licenses
    For information about consuming spare superior licenses, see Handling Over-Consumption of License Types.

Note: *The value in the* ***Used (Contractual)*** *column takes into consideration available licenses and licenses that are yet to be purchased to reach the displayed license position. It should always be viewed in combination with the* ***License Deficit*** *column.*

- **License Deficit**—This column should always be viewed in combination with the **Used (Contractual)** column, because it shows the number of additional licenses that might be required to achieve the best possible license position within your contractual obligations.

Example 1: License Ratio Inactive

This example assumes the following:

- No license ratio is active.
- Spare superior licenses of type mySAP Professional (52) can be consumed, to avoid lower-priority licenses of type mySAP Limited Professional (53) being *over-utilized*.

License Type	Purchased	Used (Current)	Used (Optimal)	Used (Contractual)	License Deficit
mySAP Limited Prof. (53)	5	3	7	5	0
mySAP Professional (52)	15	9	5	7	0

In this example, the optimal license position (**Used (Optimal)** column) would include seven licenses of type mySAP Limited Professional (53) and five licenses of type mySAP Professional (52). However, only five licenses of type mySAP Professional (52) have been purchased (**Purchased** column).

As a result, another two licenses of type mySAP Limited Professional (53) are required to reach the optimal value of seven licenses of type mySAP Limited Professional (53). Because only five licenses of type mySAP Professional (52) are needed, and 15 have been purchased, there are 10 spare licenses of type mySAP Professional (52) available.

Therefore, two licenses of type mySAP Professional (52) can be used to cover the two additional licenses of type mySAP Limited Professional (53) (because license type mySAP Limited Professional (53) is a sub-type of license type mySAP Professional (52)). As seen in the **Used (Contractual)** column, this brings the number of the contractually used mySAP Professional (53) licenses to seven (five licenses to cover mySAP Professional (52) licenses, plus two licenses to cover mySAP Limited Professional (53) licenses).

Example 2: License Ratio Active, Spare Licenses Available

This example assumes the following:

- A minimum license ratio of 25% of mySAP Limited Professional (53) to 75% of mySAP Professional (52) has been set and activated.
- Spare superior licenses of type mySAP Professional (52) can be consumed, to avoid lower-priority licenses of type mySAP Limited Professional (53) being *over-utilized*.

License Type	Purchased	Used (Current)	Used (Optimal)	Used (Contractual)	License Deficit
mySAP Limited Prof. (53)	5	3	7	3	0
mySAP Professional (52)	15	9	5	9	0

In this example, the optimal license position (**Used (Optimal)** column) would include seven licenses of type mySAP Limited Professional (53) and five licenses of type mySAP Professional (52). However, only five licenses of type mySAP

Limited Professional (53) have been purchased (**Purchased** column).

As a result, another two licenses of type mySAP Limited Professional (53) are required to reach the optimal value of seven licenses of type mySAP Limited Professional (53). Because only five licenses of type mySAP Professional (52) are needed, and 15 have been purchased, there are 10 spare licenses of type mySAP Professional (52) available.

If no license ratio had been set, only two spare licenses of type mySAP Professional (52) could be used to cover the two additional licenses of type mySAP Limited Professional (53) (because license type mySAP Limited Professional (53) is a sub-type of license type mySAP Professional (52)).

However, due to the license ratio of 25% to 75% (1:3), four of the spare licenses of type mySAP Professional (52) need to be used along with only three licenses of type mySAP Limited Professional (53), to ensure that the license ratio is met (see the **Used (Contractual)** column).

Example 3: License Ratio Active, No Spare Licenses Available

This example assumes the following:

- A license ratio of 25% of mySAP Limited Professional (53) to 75% of mySAP Professional (52) has been set and activated.
- Spare superior licenses of type mySAP Professional (52) can be consumed, to avoid lower-priority licenses of type mySAP Limited Professional (53) being *over-utilized*.

License Type	Purchased	Used (Current)	Used (Optimal)	Used (Contractual)	License Deficit
mySAP Limited Prof. (53)	5	3	11	6	1
mySAP Professional (52)	15	13	13	18	3

In this example, the optimal license position (**Used (Optimal)** column) would include eleven licenses of type mySAP Limited Professional (53) and thirteen licenses of type mySAP Professional (52). However, only five licenses of type mySAP Limited Professional (53) have been purchased (**Purchased** column).

As a result, another six licenses of type mySAP Limited Professional (53) are required to reach the optimal value of 11 licenses of type mySAP Limited Professional (53).

Because only 13 licenses of type mySAP Professional (52) are needed, and 15 have been purchased, there are two spare licenses of type mySAP Professional (52) available. These two licenses could be used to cover two of the six required additional licenses of type mySAP Limited Professional (53) (because license type mySAP Limited Professional (53) is a sub-type of license type mySAP Professional (52)).

This means that only four additional licenses of type mySAP Limited Professional (53) would have to be purchased. However, if four licenses of type mySAP Limited Professional (53) were to be purchased, then 12 licenses of type mySAP Professional (52) would also need to be purchased to maintain the required license ratio. Using spare superior licenses would therefore not be the most cost-effective solution.

Instead, it would be preferable to purchase one license of type mySAP Limited Professional (53) and three licenses of type mySAP Professional (52), as illustrated in the following table.

License Type	Purchased		License Deficit		Used (Contractual)
mySAP Limited Prof. (53)	5	+	1	=	6
mySAP Professional (52)	15	+	3	=	18

This fulfills the requirement of four extra licenses while maintaining the contractual license ratio.

Specifying the License Ratio

You can change the license types and ratio values to model the ratio that is defined in your organization's SAP license contract.

By default, the license ratio in FlexNet Manager for SAP Applications is set to mySAP Limited Professional (CAT III) (53) and mySAP Professional (CAT II) (52) licenses. The default ratio value is 50% to 50%.

When you specify the license ratio, you also need to enter the number of licenses that have been purchased, to enable FlexNet Manager Suite to calculate the license position and provide accurate information on a potential license deficit.

Only active license ratios will be taken into account when the license position is calculated. By default, the license ratio is inactive.

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Ratio**.
2. On the **License Ratio** page, click **Edit** to switch into edit mode.
3. In the **Ratio** section, specify the ratio for the license types according to your SAP license contract by selecting the appropriate numbers and license types.

   Example:

   Ratio of `25% mySAP Limited Prof. (Cat. III) (53)`

   to a minimum of `75% mySAP Professional (Cat. II) (52)`

   When you change one of the percentage values, the other value changes accordingly to equal 100%.
4. Select the **Active** check box to activate the license ratio.
5. In the **Purchased** section, enter the number of licenses (of the license types that are affected by the license ratio) that your organization has purchased.
6. Click **Save**.

The purchase counts that you specify on the **License Ratio** page will automatically be entered on the **License Types** page, and vice versa, to ensure that the values are consistent.

Important: *FlexNet Manager for SAP Applications allows you to specify a number of purchased licenses that does not match the license ratio. This is to minimize restrictions when you are modelling your organization's licensing position. However, it is your responsibility to ensure that the number of purchased licenses and the license ratio are entered correctly on the* ***License Ratio*** *page, to enable FlexNet Manager for SAP Applications to accurately calculate your licensing situation.*

6

Inventory Beacons

Collection of user data and package measurement results from SAP systems is facilitated using an inventory beacon. Inventory beacons are distribution and collection components that are installed within the company network to enable the dynamic collection of inventory data.

Usually, inventory beacons are located in remote sites where direct connection to the data can be difficult to maintain.

Important: *Because you are using FlexNet Manager Suite in an on-premises installation, SAP data can be collected either using inventory beacons or using the SAP Inventory Agent. For information on collecting data using the SAP Inventory Agent, see Collection of User Details and Consumption Data from SAP Systems.*

This section provides a short introduction to inventory beacons for their usage in an SAP context. For detailed information on installing and configuring inventory beacons, see What Is an Inventory Beacon? and its subtopics. For help using the inventory beacon interface, see Inventory Beacons and subtopics.For detailed information on installing and configuring inventory beacons, see *What Is an Inventory Beacon?* and its subtopics in the FlexNet Manager Suite online help. For help using the inventory beacon interface, see *Inventory Beacons* and subtopics in the FlexNet Manager Suite online help.

Concept

Inventory beacons act like relay stations. They collect inventory data from the staging database on the SAP Admin module systems or from independent SAP systems by running the SAP Inventory Agent and transfer the data to the FlexNet Manager Suite processing server for analysis and optimization.

The workflow usually comprises the following steps:

1. You register the inventory beacon to enable it to communicate with FlexNet Manager Suite. For more information, see Register an Inventory Beacon.
2. You register the inventory beacon to enable it to communicate with FlexNet Manager Suite. For more information, see *Register an Inventory Beacon* in the online help.
3. On the inventory beacon, you create a connection to an SAP Admin module or an independent SAP system for the SAP inventory collection.
4. You schedule the collection of SAP data on the beacon or trigger an immediate import. The SAP Inventory Agent is executed and collects SAP data. For information on scheduling connections, see the section *Scheduling Page* in the

FlexNet Manager Suite online help.

Note: *It is recommended to import SAP inventory (user and consumption data) once every month. In addition, the task for collecting SAP inventory should be scheduled to occur on different dates for different SAP Admin module and independent SAP systems.*

5. You schedule the collection of SAP data on the beacon or trigger an immediate import. The SAP Inventory Agent is executed and collects SAP data. For information on scheduling connections, see Scheduling Tab.

Note: *It is recommended to import SAP inventory (user and consumption data) once every month. In addition, the task for collecting SAP inventory should be scheduled to occur on different dates for different SAP Admin module and independent SAP systems.*

6. The extracted data is stored in a package of data files, in an intermediate format. The packages are located in *%AppData%*`\Flexera Software\Beacon\IntermediateData\` (for example, on Windows Server 2008 R2, *%AppData%* is `ProgramData`). The file naming convention is S[T=*Tenant ID*][S=*SAP System IDSAP Client ID*]_*Inventory Timestamp*.zip.

7. If the inventory beacon is online, the inventory packages are uploaded to the FlexNet Manager Suite processing server immediately after data collection has been completed. This upload is triggered by the Microsoft scheduled task `Upload third-party inventory data`.

8. On the FlexNet Manager Suite processing server, the Microsoft scheduled task `Import SAP inventories` resolves the intermediate data packages into the operations database. The data is now ready for analysis in FlexNet Manager for SAP Applications.

9. After the analysis and optimization of the license data, you release license recommendations to the SAP Admin module or the independent SAP system. These recommendations are automatically uploaded from FlexNet Manager Suite to the inventory beacon. The SAP Admin module or the independent SAP system connects to the inventory beacon via a web service to retrieve the recommendations. You can then process the recommendations on the SAP Admin module or the independent SAP system (that is, change user and/or license data as required and update the user primary data).

The collected data usually comprises the following: user names, user roles, the transaction codes that are included in user roles, user consumption (CPU time), module names, transaction codes of the system, the license-type hierarchy, and evidence of indirect access.

Package measurement data includes the package name, package ID, and package consumption data.

For more information about the data that is collected by the SAP Inventory agent, see the section *Tables Read and Data Collected by the SAP Inventory Agent* in the *FlexNet Manager for SAP Applications User Guide* PDF. For details of the scheduled tasks controlling these processes on the inventory beacon, see Scheduled Tasks for Inventory Beacon.

For more information about the data that is collected by the SAP Inventory agent, see *Tables Read and Data Collected by the SAP Inventory Agent* in the *FlexNet Manager for SAP Applications Installation Guide* PDF.

For details of the scheduled tasks controlling these processes on the inventory beacon, see *Scheduled Tasks for Inventory Beacon* in the FlexNet Manager Suite online help.

Important: *Package-measurement and activity-checks data can be collected only after a package measurement or activity checks analysis has been executed on the dependent SAP system. Package-measurement or activity-checks data is available in the staging database of the SAP Admin module after the Staging Database Monitor has launched*

the USMM remotely, or after the Package Analysis and Activity Checks have been run.

Important: *Package-measurement and activity-checks data can be collected only after a package measurement or activity checks analysis has been executed on the dependent SAP system. Package-measurement or activity-checks data is available in the staging database of the SAP Admin module after the Staging Database Monitor has launched the USMM remotely, or after the Package Analysis and Activity Checks have been run.*

Register an Inventory Beacon

Running the inventory beacon requires an account with administrator privileges.

Registering the beacon sets up its communications to FlexNet Manager Suite.

Complete this process after installing the inventory beacon software.

If you are installing a hierarchy of inventory beacons, so that some 'child' beacons report to 'parent' beacons rather than to the central application server(s), you must register them top down through the hierarchy. Parent beacons must be registered before their children.

To register an inventory beacon:

1. Run the inventory beacon interface (for example, **Start > FlexNet Beacon**).

   By default, the interface should first display the **Parent connection** page (linked from the **Beacon configuration** group in the navigation bar). Ensure that this page displays.

2. Ensure the **Enable parent connection** check box is selected.

   This enables the controls in this page.

3. Click **Download configuration**.

   A new window opens in your web browser, pre-populated with the unique identification (GUID) of this inventory beacon in the **Unique ID** field. (This means that each inventory beacon must download its own configuration file, and you cannot share configuration files between inventory beacons.)

   Tip: *The URL used by the web browser is the one registered as part of the installation of the inventory beacon.*

4. Does this inventory beacon connect directly to the central application server(s)?

   - If this beacon reports to the central application server(s), skip the **Parent beacon** field, ensuring that it is empty.

     a. If you already know its name, enter (part of) the name in the field; but if you are not sure, leave the field blank.

     b. Click **Search**.

        A fly-down lists the available inventory beacons (matching your text entry, if you used one).

     c. Ensure that the appropriate parent beacon is selected (with the check box on its left end), and click **Select**.

        The beacon name appears in the **Parent beacon** control.

5. In the **Name** field, add a friendly name by which you would like to identify this new beacon in future lists in FlexNet Manager Suite.
6. Choose an **Upgrade mode** for this beacon. You can manage the future upgrade behavior of each inventory beacon individually by choosing from:
   - **Always use the latest version (currently *versionNumber*)** — Future upgrades (after 2014 R2) to the central application server(s) also deliver updated inventory beacon software to match. With this option, that updated FlexNet Beacon software is automatically deployed to this beacon (wherever it may be in the hierarchy), and it will automatically update itself at that time. (Notice that this setting overrides any global limit, for which see the next option.)
   - **Always use the approved version (currently *versionNumber*)** — A global limit to the version of the inventory beacons for production use can be set in the web interface at **Discovery & Inventory > Settings**, in the **Beacon settings** section, by choosing an option for **Beacon version approved for use**. (Notice that this global preference can also be set to **Always use the latest version (currently *versionNumber*)**. When that is selected in the web interface, on inventory beacons, the first two of these choices are identical in effect.)
   - **Do not upgrade automatically** — This inventory beacon will sit at its current installed version until you return to this page and change this option.
   - **Choose a specific version** — When you select this, an additional **Specific version** control appears. Use this to choose from the versions available on the central application server.
7. For **Configuration status**, select **Enabled** for normal operation.

   With this control, selecting **Disabled** stops the inventory beacon executing the centrally-determined rules for discovery and inventory gathering by remote execution or with installed FlexNet inventory agents. Other beacon functionality, such as downloading updated rules and settings, collecting and uploading third-party inventory, Active Directory data, or business information (in short, any connections defined on the beacon itself), continue unchanged.
8. Click **Download configuration**.
9. Use the web browser dialogs to save the configuration file to a convenient directory on the inventory beacon computer (such as `C:\temp` or the installation folder for the inventory beacon software).
10. Switch to the inventory beacon interface, and in the same tab, click **Import configuration**.
11. Browse to the file you saved in step 9, and click **Open**.

    The configuration file is loaded, and populates the connection details in the **Parent connection** page. Do not under any circumstances modify these values. Should the values become corrupted, you can repeat this process, being certain to import the new configuration file (which will contain a different password).
12. When the configuration details are changed, the inventory beacon runs a background check on the connection, and displays the results on the page. If there are problems listed, you can address these and (if required) click **Test connection** to retry.

    This testing validates the downloaded credentials and the communication channel. When the connection test displays success, your beacon is registered and this process is completed.
13. If there are errors:
    a. Check that your web browser on the inventory beacon can still access your central application server, to

validate that the network has not gone down.

b. If the network connection is still good, repeat the **Test connection** in the inventory beacon interface. If the error persists, we have established that it was not a momentary intermittent problem.

c. Validate that you did not edit the GUID in steps 2-3, and that the inventory beacon name you created contains only alphanumeric characters. If either of these problems is possible, repeat this process from step 2 to create a different configuration file, with new credentials.

d. Have a system administrator review the beacon log file located in `C:\ProgramData\Flexera Software\Compliance\Logging` to look for further information about the failure. Ask the system administrator whether there are any network settings (such as proxies) that prevent a web service accessing a website that a browser is allowed to access.

e. If the problem is still not resolved, contact Support at Flexera.

After this registration process, your inventory beacon knows how to communicate with FlexNet Manager Suite.
To make the inventory beacon operational, you must now:

- Add the downstream connections from which data is to be collected (as described under Managing Inventory Beacon Connections).
- Ensure that it remains enabled. Operation of each inventory beacon can be enabled/disabled both from the beacon itself, and from the web interface for FlexNet Manager Suite. By default it is enabled at both ends.

Communication between the SAP Admin Module and an Inventory Beacon

Communication between an inventory beacon and the SAP Admin module is facilitated using web services, just like the communication between FlexNet Manager Suite and the SAP Admin module.

For information on configuring these web services, see the *FlexNet Manager for SAP Applications Installation Guide* PDF.

Configuring IIS for Communication between the Inventory Beacon Server and the SAP Admin Module

The SAP Admin module can be configured to connect to the inventory beacon server to retrieve and send SAP-related data, such as, for example, SAP usage data, license recommendations, and the active landscapes.

In order to retrieve this data, Microsoft Internet Information Services (IIS) must be installed on the inventory beacon, and the *SAPService* web service must be configured. In addition, the inventory beacon must be configured to use IIS.

To configure the inventory beacon to use IIS:

1. Ensure that IIS is installed on the inventory beacon.

2. On the inventory beacon server, from the Windows **Start** menu, run **FlexNet Beacon**.
3. On the **Local Web Server** tab, click **IIS web server**.
4. Select **Basic Authentication**.
5. Click **Save**.

After you have performed these steps, the *SAPService* web service is configured automatically.
For more information on the beacon web server, see Local Web Server Tab.

For more information on the beacon web server, see *Local Web Server Page* in the FlexNet Manager Suite online help.

Managing Inventory Beacon Connections

You can define the connections to SAP Admin modules, their dependent SAP systems, and independent SAP systems. Please note that although the inventory beacon does not connect to the dependent SAP systems, you must however set up connections to the dependent SAP systems so that they are added to the system landscape in FlexNet Manager Suite, and to enable the landscape synchronization with the SAP Admin module. (Dependent SAP systems that are not defined on the inventory beacon are not imported into FlexNet Manager Suite and the SAP Admin module.)

Important: *For inventory beacons which run on the central application server, the collection of SAP inventory data is* ***not*** *supported. In this case, you must set up an inventory beacon on a server which is separate from the central application server. Otherwise the connections to the SAP systems must be configured directly in SAP mode using the web interface of FlexNet Manager Suite. For procedural information, see Adding an SAP Admin Module System, Adding a Dependent SAP System, and Adding an Independent SAP System.*

Managing a free-standing inventory beacon

You can manage your connections in these ways:

- Creating a new connection (see Creating SAP Connections)
- Updating details for a connection (see Modifying SAP Connections)
- Removing a connection that no longer applies (see Deleting SAP Connections)
- Manually triggering data collection through a connection (see Executing Connections).

Creating SAP Connections

Before the SAP Inventory Agent can collect data on an inventory beacon, you need to configure the connection and provide the credentials on the inventory beacon.

After the import is executed on the inventory beacon, the connections that you set up on an inventory beacon are automatically imported into FlexNet Manager Suite and are added to the corresponding system landscape.

You need to add a connection to an SAP Admin module before you can add connections to its dependent SAP systems.

To define a connection to an SAP system:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.
3. Click **New...**.

   The **SAP Connection** dialog window displays.

4. In the **System landscape details** section, complete the following fields:

   a. The **System landscape** field displays your system landscape(s). Choose the landscape that contains the SAP Admin module or independent SAP system that you want to connect to.

   b. From the **SAP suite type** drop-down list, choose the type of SAP suite for this connection. Available options are:

   - **Classic Business Suite**
   - **S/4HANA**

   c. From the **SAP system type** drop-down list, select the type of system to which you want to connect from the drop-down list. Available options are:

   - **Admin Module** — Your primary or root system that collects data from its dependent SAP systems. This option does not support S/4HANA.
   - **Independent SAP System** — An SAP system that is not connected to an SAP Admin module.
   - **Dependent SAP system** — An SAP system that is connected to an SAP Admin module. This option only displays when a connection to an SAP Admin module has already been established.

   d. Choose the **Master SAP system** from the drop-down list. If you are creating a beacon connection to a dependent SAP system, select the SAP Admin module to which the dependent system is connected.

5. In the **Connection details** section, complete the following fields:

   a. Choose the type of connection you want to establish from these options:

   - **Direct connection** — Select to establish a direct connection.
   - **Load balancer** — Select this option to establish a connection to a load balanced solution manager. This option automatically distributes user logons to individual instances or to groups of SAP instances (application servers) in a load balancing environment.

   b. In the **Server name** text box, select from these options:

   - If **Direct connection** was selected above, enter either the DNS name of the SAP system, or its IP address. This value will be used by the RFC connection.
   - If **Load balancer** was selected above, enter the message server host name.

   c. In the **System ID** text box, enter the unique identifier of the SAP system to which you want to connect.

d. In the **System number** text box, enter the SAP system number which will be used by the RFC connection.

e. In the **Logon group** text box, enter the name of the logon group which will be used for load balancing.

This option is enabled when **Load balancer** is selected at Step 5a.

Logon groups are created when configuring your SAP server. This option automatically distributes user logons to individual instances or to groups of SAP instances (application servers) in a load balancing environment.

6. In the **Logon details** section, complete the following fields:

a. In the **User name** text box, enter the user name to be used when connecting to the SAP system and making RFC calls.

b. In the **Password** text box, enter the password.

The password that is to be used when connecting to the SAP system and making RFC calls.

Important: *The password should not contain any backward slashes (\). Otherwise, the connection to the SAP system cannot be established.*

Important: *On some configurations, a logon error can occur when connecting an independent SAP system. The issue may affect SAP systems up to SAP Basis release 6.4, but primarily affects systems running SAP Basis 4.6. It is recommended that you test the connection using the* ***Test connection*** *button. If the test returns an error saying that the connection to the system was established, but that credentials were incorrect, enter the password in uppercase letters. For more information, see SAP Note 792850.*

c. In the **Client ID** text box, enter the client ID of the SAP system to which you want to connect.

7. If you chose to collect data for an **Independent SAP System**, the **Digital access data** section enables you to set the time period to collect the digital access data for by choosing from these options:

- **Last [3] months** — Select to collect data for one or more months and optionally modify the default selection of 3 months to a value from 1 up to a maximum of 12 months.
- **Last calendar year** — Select to collect data from 1 January until 31 December for the previous year.
- **Custom date** — Select to set any custom date range using the **Start date** and **End date** fields.

8. Optionally, if you are using Secure Network Communication (SNC) for your target system (whether an **Independent SAP System** or an **Admin Module**) and you are connecting from a stand-alone inventory beacon, complete the following fields in the **Secure Network Communication (SNC) configuration** section.

Tip: *SNC connection is not available from an inventory beacon that is co-located on your application server (or any of your central application servers, in a multi-server implementation).*

Using the SNC feature on FlexNet Beacon requires some preliminary configuration:

- If your enterprise is already using SNC in your SAP environment, confirm whether you are using X-509 or Kerberos certificates. (If SNC is not already in use on your SAP system, please ask the SAP Basis team to configure SNC on SAP, and then confirm the certificate type.)

- Ask your SAP Basis team to help with the following for your inventory beacon:
  a. Install the SAP Cryptographic Library/SAP Client Encryption on the inventory beacon.
  b. Create a Personal Security Environment (PSE) and self-signed public-key certificate. While doing so, take note of the SNC name of this inventory beacon server, as you need this later in the process.
  c. Create credentials for the inventory beacon.
  d. Configure the certificate for use between FlexNet Beacon and the SAP Admin Module server, using `STRUST` and `SGENPSE`.

When these preparations are complete, you can proceed with the following settings in the **SAP Connection** dialog:

Tip: *There are regulations in various countries that restrict the use of encryption in software applications. Pay close attention to the regulations applying in your area. Use the following settings only where permitted.*

a. Select the **Enable SNC** check box.

When this is selected, the following four fields are enabled.

b. Use the **Browse** button to identify the location of the SNC library for this connection.

This is mandatory for this connection. Typically you may identify the `sapcrypto.dll` file, or you may check the environment variable `SNC_LIB` on the target SAP system.

c. From the **Level of protection** drop-down, choose one of the following values (the numbering follows the SAP conventions for these options):

- `1. Authentication only` – verifies the identity of the communication partners (in this case, FlexNet Manager Suite and your SAP system)
- `2. Integrity protection (authentication)` – detects any changes or manipulation of the data exchanged, as well as verifying identities
- `3. Privacy protection (integrity and authentication)` – encrypts communications, as well as the two previous kinds of protection
- `8. Default protection` – takes the value from `snc/data_protection/use` on the SAP application server
- `9. Max protection` – takes the value from `snc/data_protection/max` on the SAP application server.

d. In the mandatory field for **Partner SNC name**, insert the SNC name of SAP NetWeaver Application Server for ABAP.

This value is available on the SAP NetWeaver Application Server for ABAP in the profile parameter `snc/identity/as`. An example is:

```
p:CN=ABC, O=MyCompany, C=US
```

e. In **My SNC name**, specify the SNC name of this inventory beacon server.

You took note of this name while configuring the PSE on this inventory beacon. Example:

```
p:CN=FlexNetBeacon, O=MyCompany, C=US
```

f. Click **Test connection** to verify that the secure connection to SAP works.

If the SNC connection from the inventory beacon fails, ask your SAP Basis team to install the SAPGUI client on the inventory beacon. Activate the SAPGUI client, and check whether the secure connection to SAP works now. If it still does not succeed, ask for the help of your SAP Basis team to identify and correct the issue (for example, make sure that the same SAP Crypto library has been specified on the inventory beacon and the target SAP server).

9. If you have not already done so, click **Test connection** to test whether a connection can be established. This button is only available when you are creating or modifying the connection to an SAP Admin module or to an independent SAP system.
10. Click **Save**.

The new connection is added to the list of connections.

Your new connection can now be executed by the SAP Inventory Agent on this inventory beacon.

The SAP system connections are saved in `%ALLUSERSPROFILE%\Flexera\Beacon\Config.xml`. The SAP Inventory Agent uses the connection details saved in this file to access the SAP systems and gather inventory data.

Modifying SAP Connections

SAP system connections are identified based on their system ID, client ID, and the SAP system landscape of the SAP system. Modifications to an SAP system connection on an inventory beacon are automatically sent to FlexNet Manager Suite where a new SAP system is created.

Important: *Changes to the SAP suite type of existing SAP system connections are not automatically sent to FlexNet Manager Suite and must be manually adjusted on the FlexNet Manager SAP System page. See Synchronizing a System Landscape in the SAP Admin Module with FlexNet Manager Suitein the FlexNet Manager for SAP Applications User Guide.*

To modify an SAP connection:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.
3. Select the connection you would like to modify from the list.
4. Click **Edit...**.
5. In the **SAP Connection** dialog, modify any properties of the SAP system connection that you want to change.

   If you change the password, ensure that it does not contain any backward slashes (\ ). Otherwise, the connection to the SAP system cannot be established.

6. If you have not already done so, click **Test connection** to test whether a connection can be established. This

button is only available when you are creating or modifying the connection to an SAP Admin module or to an independent SAP system.

7. Click **Save**.

Deleting SAP Connections

Deleting a connection permanently disables inventory collection from that system.

When connections are deleted on an inventory beacon, they will no longer generate packages. If any unwanted packages from the connection have been uploaded to the processing server, you will need to delete the packages there as well.

If you delete an SAP system connection on an inventory beacon, the corresponding SAP system is not automatically removed from the corresponding system landscape in FlexNet Manager Suite. To remove the system from the system landscape in FlexNet Manager Suite, perform the procedure described in Deleting an SAP System.

To delete an existing SAP system connection:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.
3. Select the connection you would like to delete from the list.
4. Click **Delete**.

   A warning message is displayed.

5. If you wish to proceed with the deletion, click **OK**.

Executing Connections

Inventory collection can be triggered automatically or manually.

Any SAP connection (and resulting imports) configured to run on an inventory beacon will be executed each time an appropriate data gathering schedule triggers the collection of SAP inventory data on the inventory beacon. For information on creating a schedule, see Creating a Data Gathering Schedule.For information on creating a schedule, see *Creating a Data Gathering Schedule* in the FlexNet Manager Suite online help.

It is also possible to execute a connection manually, by clicking a button in the FlexNet Beacon interface.

To manually execute a specific SAP connection and collect inventory data:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.

3. Select the connection you would like to execute, and click **Execute now**.

7

System Tasks Status Monitoring

In FlexNet Manager Suite, use the **System Tasks** page to monitor the current status of specific running tasks that have been initiated by an operator or by a scheduled task.

For each task that has completed during a specified period (7, 14, or 30 days), you can see a short summary of the task, its steps, and its outcome. If a task failed or completed with errors, a message informs you about the nature of the issue and how you can remedy it. You can also download a log with additional information.

All system task information is automatically deleted after 30 days.

To see the **System Tasks** page, you must have appropriate access rights. For more information, see Accessing System Task Information.

The information in this section describes only the monitoring of the SAP-related task **SAP import** and its steps.

SAP Import Task

The system task **SAP import** includes the following steps:

- Gathering of inventory data (user and license data, and SAP package data)
- Upload of inventory data to the inventory beacon (applicable only if your implementation uses inventory beacons)
- Upload of inventory data to the FlexNet Manager Suite application server
- Import of inventory data into the FlexNet Manager Suite application server.

Status Indicator for System Tasks

On the right side of the navigation bar, the status indicator for system tasks shows whether tasks need your attention. The indicator shows the status of the tasks that you have chosen to monitor. For more information, see My Preferences. For more information, see *My Account* For more information on selecting the tasks that should be monitored, see Selecting the Monitored Tasks.

The status indicator for system tasks is displayed only if you have appropriate access rights. For more information,

see Accessing System Task Information.

The indicator shows the following status:

- Animated — Tasks are running
- Red — One or more tasks have failed
- Orange — Tasks completed, but errors have occurred.

Note: *The task* ***SAP import*** *cannot complete with errors; it either succeeds or fails.*

Selecting the Monitored Tasks

You can select the tasks for which the status indicator for system tasks should show the status. For example, you could specify that the indicator should show status information only for tasks of the type **SAP import**.

To select the tasks that should be monitored:

1. In the settings bar of FlexNet Manager Suite, navigate to *`your account name`* **> My Preferences**.
2. Under **Task monitoring**, select the check boxes for the tasks that should be monitored.
3. Under **Indicate status of tasks for**, select the period for which the indicator should show the task status.

Displaying System Tasks

To display the **System Tasks** page, you need appropriate access rights. For more information, see Accessing System Task Information.

You can monitor all system tasks that have been run in the last 30 days on the **System Tasks** page.

To display the system tasks, do the following:

- Hover over the system menu (▼ in the top right corner), point to **System Health**, and click **System Tasks**.

System Task Information

To display the **System Tasks** page, you need appropriate access rights. For more information, see Accessing System Task Information.

Choosing what is visible

The items listed on this page are filtered by the settings at the top left:

- The **Tasks run in the last** drop-down list enables you to select the age of the tasks that appear on this page. For example, if you select `30 days`, FlexNet Manager Suite displays only those system tasks that are not older than 30 days in the system.

- The **Only show last run** drop-down list enables you to limit the records for recurring system tasks. The default value of this field is `Yes`, which restricts this page to show details of only the latest execution of a recurring system task. For example, if a discovery and inventory rule has been scheduled to run every day, this page would display the status of the latest execution of the rule.

You can also apply additional filters to restrict the number of records on this page. For more information about using filters, see the topics under Using Lists in FlexNet Manager Suite. For more information about using filters, see the topics in online help under *Using Lists in FlexNet Manager Suite*. The **Save view as** feature of FlexNet Manager Suite enables you to create customized management views of a page by saving the applied user interface settings. For more information, see Creating Saved Views. For more information, see *Creating Management Views* in the online help.

Tip: *The* ***Task monitoring*** *section on the* ***My Preferences*** *page allows you to monitor task types. This setting does not affect the records on the* ***System Tasks*** *page. For more information, see My Preferences. For more information, see "My Preferences" within the online help topic My Account.*

Available properties

This page displays the following *read-only* task properties, listed here in alphabetical order. Some of these are displayed by default, and the remainder are available in the column chooser:

Column	Description
Task/Step	The task that is monitored. To see the steps that are included in the task, click the plus (+) sign in front of the task name. For tasks of type "SAP import", the task name indicates the system name and client ID of the SAP system from which user or license data was imported, in the format *`SystemName-ClientID`*.
Beacon	The name of an inventory beacon involved in this task. One or more inventory beacons may be involved in a task. When multiple inventory beacons are involved in a `Discovery and inventory rule` task, the task will appear in multiple rows at the top level, with each row corresponding to an individual beacon involved. This property is displayed by default. Best practice is to keep this property visible in the listing so that you can easily distinguish rows with the same task name but operating through different inventory beacons. Editable in the **General** tab of the inventory beacon properties.
Connection type	The type of the connection used for this task. It can have any of the following values: • `CSV` • `One-off upload` • `Other` • `PowerShell` • `SQL Server` ***Note:*** *You cannot currently filter for these values.*

Column	Description
Created by	The name of a operator who started this task or step.
End date	The date and time when this step or task was completed.
Logs	For tasks of the type `SAP import`, a text file with detailed information is available for the step "Gathering inventory data" and "Importing into application server". Click **Download log** to download. Use the log file to find out which SAP tables have been read and if the action was successful.
Server name	The name of the inventory beacon or central application server where this task or step is running.
Start date	The date and time when this step or task was initiated.
Status	The status of this step or system task. For any `Discovery and inventory rule` task or step, the displayed status is the status of this task or step on the inventory beacon identified in this row. When this task/step runs on only one inventory beacon, this value becomes the overall status of the task/step. It can have any of the following values: • `Completed` • `Completed with errors` • `Failed` • `In progress` • `In progress with errors` • `Pending` • `Scheduled` • `Skipped` • `Started` • `Timed out` • `Unknown`. ***Tip:*** *An overnight clean-up process marks any individual step as timed out if it has already been running for more than 24 hours. The parent system task is marked as timed out as soon as any individual child step has timed out.*
Instance region	A short description of the outcome of the task or task step. You may also notice the **See details** link for some tasks. You can click this link to view a detailed summary of activities performed within that task.

Column	Description
Task type	The type of the task that is monitored. For SAP data, the task types `SAP import` and `SAP license position`.

Filtering for SAP-Related System Tasks

To display the **System Tasks** page, you need appropriate access rights. For more information, see Accessing System Task Information.

On the **System Tasks** page, you can filter the system tasks to display only the SAP-specific tasks of type **SAP import**. The filter settings persist when you leave the **System Tasks** page and return to it later.

To display only SAP-related system tasks:

1. In FlexNet Manager Suite, at the right of the modal navigation bar, click the status indicator for system tasks. Alternatively, navigate to the system menu ▾ in the top right corner, point to **System Health**, and click **System Tasks**.
2. On the **System Tasks** page, set the following filter settings:
   a. For **Tasks run in the last**, select the period for which tasks should be displayed, or accept the default value.
   b. For **Only show last run**, select **Yes** if only the last task that was run on a specific SAP system should be displayed, or select **No** if all tasks should be displayed.
   c. Click **Add filter** to enable additional filter options.
   d. In the next drop-down list, select **Task type**.
   e. In the last drop-down list, select the task type **SAP import**.
   f. Click the blue check mark to apply your filter settings.

Accessing System Task Information

The system task information only displays for users with appropriate account properties. You define these account properties on the **Account Properties** page.

To configure access to system task information:

1. In FlexNet Manager Suite, navigate the system menu (▾ in the top right corner) and click **Accounts**.
2. On the **Accounts** page, on the **All Accounts** tab, click the name of the account for which you want to configure access rights.
3. Under **Permissions**, select an appropriate role that enables access to administration features in the FlexNet Manager Suite web interface.
4. Click **Administration** and select one the following options:

- Select **Troubleshooting: access to System Tasks page** to enable access to the **System Tasks** page. If this check box is cleared, the **System Tasks** page is not visible for the user.
- Select **Troubleshooting: advanced access and log downloads** if the user should be able to download logs on the **System Tasks** page.

5. Click **Save**.

8

The Dashboard (SAP Overview Page)

The **SAP Overview** page, also known as the dashboard, displays a visual overview of your SAP licensing situation.

To display the SAP Overview page, do any of the following:

- From anywhere in the FlexNet Manager Suite web interface, click **SAP** in the top section of the navigation menu.
- From any page in SAP mode, click **SAP** in the bread crumbs.
- Browse to `http://Your-portal-server/SAPOptimization/SAP/SAPHome.aspx`.

Compliance Position

This section of the **SAP Overview** page displays a graph that compares the purchase quantity and license consumption for your largest SAP licenses. A license is *over-utilized* when the quantity consumed is greater than the quantity purchased.

The quantity purchased value is as entered in SAP mode, drilling down through the **License Types** page, and is not calculated from purchase order lines recorded in FlexNet Manager Suite.

Named User Licenses

This graph in the **SAP Overview** page summarizes the trends over time in total purchase quantity and license consumption for all SAP licenses combined. Each bar is the relevant count in the last valid record of inventory in the period. Include several periods in the graph to making trending more apparent.

The quantity purchase values are as entered in SAP mode, drilling down through the **License Types** page (see Editing License Types in the License-Type Hierarchy), and are not calculated from purchase order lines recorded in FlexNet Manager Suite.

Tasks You Can Perform in This Section

To change the period that the graph covers or the intervals displayed, click **Change period**. For more information, see Changing the Period for the SAP Overview Page.

Current vs. Optimal

This graph in the **SAP Overview** page compares the actual license consumption with a usage-based recommendation by FlexNet Manager for SAP Applications. Current consumption figures are calculated by FlexNet Manager for SAP Applications to match what the SAP LAW would calculate given the same data. The five licenses with the largest consumption are shown, as these are the licenses where you are most likely to save money.

License Utilization

This graph in the **SAP Overview** page compares your current SAP license value against a projected SAP license value if you accepted all license-type recommendations made by FlexNet Manager for SAP Applications. The graph shows the net value of all licenses that are currently assigned to users (baseline, current position) and the license value based on the license rules (optimal position).

The information in this graph is based on the data from the **License Types** section. Therefore, it will provide a comprehensive picture of your SAP licensing cost only if you assigned a unit price to each license type in the license hierarchy (see Editing License Types in the License-Type Hierarchy).

Tasks You Can Perform in This Section

To change the period that the graph covers or the intervals displayed, click **Change period**. For more information, see Changing the Period for the SAP Overview Page.

License Ratios

This graph in the **SAP Overview** page shows the monetary value of the following positions:

- Current license usage
- Optimal license usage (if all recommendations made by FlexNet Manager for SAP Applications were accepted)
- Contractual license usage, including current purchases and purchases that are required in order to remain compliant (consumption of spare superior licenses and active license ratios are factored in)
- Contractual license usage excluding license ratios (the calculation takes spare superior licenses into account, but does not factor in an active license ratio).

Current consumption figures are calculated by FlexNet Manager for SAP Applications to match what the SAP LAW would calculate given the same data.

You specify and activate a license ratio on the **License Ratio** page. For more information, see Managing SAP License Ratios.

The information in this graph is based on the data from the **License Types** section. Therefore, it will provide a comprehensive picture of your SAP licensing cost only if you assigned a unit price to each license type in the license hierarchy (see Editing License Types in the License-Type Hierarchy).

Changing the Period for the SAP Overview Page

To change the period covered by the **Named User Licenses** or **License Utilization** graph on the **SAP Overview** page:

1. Click **Change period** in the lower-right corner of the item.

   The dialog **Change** *gadget-type* **Period** displays.

2. In the **Interval** field, select the interval groupings to include in the graph (monthly, quarterly, or yearly).

3. In the **Duration** field, select the number of intervals to include in the graph. For example, if you selected an interval of Quarterly, and a duration of 4, then the graph will cover all four quarters of a year.

4. After setting these two fields, the format of the **End Date** field changes according to the interval you have selected. Complete this field (and any additional fields that display) as described below.

   - **Monthly**
     Select the **Use the current month** check box if you want to use the current month as the end date.

     Otherwise, clear the check box. **Month** and **Year** fields are displayed to enable you to specify the month in which the data should end.

   - **Quarterly**
     Month and **Year** fields are displayed to enable you to specify the month in which the data should end. If, for example, you selected to end a graph on March 2019, the first quarter of data shown in the graph would cover the period January-March, 2019.

   - **Yearly**
     Month and **Year** fields are displayed to enable you to specify the month in which the data should end. If, for example, you selected to end a graph on March 2019, the first year of data shown in the graph would cover the period April 2018 to March 2019.

5. Click **Apply** to confirm the change in period.

The dialog closes, and the graphic summary is refreshed to cover the new period.

9

SAP License Position

In FlexNet Manager Suite in SAP mode, the **License Position** section enables you to see your organization's license position in both summary and detailed mode on a per-landscape basis, and to monitor the state of any recommendations that have been released to the SAP Admin module.

Current License Position

The license position is automatically calculated on a daily basis to reflect the current licensing situation of your organization's SAP systems (SAP Admin module, dependent and independent SAP systems) and non-SAP systems. It is based on all active license rules, Duplicate User rules, the user consolidation, package licensing rules, and the specified license ratio (if applicable).

In FlexNet Manager Suite, you access the **License Position** page by clicking **SAP**, pointing to **License Position** in the navigation bar and selecting **Current Position**.

Details – General

The **Details – General** section on the **License Position** page shows general information for the current license position:

- **Name** — The generic text `Current license position`.
- **License position calculated at** — The date and time when the current license position was last calculated.
- **System landscape** — The name of the system landscape for which the license position was calculated.

Details – User Compliance

The **Details – User Compliance** section shows a summary of your license position for all license types.

Table 7: Details grid – User Compliance section

Option	Description
Purchased	The total number of user licenses that your organization has purchased (as specified on the **License Ratio** or **License Type:** *name* page)

Option	Description
Purchase value	The monetary value of the licenses that your organization has purchased. This amount is based on the license numbers that were specified on the **License Type:** *name* or **License Ratio** page and the unit price that was entered on the **License Type:** *name* page.
Consumed (Current)	The total number of consolidated user licenses that are currently assigned to users. This excludes user licenses on S/4HANA systems.
Consumed value (Current)	The monetary value of all user licenses that are currently assigned to users (based on the unit price that was entered on the **License Type:** *name* page).
Used (Optimal)	The total number of user licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications. This amount is based on all active license rules, the Duplicate User rules, and the user consolidation. This value shows the best possible scenario. However, it does not take into account any contractual obligations that your organization might need to consider with regard to its SAP licenses (for example, a license ratio or the consumption of spare superior licenses).
Used value (Optimal)	The monetary value of all user licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications. This amount is based on all active license rules, the Duplicate User rule, the user consolidation, and the unit price that was entered on the **License Type:** *name* page.
Used (Contractual)	The number of licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications. In addition, it takes certain contractual obligations into account (if these have been specified in FlexNet Manager for SAP Applications): • Spare licenses: The value factors in existing spare licenses of a higher license type that could cover licenses of a lower license type. As a prerequisite, you must have defined the sub-licenses that are covered by a higher license type in the license-type hierarchy, and the **Recommend promoting users to spare superior licenses** option (on the **License Type:** *name* page) must be selected for these licenses. For more information, see License-Type Hierarchy. • License ratio: If a license ratio has been defined and activated, the license position will be calculated accordingly.
Used value (Contractual)	The monetary value of all user licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications (based on the unit price that was entered on the **License Type:** *name* page). In addition, it factors in spare superior licenses and a license ratio, if these have been specified (see previous item in this list).
Retired (Optimal)	The number of users who could be deactivated (change the Valid To date) according to the recommendations of FlexNet Manager for SAP Applications.

Details – Package Compliance

The **Details – Package Compliance** section on the **License Position** page shows information for the package licenses:

- **Number of packages** — The number of SAP packages that your organization is using.
- **Purchase value** — The monetary value of all package licenses that your organization has purchased.
- **Consumed value** — The monetary value of the package licenses that your organization has consumed.

These amounts are based on the information that is specified on the **SAP Package** page of each package. For more information, see Editing Package Information.

Details – Digital/Indirect Access

The **Details – Digital/Indirect Access** section on the **License Position** page show the number and value of documents created using SAP digital access:

- **Total documents created** — The total number of documents created using digital access.
- **Total value** — The total monetary cost estimate for documents created by your organization using digital access.

These amounts are based on the information that is specified in the **Digital Access Price Model** dialog which is accessible from the **Indirect Access** page of each system landscape. For more information, see Viewing Digital Access Price Model.

Details – License Surplus/Deficit

The **Details – License Surplus/Deficit** section on the **License Position** page shows an overall position for the your licenses.

Tip: *This section is only visible once one or more license reconciliation calculations have been completed.*

- **User license surplus/deficit** — The number of user licenses available or overused (shown as negative values) — that is, this is the difference between licenses purchased and the larger of **Consumed (Current)** and the **Used (Contractual)** value on the **License Position** page.
- **User license surplus/deficit value** — The monetary value of the user license variation. The calculation is similar to the above, but using the corresponding "value" fields.
- **Package license surplus/deficit** — The number of package licenses available or overused (shown as negative values) — that is, this is the difference between licenses purchased and licensed consumed on the **License Position** page.
- **Package license surplus/deficit value** — The monetary value of package license variation. The calculation is similar to the above, but using the corresponding "value" fields.
- **Total license surplus/deficit value** — The sum of the **User license surplus/deficit value** and **Package license surplus/deficit value**.

License Consumption

You can view your organization's consumption of SAP Named User licenses and of SAP package licenses. For both of these types, FlexNet Manager for SAP Applications provides a separate tab on the **License Position** page with detailed

consumption information on each license type.

License Position — Named Users

The **User License Summary** tab is available on the **License Position** page. It provides an overview of your license position of Named User licenses.

Column Name	Description
License Type	Shows the Named User license number.
License Type Description	Shows a description of the Named User license.
Purchased	Shows the number of licenses that your organization has purchased.
Consumed (Current)	This is the total number of consolidated user licenses that are currently assigned to users. This excludes user licenses on S/4Hana systems.
Used (Optimal)	This is the total number of user licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications (based on all active license rules, the Duplicate User rules, and the user consolidation). This value shows the best possible scenario. However, it does not take into account any contractual obligations that your organization might need to consider with regard to its SAP licenses.
Used (Contractual)	This column shows the license consumption after all of the following have been applied: • Optimization rules (active license rules, Duplicate User rules, and user consolidation) • License ratio (if specified and activated) • Over-consumption of license types is handled by using spare superior licenses. As a precondition, the **Recommend promoting users to spare superior licenses** option (on the **License Type:** *name* page) must be selected for the appropriate licenses. In contrast to the **Used (Optimal)** column, the **Used (Contractual)** column shows the best possible license position with your contractual obligations factored in. The **Used (Contractual)** column factors in available licenses and licenses that are yet to be purchased to reach the displayed license position. It should always be viewed in combination with the **License Deficit** column.
License Deficit	Shows the number of licenses that your organization needs to purchase to remain compliant. The values in the **License Deficit** column should always be reviewed in combination with the values in the **Used (Contractual)** column.
Consumed Value (Current)	Shows the total value of the licenses that are currently assigned to users. This amount is based on the user consolidation and the unit price that is specified for the license type in the license-type hierarchy.

Column Name	Description
Used Value (Optimal)	Shows the monetary value of all user licenses that would be consumed if you were to accept all recommendations by FlexNet Manager for SAP Applications. This amount is based on all active license rules, the Duplicate User rule, the user consolidation, and the unit price that was entered on the **License Type:** *name* page.
Used Value (Contractual)	This column shows the monetary value of all consumed user licenses after all of the following have been applied: • Optimization rules (active license rules, Duplicate User rules, and user consolidation) • License ratio (if specified and activated) • Over-consumption of license types is handled by using spare superior licenses. As a precondition, the **Recommend promoting users to spare superior licenses** option (on the **License Type:** *name* page) must be selected for the appropriate licenses. This amount is based on the license numbers that were specified on the **License Type:** *name* or **License Ratio** page and the unit price that was entered on the **License Type:** *name* page. The **Used Value (Contractual)** column factors in available licenses and licenses that are yet to be purchased to reach the displayed license position. It should always be viewed in combination with the **License Deficit** column.
Purchased Value	Shows the monetary value of the licenses that your organization has purchased. This amount is based on the license numbers that were specified on the **License Type:** *name* or **License Ratio** page and the unit price that was entered on the **License Type:** *name* page.

You can view the details of the user license summary by clicking **Show user license recommendations** below the grid on the **User License Summary** tab. This displays two tabs with detailed information about the individual recommendations:

- The **License Assignment Recommendations** tab contains details about license recommendation results that are based on licensing rules. For more information, see Viewing License Assignment Recommendations.
- The **Duplicate User Recommendations** tab contains details about recommendation results based on the Duplicate User rule. For more information, see Viewing Duplicate User Recommendations.

FlexNet Manager Suite (On-Premises)

2024 R2

Viewing License Assignment Recommendations

The **License Assignment Recommendations** tab enables you to view the details of the individual recommendations based on the active license rules, Duplicate User rules, license ratios, and settings for handling the over-consumption of license types.

To show detailed license assignment recommendations:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.

2. On the **License Position** page, below the **User License Summary** tab, click **Show user license recommendations**.
3. On the **License Position** page, click the **License Assignment Recommendations** tab to view the recommendation details.

To go back to the summary view, click **Show user license summary** below the tabs.

License Assignment Recommendations Details

The **License Assignment Recommendations** tab contains the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
User Name	The User ID of the user on the system on which the rule was run.
First Name	The first name of the user on the system on which the rule was run.
Last Name	The last name of the user on the system on which the rule was run.
Consolidated License Type (Contractual)	The consolidated license type that is recommended for the user if a license ratio is active. This value also includes spare licenses of a higher priority.
License Type (Current)	The license type that is currently assigned to the user on the system.
Duplicate Group # (Current)	The number of the duplicate group that bundles potential duplicate users who can be consolidated into one unique user. This column shows the current position.
Consolidated License Type (Optimal)	The consolidated license type that is recommended for the user if no license ratio is active and no spare licenses of a higher priority are taken into account.
Duplicate Group # (Recommended)	The number of the duplicate group that bundles potential duplicate users who can be consolidated into one unique user. This column shows the position that would be achieved if all recommendations were accepted.
License Type (Optimal)	The license type that is recommended for the user if no license ratio is active and no spare licenses of a higher priority are taken into account. If no matching rule is found for the user, the license type is unavailable.
Change Required	**Yes** indicates that a change of license type is recommended; **No** indicates that there is no recommendation to change the license type.
License Type Recommendation Reason	The reason that a license type is recommended. Reasons might include, for example, license ratio enforcement, or the availability of spare, higher-priority licenses to avoid the need to purchase additional lower-priority licenses.
Rule Name	The name of the rule that was applied.
Rule Reason	Explanatory text for the rule that was applied.
Valid From	The start date of the user's validity period.
Valid To	The end date of the user's validity period.

Column Name	Description
User Type	The user type of the user. Possible values are: • A: Dialog • B: System • C: Communication • D: BDC • L: Reference • S: Service
User Group	The group that the user belongs to.
Last Logon Date	The date when the user last logged on to the SAP system.
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Created On	The user's creation date.
Client ID	The client ID of the system on which the rule was run.
Consolidated License Type (Current)	The consolidated license type that is currently assigned to the user.
License Type (Contractual)	The license type that is recommended for the user if a license ratio is active. This value also takes spare licenses of a higher priority into account (if the relevant setting for over-consumption of spare licenses is active). If no matching rule is found for the user, the license type is unavailable.
Recommendation Status	Shows the processing status of this specific recommendation in the SAP Admin module: • **Accepted**—The recommendation has been accepted in the SAP Admin module. • **Rejected**—The recommendation has been rejected in the SAP Admin module. • **Pending**—This is the status of all recommendations in a recommendation set that has not yet been made available to the SAP Admin module.
Rule Order	The position of the rule that was applied in the rule set.
Rule Set Name	The name of the rule set that contains the rule on which the recommendation is based.
System ID	The three-character ID of the system on which the rule was run.

For more information on license ratios, see Managing SAP License Ratios.

License types are consolidated based on the Duplicate User rules. For more information, see Duplicate User Rule.

FlexNet Manager Suite (On-Premises)

2024 R2

Viewing Duplicate User Recommendations

The **Duplicate User Recommendations** tab enables you to view the details of the individual recommendations based on the Duplicate User rules.

To show detailed recommendations for duplicate users:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, below the **User License Summary** tab, click **Show user license recommendations**.
3. On the **License Position** page, click the **Duplicate User Recommendations** tab to view the recommendation details.

To go back to the summary view, click **Show user license summary** below the tabs.

Duplicate User Recommendations Details

The **Duplicate User Recommendation** tab contains the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
Duplicate Group #	The duplicate users that have been identified are presented in groups, and each duplicate group has a number, which is shown in this column.
User Name	The User ID of the user on the system on which the user was identified.
First Name	The first name of the user on the system on which the user was identified.
Last Name	The last name of the user on the system on which the user was identified.
System ID	The three-character ID of the system on which the duplicate user was identified.
System Type	Specifies whether the system is an SAP system or a non-SAP system.
Rule Name	The name of the rule that was applied.
Rule Reason	Explanatory text for the rule that was applied.
Rule Order	The position of the rule that was applied in the rule set. (The rule order does not affect the results of the Duplicate User rule.)
Rule Set Name	The name of the rule set that contains the rule on which the recommendation is based.

Column Name	Description
Recommendation Status	Shows the processing status of this specific recommendation in the SAP Admin module: • **Accepted**—The recommendation has been accepted in the SAP Admin module. • **Rejected**—The recommendation has not been accepted in the SAP Admin module. • **Pending**—This is the status of all recommendations in a recommendation set that has not yet been made available to the SAP Admin module.
Accounting Number	The user's accounting number.
Client ID	The client ID of the system on which the user was identified.
Email Address	The email address of the user on the system on which the user was identified.
Extension	The user's phone extension.
License Type (Current)	The license type that is currently assigned to the user on the system.
Phone Number	The user's phone number.

FlexNet Manager Suite (On-Premises)

2024 R2

License Position — SAP Packages

The **Package Consumption Summary** tab is available on the **License Position** page. It provides an overview of your organization's package licensing situation.

The top-level summary shows the package consumption across all systems on a per-package basis.

Option	Description
Name	The name of the package.
Purchased	The number of units that have been purchased for this package. You set the number of purchased units on the package details page. This excludes packages on S/4HANA systems.
Consumed	The number of units that have been consumed for this package. This excludes packages on S/4HANA systems.
Purchase Value	The purchase cost for the number of units for this package. You set the purchase cost per unit on the package details page.
Consumed Value	The total cost that has been consumed by this package.
Result Reason	This field can be used to provide additional context about a package consumption calculation.

Option	Description
Measurement Date	The date of the measurement on which the package consumption calculation is based.

FlexNet Manager Suite (On-Premises)

2024 R2

Per-System View of Package Consumption

You can display a more detailed view of the package consumption to see how the consumption is distributed over several systems, or how the total consumption has been calculated. This view does not include any cost information.

To display the package consumption per system:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, click the **Package Consumption Summary** tab.
3. Below the table, click **Show per system consumption**.

Option	Description
Name	The name of the package.
System ID	The ID of the system on which the package is used.
Client ID	The ID of the client on which the package is used.
Consumed	The number of units that the package has consumed.
Result Reason	This field can be used to provide additional context about a package consumption calculation.

To revert to the previous view, click **Show package consumption summary** below the table.

License Position Management

After you review the license consumption for Named Users and SAP packages, you have the following options:

- Amend the optimal license position, by navigating to the respective rule, editing it (or creating a copy and editing it), and then recalculating the license position to reflect the changes. For more information, see Recalculating the Optimal License Position.
- Release recommendations and review them to make them available to the SAP Admin module for remediation. For more information, see Releasing Recommendations to the SAP Admin Module and Reviewing and Processing Released Recommendations, respectively.
  Remediation includes updating duplicate user records and changing assigned license types so that the optimizations will be reflected in the next current baseline import, and eventually the next LAW measurement that is sent to SAP.
- Archive the current license position. For more information, see Archiving the License Position.

- View recommendations that are currently under review. For more information, see Viewing Pending Recommendation Sets.
- View recommendations that have been made available to the SAP Admin module. For more information, see Viewing the Last Recommendation Set Sent to the SAP Admin Module.

Recalculating the Optimal License Position

If you have made changes that might affect your license position (such as modifying your active license rules, the user consolidation, the Duplicate User rules, package information, license ratio, or the settings for handling the over-consumption of license types), you can see immediately how the change impacts the optimal license position by recalculating it.

To recalculate the license position:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Recalculate license position**.

The page refreshes and the newly calculated license position will be displayed in the **User License Summary** and **Package Consumption Summary** tabs.

Releasing Recommendations to the SAP Admin Module

By releasing recommendations to the SAP Admin module, you create a snapshot of the latest recommendations. This snapshot, or recommendation set, consists of license assignment recommendations and duplicate user recommendations. Only recommendations for SAP systems (as opposed to non-SAP systems) can be released to the SAP Admin module. After the set has been released to the SAP Admin module, it can be reviewed and processed. For more information, see Reviewing and Processing Released Recommendations.

All recommendation sets that have been released will be available on the **History** page. For more information, see License Position History.

There can be only one released recommendation set at a time. Before releasing another set, you need to process—accept or reject—the recommendation set that is currently released. For more information on processing recommendation sets, see Reviewing and Processing Released Recommendations.

Important: *Until the recommendations have been made available to the SAP Admin module (which involves releasing the recommendations and accepting them in SAP mode in FlexNet Manager Suite) and changes have been made to the SAP systems, the optimal license position is only theoretical and the current baseline license position remains the true position.*

To release recommendations for processing:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Release recommendations to SAP**.
3. In the **Create SAP Recommendation Set** dialog, type a name and a description (optional) for this recommendation set, then click **Create**.

The **Recommendations:** *recommendation set name* page is displayed, and you can view the details of the newly created recommendation set in the **License Assignment Summary** section (available after clicking on **Show user license recommendations** below the grid).

After you released a recommendations set, you need to review and process (accept or reject) the recommendations. To process the set immediately, complete the procedure under Reviewing and Processing Released Recommendations. If you do not want to process the set at this time, you can return to it later. To do so, click **License Position** in the navigation bar and select **Current Position**. Then click **Review pending recommendations** in the **Tasks** section on the **License Position** page.

Viewing Pending Recommendation Sets

When the **Review pending recommendations** link is visible in the **Tasks** section on the **License Position** page, it indicates that recommendations have been released for review to the SAP Admin module, but that these recommendations have not yet been accepted or rejected.

To view pending recommendation sets that are under review:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Review pending recommendations**.

The **Recommendations:** *recommendation set name* page displays the recommendation set, where you can accept or reject recommendations. For more information, see Reviewing and Processing Released Recommendations.

Viewing the Last Recommendation Set Sent to the SAP Admin Module

The **View recommendations sent to SAP** link that is located in the **Tasks** section on the **License Position** page indicates that recommendations have been released to the SAP Admin module for review and were accepted. These recommendations are listed on the **History** page and have the status **Released**.

To view the last recommendation set that has been made available to the SAP Admin module:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **View recommendations sent to SAP**.

The **Recommendations:** *recommendation set name* page (part of the **History** section) displays the last recommendation set that has been made available to the SAP Admin module. For information on displaying all recommendation sets that have been released to the SAP Admin module, see License Position History.

Reviewing and Processing Released Recommendations

After you have released a set of recommendations (see Releasing Recommendations to the SAP Admin Module), you can review the recommendations and decide whether to accept or reject them:

- Accepted recommendations will be submitted to the SAP Admin module where an SAP administrator can update the SAP systems.

- Rejected recommendations will be deleted.

Both accepted and rejected recommendations will be listed on the **History** page.

You can only accept or reject entire recommendation sets, but not individual recommendations.

To review released recommendations:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Review pending recommendations**.

   The **Recommendations:** *recommendation set name* page displays the recommendation set that has been released.
3. Review the released recommendations. For information on the recommendation details, see License Consumption.
4. To accept or reject the recommendation set, click one of the following links:
   - **Accept recommendations**—Recommendations are submitted to the SAP Admin module where an SAP administrator can update the SAP systems.
   - **Reject recommendations**—Recommendations are deleted.

All processed recommendation sets will be listed on the **History** page. For more information, see License Position History.

Archiving the License Position

Archived license positions are saved and listed on the **History** page with the status **Archived**. They will not be released to the SAP Admin module. Archived license positions can contain recommendations both for SAP systems and non-SAP systems. For more information on the **History** page, see License Position History.

To archive recommendations:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Archive license position**.
3. In the **Create SAP Recommendation Set** dialog, type a name and a description (optional) for this recommendation set, then click **Create**.

The **History** page is displayed, and you can view the details of the archived license position set.

License Position History

The **History** page lists all recommendation sets that have been released for processing or that have been archived.

To access the **History** page, in FlexNet Manager Suite, click **SAP**, point to **License Position** and click **History**.

The grid on the **History** page contains the following information.

Column Name	Description
Name	The name of the recommendation set that was released.
Description	A description of the recommendation set that was released (optional).
Status	The status of the recommendation set: • **Released**—The recommendation set has been accepted and made available to the SAP Admin module for processing. • **Rejected**—The recommendation set has been rejected and will not be made available to the SAP Admin module. • **Archived**—The recommendation set has been saved. It will not be made available to the SAP Admin module.
Date Created	The date and time when the recommendation set was created.
Date Reviewed	The date and time when the recommendation set was reviewed.
Date Released	The date and time when the recommendation set was made available to the SAP Admin module for processing.
Created By	The user who created the recommendation set.
Last Updated	The date and time when the recommendation set was last updated.
Released By	The user who made the recommendation set available to the SAP Admin module.
Reviewed By	The user who reviewed the recommendation set.
Updated By	The user who updated the recommendation set.

On the **History** page, you can do the following:

- View details of released recommendation sets to use them as reference for future optimization processes. For more information, see Viewing the License Position History.
  It is not possible to process recommendation sets on this page. For information on processing recommendation sets, see Reviewing and Processing Released Recommendations.
- Delete unwanted recommendation sets. For more information, see Deleting Recommendation Sets from the License Position History.

FlexNet Manager Suite (On-Premises)

2024 R2

Viewing the License Position History

The **History** page enables you to see all recommendation sets that have been released for processing or that have been archived. You can review detailed information about each recommendation set, from a summary view to the individual recommendations.

To display details of released recommendation sets:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **History**.
2. On the **History** page, select the recommendation set that you want to view and click **View**. Alternatively, you can double-click the recommendation set.

The **Recommendations:** *recommendation set name* page is displayed, and you can view the details of the recommendation set.

Deleting Recommendation Sets from the License Position History

The **History** page enables you to see all recommendation sets that have been released for processing or that have been archived. You can delete any unwanted recommendation sets from the license position history.

To delete recommendation sets from the license position history:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **History**.
2. On the **History** page, select the recommendation set that you want to delete and click **Delete**.
3. In the **Delete recommendation set** dialog, confirm by clicking **Delete**.

10

The SAP Admin Module

The SAP Admin module is an SAP application that helps SAP administrators to manage their SAP license assignments.

You can access the Main menu of the SAP Admin Module of FlexNet Manager for SAP Applications using the transaction /n/LICMAN/START. In SAP, a transaction cannot start with a slash ("/"). Therefore, always use the command `/n` before /LICMAN/START to reset the dialog and start FlexNet Manager for SAP Applications.

Main Menu Items in the SAP Admin Module

The Main menu is the initial interface of the SAP Admin module.

In the Main menu of the SAP Admin module, you can see and maintain your organization's system landscape (using the system tree on the left side of the screen). You can see a detailed list of your system landscape including various additional information (right side), for example, the system ID, client ID, and system description.

For information about the system landscape in the SAP Admin module, see The System Landscape in the SAP Admin Module.

Table 8: Menu items in the Main menu of the SAP Admin module

Menu	Description
Reporting	Contains the following analyses: • Analyze which users are active on the selected systems. See Logon Evaluation Report. • Optimize the quality of your user data using the User Data Validation report. See User Data Validation Report. • Import and process recommendations made by FlexNet Manager Suite. See Remediation in the SAP Admin Module.
Measurement/ LAW	Simulation of a system measurement and detailed output of LAW results lists. Upload of LAW measurements into the SAP Admin Module of FlexNet Manager for SAP Applications to enable use of the Statistics feature. For more information, see System Measurement in the SAP Admin Module.

Menu	Description
Statistics	Current contracts and measurement data can be evaluated using graphics and tables. For more information, see Statistics in the SAP Admin Module.
Packages	Measurement and definition of specific rules for alerts when usage occurs or in case of significant changes in the usage on selected packages. For more information, see SAP Package Measurement.
Activity Checks	Provides functionality to define and execute activity checks to notify you when SAP usage activity falls outside of specific parameters. From this menu item, you can also view the results of activity checks that have been executed. For more information, see Activity Checks.
Administration	Enables customization of FlexNet Manager for SAP Applications, such as: • Manage your license contracts. See SAP License Contract Information in the SAP Admin Module. • Under **Customer Reports**, you can provide definitions of special reports. These can be particular developments, standard SAP functions, or client-specific FlexNet Manager for SAP Applications add-ons. See Customer Reports.
Extras	Enables the display of client-specific reports, if applicable. See Customer Reports.

The System Landscape in the SAP Admin Module

The system landscape in the SAP Admin module shows all of your organization's SAP systems.

A system landscape represents your SAP systems according to your organization's individual requirements. A system landscape can contain several SAP Admin module systems, with each SAP Admin module being connected to several dependent SAP systems.

Although it is possible to have multiple system landscapes in FlexNet Manager Suite, you can have only one system landscape in each SAP Admin module. Having multiple system landscapes in FlexNet Manager Suite might be useful in simulation scenarios, where one landscape serves as the "production" landscape, and additional landscapes are used for running simulations.

When you set up the SAP Admin module for the first time, you need to import the system landscape from FlexNet Manager Suite. Only the SAP systems that are connected to the corresponding SAP Admin module are imported from FlexNet Manager Suite. For more information, see Importing a System Landscape from FlexNet Manager Suite.

You should regularly synchronize the system landscape in the SAP Admin module with the corresponding system landscape in FlexNet Manager Suite. Some features, such as activity checks and package measurements, are available only in the SAP Admin module, and you may need to target specific SAP systems and system groups when performing these actions. For more information about synchronizing the system landscape, see Synchronizing a System Landscape in the SAP Admin Module with FlexNet Manager Suite.

For information on how to set up a system landscape in FlexNet Manager Suite, see System Landscape Setup.

System Types in the SAP Admin Module

In the system landscape, the icon to the left of the system name indicates the system type.

The string to the right of the icon indicates the system ID and the client number.

Table 9: System type icons

Icon	Description
	Virtual root of the system landscape
	System group
	Active system
	Active system with a correct RFC destination, but insufficient user authorization. The user should have the role /LICMAN/SATELLITE assigned or a custom role with similar authorizations.
	System with an incorrect RFC destination
	System without an RFC destination

Information in the System Landscape List View

The system landscape list view, which displays as a table on the right side of the main screen in the SAP Admin module, provides detailed information about each system or system group.

Table 10: Information in the system landscape list view

Column	Description
System ID	Three-character identifier that identifies the SAP system.
Client	SAP client number.
System Number	The system number specifies the communication service used in this system.
System Description	Description of the system as entered on the **Create New System** page in SAP mode in FlexNet Manager Suite.
RFC Destination	The system's RFC destination. You provide this information when you create a new system in SAP mode in FlexNet Manager Suite.
Installation Number	The system's installation number that is registered with SAP. This data is automatically imported when the system is created.
Flexera FlexNet Manager Release	Shows the FlexNet Manager for SAP Applications release that is currently installed. This data is automatically imported when the system is created.
Dialog RFC Destination for Updates	RFC destination that forces a user to login to the system before making any changes. You can set the dialog RFC destination in the **Administration** menu under **Set up Dialog RFC Destinations**.

Column	Description
CUA Controlled Users	The column shows a check mark if the users on this system are controlled by a Central User Administration (CUA) central system. For information on CUA central systems, see Central User Administration. If this column shows a check mark, the **CUA RFC Destination** column shows the RFC destination of the CUA central system.
Model View	Indicates the CUA model view, if applicable.
CUA Central System	Indicates whether the system is a Central User Administration (CUA) central system. The column shows a check mark if you marked this system as a CUA central system in the **Maintain RFC Assignments** grid. For information on CUA central systems, see Central User Administration.
CUA RFC Destination	This field shows the RFC destination of the CUA central system, if the system is a CUA central system, or if its users are controlled by a CUA central system. For information on CUA central systems, see Central User Administration.
Dialog RFC of CUA Central System	Displays the RFC destination of the CUA central system that forces a user to log on to the system before making any changes.
HR System	If you set an HR system, the HR system's RFC destination displays here.
System Status	Indicates whether the system is active (A), inactive (I), or excluded (E).
SAP Admin Module	Displays a check mark if this is an SAP Admin module system. No check mark indicates that the system is a dependent SAP system.
S/4HANA	Displays a check mark if this is an SAP S4/HANA system. No check mark indicates that the system is a classic SAP Business Suite system.

Setup and Maintenance of Landscapes and RFC Destinations

RFC destinations need to be correctly defined for each system in the SAP Admin module to enable processing of license-type recommendations and updating of user source records in the SAP systems.

In the system landscape, systems with missing RFC destinations have a red icon next to them. Communication with systems that do not have a valid RFC destination is not possible.

The inital setup of RFC destinations includes the following tasks:

- Importing a system landscape from FlexNet Manager Suite
- Synchronizing a system landscape with FlexNet Manager Suite
- Resetting a system landscape

The general maintenance of RFC destinations includes the following tasks:

- Adding RFC destinations
- Modifying RFC destinations
- Testing RFC destinations

Many of the tasks listed above use the **Maintain RFC Assignments** grid. For more information about this grid, see The Maintain RFC Assignments Grid.

Importing a System Landscape from FlexNet Manager Suite

When you set up the SAP Admin module for the first time, you need to import the system landscape from FlexNet Manager Suite.

You need appropriate authorizations (equivalent to those in the role /LICMAN/ADMIN_MODULE) to import a system landscape from FlexNet Manager Suite into the SAP Admin module and to create RFC connections to SAP systems.

Although it is possible to have multiple system landscapes in FlexNet Manager Suite, you can import only one system landscape into the SAP Admin module. After you have imported the system landscape from FlexNet Manager Suite, the **Import System Landscape** button is unavailable.

RFC destinations can only be saved if the RFC destinations exist in the system and if they have been correctly assigned to the appropriate system.

To import a system landscape from FlexNet Manager Suite:

1. Open the SAP Admin module.
2. Click **Import System Landscape**.

   A dialog displays all system landscapes that are available in FlexNet Manager Suite.
3. Select the system landscape that you want to import into the SAP Admin module and click **Continue** or press **Enter**.

   The **Maintain RFC Assignments** grid displays the available systems and related system information, based on the information that was imported from FlexNet Manager Suite. For information on the details that are available in this grid, see The Maintain RFC Assignments Grid.
4. Verify the system information.
5. Click **Save RFC Destinations**.

Add any missing RFC destinations by following the procedure that is described under Adding RFC Destinations.

Synchronizing a System Landscape in the SAP Admin Module with FlexNet Manager Suite

You should regularly synchronize the system landscape in the SAP Admin module with the corresponding system landscape in FlexNet Manager Suite. You do this by using the **Synchronize System Landscape** button in the SAP Admin module, which is located directly above the system landscape. This button is enabled only if changes have been made to a system landscape in FlexNet Manager Suite. If no data is available for import, this button is unavailable.

When you synchronize the system landscape in the SAP Admin module with FlexNet Manager Suite for the first time, and there are multiple landscapes in FlexNet Manager Suite, you will be prompted to choose the landscape that you want to manage in the SAP Admin module.

To synchronize the system landscape in the SAP Admin module with the corresponding landscape in FlexNet Manager Suite:

- Open the SAP Admin module and click **Synchronize System Landscape**.

Resetting a System Landscape in the SAP Admin Module

The Reset System Landscape functionality enables you to synchronize your system landscape in the SAP Admin module with another landscape in FlexNet Manager Suite (for example, in the event that you re-built your FlexNet Manager Suite installation).

Caution: *When you reset a system landscape, the system details that were previously entered in the SAP Admin module (such as RFC destinations, and dialog RFC destinations) are no longer available.*

To reset a system landscape in the SAP Admin module:

1. Open the SAP Admin module, click **Administration**, and select **Customizing**.
2. In the **Extras** menu, click **Reset System Landscape**. In the dialog box, click **Yes** to continue.
3. Close the SAP Admin module, and then restart it.
4. Open the Main menu of the SAP Admin module.

   The Main menu displays the **Import System Landscape** button.

You can now import a system landscape from FlexNet Manager Suite. To do so, follow the steps described under Importing a System Landscape from FlexNet Manager Suite.

Adding RFC Destinations

You can manually create an RFC destination for systems that cannot use an existing RFC destination.

When you first import a system landscape, you will usually find that no RFC destinations are provided in the **Maintain RFC Assignments** grid. You can add the RFC destinations directly in SAP using the transaction SM59, in which case you need to enter all system details manually. Alternatively, FlexNet Manager for SAP Applications offers a shortcut to this transaction — the button **Create RFC Destination** is located directly above the grid. Clicking **Create RFC Destination** also starts SM59, but the values that were imported from FlexNet Manager Suite are used to populate some of the fields (for example, server, system number, and client), which speeds up the creation of RFC destinations.

For information on the Maintain RFC Assignments grid, see The Maintain RFC Assignments Grid.

To add an RFC destination in the SAP Admin module:

1. Open the SAP Admin module.
2. Open the **Maintain RFC Assignments** grid.

   If you just imported a system landscape from FlexNet Manager Suite, this grid will already be open. Otherwise, in the system landscape, point to **Administration** and click **Maintain RFC Assignments**.

3. Select the system whose RFC destination you want to add, and click **Create RFC Destination**.
4. In the next dialog, enter the RFC destination, and click **Continue**.
5. In the **RFC Destination** *name* screen, add the user name and password and other details as required.
6. For more information on the properties in this screen, refer to the SAP documentation.
7. Click **Save**.

The changes that you made in SM59 are transferred to the SAP Admin module and the RFC destination details are updated accordingly.

Upon saving the RFC destinations, FlexNet Manager for SAP Applications automatically verifies if the RFC destinations are correct. For information about testing RFC destinations, see Testing RFC Destinations.

Modifying RFC Destinations

You may need to modify RFC destination details for systems—for example, when the password for the RFC user was changed in one of the dependent SAP systems. In this case, the **RFC Status** column in the **Maintain RFC Assignments** grid shows a red status, alerting you to the RFC destination that is not working properly.

To modify RFC destination details in the SAP Admin module:

1. Open the SAP Admin module.
2. In the system landscape, point to **Administration** and click **Maintain RFC Assignments**.
3. Select the system whose RFC destination you want to modify, and click **Modify RFC Destination**.

   The SAP transaction SM59 is called. The fields in the **RFC Destination** *name* screen are populated with the information that was already saved for the RFC destination.
4. Modify the configuration information as required. For more information on the properties in this screen, refer to the SAP documentation.
5. Click **Save**.

Upon saving the RFC destinations, FlexNet Manager for SAP Applications automatically verifies if the RFC destinations are correct. For information about testing RFC destinations, see Testing RFC Destinations. The changes that you made in SM59 are transferred to the SAP Admin module and the RFC destination details are updated accordingly.

Testing RFC Destinations

You can test all RFC destinations in the SAP Admin module in one step. This enables you to identify and correct RFC destinations that do not function properly. FlexNet Manager for SAP Applications shows a color-coded status for every RFC destination along with a possible error cause for incorrect RFC destinations.

To test RFC destinations in the SAP Admin module:

1. Open the SAP Admin module.
2. In the system landscape, point to **Administration** and click **Maintain RFC Assignments**.

3. Click **Test RFC Destinations**.

When the test is complete, the **RFC Status** column shows whether the RFC destination is working properly (green status) or not (red status). The **RFC Status Details** column displays additional information that might help you resolve any errors with the RFC destination, if applicable.

The Maintain RFC Assignments Grid

Use the **Maintain RFC Assignments** grid to add or modify an RFC destination, or to define an SAP system as CUA central system.

If you just imported a system landscape from FlexNet Manager Suite, the **Maintain RFC Assignments** grid will already be open. Otherwise, in the system landscape, point to **Administration** and click **Maintain RFC Assignments**.

Table 11: SAP system information in the Maintain RFC Assignments grid

Column	Description
System ID	Three-character identifier that identifies the SAP system.
Client	SAP client number.
Service	The number specifies the communication service used in this system.
System Description	Description of the system as entered on the **Create New System** page in SAP mode in FlexNet Manager Suite, or as provided on the inventory beacon when the connection to the relevant SAP system was created.
RFC Destination	During the import of the system landscape, FlexNet Manager for SAP Applications tries to identify the existing RFC destinations for the imported systems. This field shows the RFC destination that is suggested for the relevant system. Review the RFC destination, and change it, if it is not correct. In the RFC destination, a user with the role /LICMAN/SATELLITE or a similar set of authorizations must have been defined. ***Important:*** *If no RFC destination is provided for a system, recommendations for this system will not be processed.*
User Name	The user account that should be used to open the RFC connection to the system.
RFC Status	Indicates whether the RFC destination is working properly (green status) or not (red status).
RFC Status Details	Shows a message as to whether the RFC destination is working properly. If the RFC destination is not functioning, the message provides information about the possible cause.
Dialog RFC Destination for Updates	RFC destination that forces a user to login to the system before making any changes. You can set the dialog RFC destination in the **Administration** menu under **Set up Dialog RFC Destinations**.
Installation Number	The system's installation number that is registered with SAP. This data is automatically imported when the system is created.

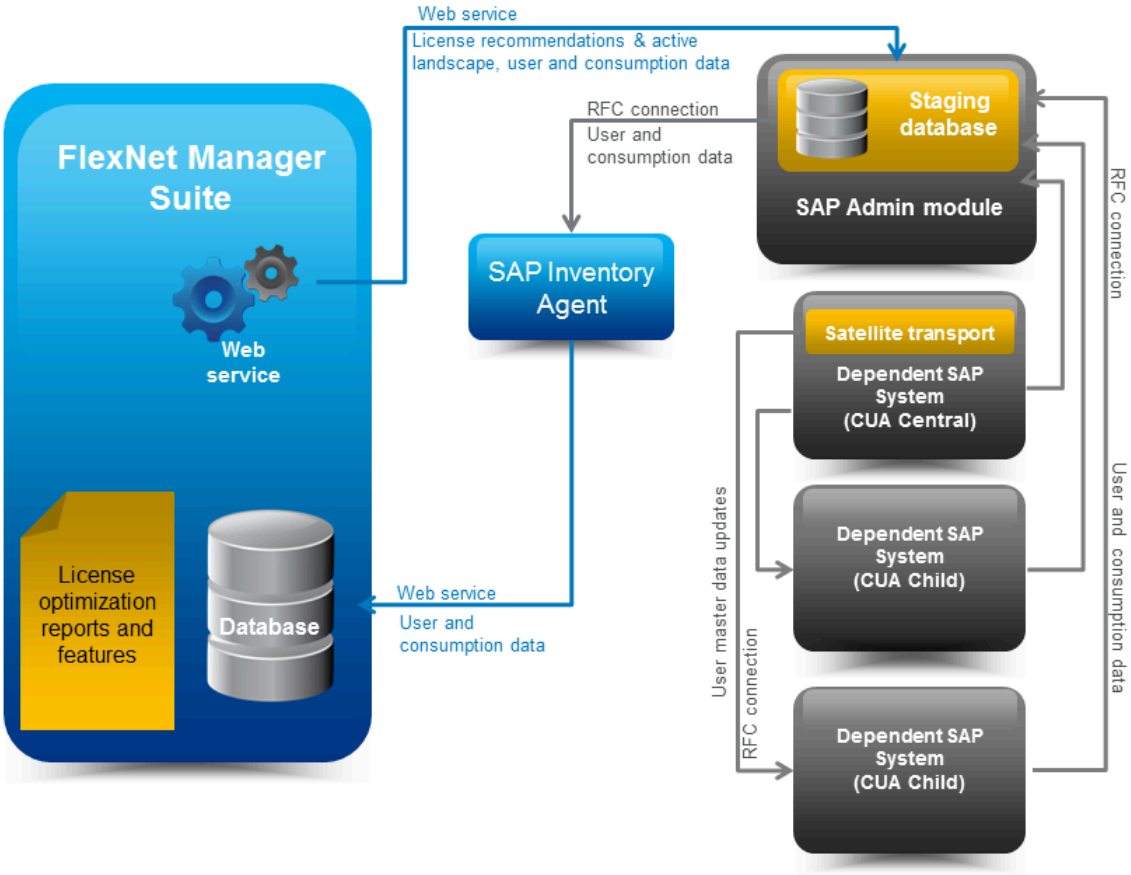
Column	Description
CUA Controlled Users	The column shows a check mark if the users on this system are controlled by a Central User Administration (CUA) central system. For information on CUA central systems, see Central User Administration. If this column shows a check mark, the **CUA RFC Destination** column shows the RFC destination of the CUA central system.
Model View	Indicates the CUA model view, if applicable.
CUA Central System	Indicates whether the system is a Central User Administration (CUA) central system. The column shows a check mark if you marked this system as a CUA central system in the **Maintain RFC Assignments** grid. For information on CUA central systems, see Central User Administration.
CUA RFC Destination	This field shows the RFC destination of the CUA central system, if the system is a CUA central system, or if its users are controlled by a CUA central system. For information on CUA central systems, see Central User Administration.
Dialog RFC of CUA Central System	Displays the RFC destination of the CUA central system that forces a user to log on to the system before making any changes.
HR System	If you set an HR system, the HR system's RFC destination is displayed here.
FNM Release	Shows the FlexNet Manager for SAP Applications release that is currently installed. This data is automatically imported when the system is created.
SAP Admin Module	Displays a check mark if this is an SAP Admin module system. No check mark indicates that the system is a dependent SAP system.

Central User Administration

The Central User Administration (CUA) enables you to maintain the user primary records centrally in one SAP system (SAP refers to these as the "user master records").

The system that is used to maintain the user primary records is usually referred to as the CUA central system. Any changes that are made to the user primary records on the CUA central system are automatically distributed to the connected SAP systems (called child system in the following diagram).

Figure 5: Data flow from FlexNet Manager Suite to the SAP systems when using CUA



If your SAP landscape uses CUA, you need to specify the CUA central system in the SAP Admin module. When an SAP administrator makes changes to user primary data in the SAP Admin module, FlexNet Manager for SAP Applications sends these changes to the CUA central system, which distributes them to the connected SAP systems.

Prerequisites for using CUA:

- The **AdminModule** transport and the **Role** transport must be imported on the SAP Admin Module system.
- The **Satellite** transport and the **Role** transport must be imported on the SAP CUA Central system. If the CUA system is the Admin module, you don't need to import the **Satellite** transport because the **AdminModule** transport is sufficient.
- The **Satellite** transport and the **Role** transport on the CUA child systems are optional.
- The RFC connections must meet the following requirements:
  - The name of the RFC connection between the SAP Admin module and the CUA central system must be the same name as the logical system of the CUA central system.
  - The name of an RFC connection between the CUA central system and any CUA child system within the Admin module must be a logical system name or a name that is being used in the CUA landscape.
  - The RFC user must have the user role **/LICMAN/SATELLITE** or similar authorizations.

Specifying the CUA Central System

The Satellite transport must be installed on the CUA central system. In addition, an RFC destination must have been assigned to the CUA central system.

When you specify the CUA central system in the SAP Admin module in the **Maintain RFC Assignments** grid, the grid is updated with the following details:

- **CUA Controlled Users**: A check mark in this column indicates that the system is controlled by a CUA central system.
- **CUA Central System**: A check mark in this column indicates that the system is the CUA central system.
- **CUA RFC Destination**: This column displays the RFC destination of the CUA central system for all systems that are controlled by that CUA central system.

For more information on the **Maintain RFC Assignments** grid, see The Maintain RFC Assignments Grid.

To specify the CUA central system:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration**, then click **Maintain RFC Assignments**.
3. In the **Maintain RFC Assignments** grid, select the row with the CUA central system.
4. In the menu bar, point to **CUA Settings**, and click **Set as CUA Central System**.
5. Click **Save**.

Clearing the CUA Settings

To clear the CUA settings:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration**, then click **Maintain RFC Assignments**.
3. In the menu bar, point to **CUA Settings**, then click **Clear CUA Settings**.

HR System Setup

For every system connected to FlexNet Manager for SAP Applications via the SAP Admin module, you can define an HR system.

The information from the HR system can be used to provide additional information in the Logon Evaluation Report.

Global HR System Setting

You can set a global HR system in the Customizing section. This setting is overridden by HR system settings for individual SAP systems and system groups.

To set an HR system globally for all SAP systems in a landscape:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration** and then **Customizing**.
3. In the **Technical Settings** section, for **RFC Destination of HR System**, type the RFC destination of the HR system.
4. Click **Save**.

HR System for Individual SAP Systems

You can only set an HR system for systems with a valid RFC destination.

The HR system setting for individual SAP systems overrides the HR system setting for SAP system groups.

To set an HR system for an individual SAP system:

1. Open the SAP Admin module.
2. In the system landscape, right-click the system name and select **Set HR System**.
3. In the **Set HR System** dialog, type the RFC destination of the HR system and click **Continue**.

The HR system's RFC destination displays in the **HR System** column of the system landscape list view.

HR System for SAP System Groups

You can only set an HR system for systems with a valid RFC destination.

When you set an HR system for an entire system group, it is valid for all systems in the group, except where an HR system has been set explicitly for a single system.

To set an HR system for an SAP system group:

1. Open the SAP Admin module.
2. In the system landscape, right-click the system group name and select **Set HR System**.
3. In the **Set HR System** dialog, type the RFC destination of the HR system and click **Continue**.

The HR system's RFC destination displays in the **HR System** column of the system landscape list view.

Removing an HR System

You can remove an HR system for individual SAP systems or system groups.

To remove an HR system for an SAP system or system group:

1. Open the SAP Admin module.
2. In the system landscape, right-click the system or system group name and select **Set HR System**.

3. In the **Set HR System** dialog, remove the RFC destination and click **Continue**.

The HR system's RFC destination no longer displays in the **HR System** column of the system landscape list view.

Dialog RFC Destinations in the SAP Admin Module

FlexNet Manager for SAP Applications can automatically create or delete logical RFC destinations.

Dialog RFC Destinations are created with reference to already existing RFC destinations in FlexNet Manager for SAP Applications and are used for the updating functions of the user primary data. These RFC destinations are also used for all functions that require a user of the type Dialog. This enforces the logon of the current user into the dependent SAP system, ensuring that all changes are recorded for this respective user in the change history.

There are two ways to set up Dialog RFC destinations:

- In the **Set up Dialog RFC Destination** screen (also called the Wizard option). For information about the procedure, see Setting up Dialog RFC Destinations using the Wizard.
- In the **Change Dialog RFC Destination** dialog. If you use this option, ensure that you also create the Dialog RFC destination using the transaction SM59. For information about the procedure, see Setting up Dialog RFC Destinations Manually.

Setting up Dialog RFC Destinations using the Wizard

When you set up a Dialog RFC destination using the **Set up Dialog RFC Destinations** screen, the Dialog RFC destination is created based on the information that is already available in the screen, and the Dialog RFC destination is assigned to the system. There is no need to call the transaction SM59.

To set up a Dialog RFC destination in the SAP Admin module using the Set up Dialog RFC Destinations dialog:

1. Open the **Set up Dialog RFC Destinations** screen by doing one of the following:
   - In the Main menu of the SAP Admin module, click **Administration** and select **Set up Dialog RFC Destinations**.
   - In the system landscape, right-click the system whose Dialog RFC destination you want to set up. Click **Dialog RFC Destinations** and select **Wizard**.
2. In the **Set up Dialog RFC Destinations** screen, select the systems for which you want to set up Dialog RFC destinations.
3. Under **Action**, select **Create**.
4. Under **Create Options**, in the **Description** field, type a description for the connections to be created (default: **DLC GENERATED**).
5. In the **Suffix for Dialog RFC Dest.** field, type a suffix that should be appended to the destination.
6. If you want to use a specific layout, enter the name of the saved layout in the **Layout** field.
7. Click **Execute** or press **F8**.

Setting up Dialog RFC Destinations Manually

When you set up a Dialog RFC destination manually in the SAP Admin module, you must afterward call the transaction SM59 and create the Dialog RFC destination with the same name there or use an existing Dialog RFC destination.

To manually set up a Dialog RFC destination in the SAP Admin module:

1. In the system landscape, right-click the system whose Dialog RFC destination you want to set up. Click **Dialog RFC Destinations** and select **Manually**.
2. In the **Change Dialog RFC Destination** dialog, provide the following information:
   - **Destination** — Enter the RFC destination.
   - **Installation No.** — Enter the system's installation number that is registered with SAP.
   - **System ID** — Enter the three-character identifier that identifies the SAP system.
   - **Client** — Enter the SAP client number.
   - **Dialog RFC Dest.** — Enter the Dialog RFC destination.
3. Click **Continue** or press **Enter**.

Removing Dialog RFC Destinations

If required, you can remove Dialog RFC destinations.

To remove a Dialog RFC destination in the SAP Admin module:

1. Open the **Set up Dialog RFC Destinations** screen by doing one of the following:
   - In the Main menu of the SAP Admin module, click **Administration** and select **Set up Dialog RFC Destinations**.
   - In the system landscape, right-click the system whose Dialog RFC destination you want to set up. Click **Dialog RFC Destinations** and select **Wizard**.
2. In the **Set up Dialog RFC Destinations** screen, select the system whose Dialog RFC destination you want to remove.
3. Under **Action**, select **Delete**.
4. Click **Execute** or press **F8**.

User Data or License Data Changes

The **Change User Data**, **User Maintenance**, and **Change License Data** buttons enable you to change user data or license data directly in a report.

For convenience, most changes that must be made to the user data or license data can be made directly within the report screen using the buttons or by calling the user maintenance transaction (SU01). Changes are made in all

connected SAP systems.

Usage of these buttons should be carefully considered, depending on whether the SAP Admin module is connected to an SAP NetWeaver® Identity Management (IdM) component. For more information on the functionality of the individual buttons, see the following corresponding sections.

Note: *The functionality that is described in this section is not available in the Process License Recommendations report. This report provides actions that are designed for optimal processing of recommendations. This includes changing a license type and retiring a user, but not changing arbitrary user fields or running transaction SU01.*

Changing User Data Directly in FlexNet Manager for SAP Applications

In SAP Admin module reports, you can change user data of one or more users using the **Change User Data** button.

The functionality of the **Update User Data** button depends on whether the SAP Admin module is connected to IdM. If IdM is used, the IdM settings in the Customizing section will determine which changes are sent to IdM and which changes are sent directly to the SAP systems. If IdM is not used, the changes are directly sent to the SAP systems.

Tip: *This function is especially useful if you want to modify data of more than one user at a time.*

To modify user data on the target systems:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select a report from the menu. Enter the required information in the evaluation screen and execute the report.
3. Select the user whose user data you want to modify. (Hold down the **Ctrl** key to select several users at a time.)
4. Click **Change User Data** to modify the user data.
5. In the **Selection** dialog, select the fields that you want to modify and click **Continue**.
6. In the **Enter Values** dialog, enter the new values and click **Continue**. The values have now been transferred to the FlexNet Manager for SAP Applications report.
7. To submit your changes into the SAP clients, select the rows that you want to update and click **Update User Data**

Changing User Data Using the Transaction SU01

In SAP Admin module reports, you can change the data of a single user with the **User Maintenance** button.

Instead of using the procedure described in the section Changing User Data Directly in FlexNet Manager for SAP Applications, you can make required changes to the user data directly by selecting a user and clicking **User Maintenance**. This calls the transaction SU01 on the target system for user maintenance. After you make your changes, you can refresh the view by clicking **Refresh**.

Important: *If the SAP Admin module is connected to IdM, it is strongly recommended not to make changes to the user*

*data using the **User Maintenance** button, because changes are not sent to IdM, but directly to the SAP target systems.*

To modify user data using the transaction SU01:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select a report from the menu. Enter the required information in the evaluation screen and execute the report.
3. Select the user whose user data you want to modify and click **User Maintenance**.
4. In the **User Maintenance: Initial Screen**, click the **Change** button.
5. Make your changes. (Refer to the SAP documentation for more information.)

Initializing User Data Fields

In SAP Admin module reports, you can initialize the data of one or more users at a time.

The functionality of the **Update User Data** button depends on whether the SAP Admin module is connected to IdM. If IdM is used, the IdM settings in the Customizing section will determine which changes are sent to IdM and which changes are sent directly to the SAP systems. If IdM is not used, the changes are directly sent to the SAP systems.

To initialize user data fields on the target systems:

1. Follow step 1 through step 4 described in Changing User Data Directly in FlexNet Manager for SAP Applications.
2. In the **Selection** dialog, select the fields that you want to initialize and click **Continue**.
3. In the **Enter Values** dialog, leave the fields empty and click **Continue**.
4. In the **Confirmation Prompt** dialog, click **Continue**. The changes are transferred to the FlexNet Manager for SAP Applications report.
5. To submit your changes into the SAP clients, select the rows that you want to update and click **Update User Data**.

Changing License Data Directly in FlexNet Manager for SAP Applications

In SAP Admin module reports, you can change the license data of one or more users using the **Change License Data** button.

This function is especially useful if you want to modify data of more than one user at a time.

To modify license data on the target systems:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select a report from the menu. Enter the required information in the evaluation screen and execute the report.

3. Select the user whose license data you want to modify. (Hold down the **Ctrl** key to select several users at a time.)
4. Click **Change License Data** to modify the license data.
5. In the **Selection** dialog, select which changes you want to make to the license data of the selected users. You can change the following fields:
   - To modify the license type, select **New License Type**.
   - If you have a license type with special version (Cyrillic, Arabic, double-byte) or a license type with a country-specific surcharge, select **New License Type** and **Special Version**, or **New License Type** and **Country Surcharge**.
   - If you want to enter a license type 04 (called “Substitute”), select **New License Type**, **Substitute**, **Substitute Valid from**, and **Substitute Valid to**.
   - If you want to enter a license type 11 (called “Multi-Client/Multi-System”), select **New License Type**, **Name**, **System**, and **Client**.
6. When you are finished, click **Continue**.

   An entry screen with the corresponding selected fields displays.
7. Enter the new values and confirm. The values have now been transferred to the FlexNet Manager for SAP Applications report.
8. To submit your changes into the SAP clients, select the rows that you want to update and click **Update License Data**.

Changing License Data Using the Transaction SU01

In the SAP Admin module, you can change the license data directly in a report by selecting a user and clicking **User Maintenance**.

Clicking **User Maintenance** calls the transaction SU01 on the target system for user maintenance. After you make your changes, you can refresh the view by clicking **Refresh**.

To modify license data using the transaction SU01:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select a report from the menu. Enter the required information in the evaluation screen and execute the report.
3. Select the user whose license data you want to modify and click **User Maintenance**.
4. In the **User Maintenance: Initial Screen**, click the **Change** button . Make your changes (refer to the SAP documentation for more information).

Initializing License Data Fields

In SAP Admin module reports, you can initialize the license data of one or more users at a time.

To initialize license data fields on the target systems:

1. Follow step 1 through step 4 described in Changing License Data Directly in FlexNet Manager for SAP Applications.
2. In the **Selection** dialog, select the fields that you want to initialize and click **Continue**.
3. In the **Enter Values** dialog, leave the fields empty and click **Continue**.
4. In the **Confirmation Prompt** dialog, click **Continue**. The changes have now been transferred to the FlexNet Manager for SAP Applications report.
5. To submit your changes into the SAP clients, select the rows that you want to update and click **Update License Data**.

Modifications of User and License Data

Depending on the method you use to change user and license data, you might need to reselect these amended users to send the user or license data changes to the SAP systems.

If you sort the ALV grid list in ascending order by license type (for example, license type 52) and then select the first 10 users and re-assign them to a different license type (for example, license type 91)—you modify the users' license data—then these 10 users are immediately positioned correctly in the list (moved to the lower area). However, the first 10 entries (the rows that previously contained the modified users) will still be selected. As a result, you cannot immediately update the amended users by clicking the **Update** button. You need to either re-select the appropriate items or update the entire list.

If you want to modify user data and license data for users directly in FlexNet Manager for SAP Applications, you need to do this in two separate steps (for example, first change the user data and update the user data, then change the license data and update the license data). If you do not update the data that you changed in one area (for example, user data), but make changes to another area (license data) and update those, the changes to the first area will be ignored when you want to update the data later.

Viewing User Data Modification Logs

If you want to check modifications that have been made to the user primary data from within the report screen, you can view a log (SAP transaction SLG1).

To view a log of user data modifications:

1. Perform one or more of the tasks described in the section User Data or License Data Changes.
2. Click **Log**. This corresponds to the SAP transaction SLG1.
3. In the **Analyze Application Log** screen, set the log parameters. For more information, refer to the SAP documentation.
4. Click **Execute** or press **F8**.

Counting Rows in Reports

You can count rows in reports and create subtotals using the **ALV Count** column.

The report results display in ALV grid lists. You can customize the order of the display, the sorting, and the selection of the columns. In addition, you can save display templates, form sums, and export data for further processing (for example, into Microsoft Excel format). For more detailed information, refer to the SAP documentation.

The report header shows the total number of rows of the report in brackets. The Logon Evaluation and User Data Validation reports contain an **ALV Count** column in the ALV grid to enable you to create subtotals of report rows.

To count rows in reports:

1. Execute the report. (Refer to the relevant section in this User Guide for more detailed information about the individual reports.)

   ***Example**: Click **Reporting**, then select **Logon Evaluation** from the menu. Execute the report.*

2. Sort the column that contains the data that you want to count (called column X in this procedure) in descending order.

   ***Example**: Select the **Cost Center** column and click the **Sort in Descending Order** button in the Application toolbar.*

3. For better visibility, position the **ALV Count** column and column **X** next to each other: Select the **ALV Count** column and drag it next to column **X**.

4. Select column **X** and the **ALV Count** column.

   ***Example**: Hold down the **Ctrl** key and select the **Cost Center** column and the **ALV Count** column.*

5. In the Application toolbar, click the **Total** button. Scroll to the bottom of the list. A yellow row has been added at the bottom and shows the total number of rows in the ALV grid.

6. Again, select column **X** and the **ALV Count** column.

   ***Example**: Hold down the **Ctrl** key and select the **Cost Center** column and the **ALV Count** column.*

7. In the Application toolbar, click the **Subtotals** button. Underneath each cost center group, a yellow line displays the subtotal of rows that make up the group.

SAP License Contract Information in the SAP Admin Module

With FlexNet Manager for SAP Applications, you can maintain and display the individual positions of the license contracts to create evaluations that show license utilization.

Combined with measurements from the LAW that you import into FlexNet Manager for SAP Applications, the SAP license contract information can be used to create license-utilization statistics.

For more information on license-utilization statistics, see Statistics in the SAP Admin Module. For information about

executing LAW measurements, see System Measurement in the SAP Admin Module.

Note: *Data about packages is not maintained together with the SAP license contract information because packages are charged based on usage.*

Specifying License Contract Data

To enter your license contract data:

1. Open the SAP Admin module.
2. Click the **Administration** menu, select **Customizing**, and click **License Contract Administration**.
3. Enter the relevant information:
   - **Contract Number** — Number of the license contract.
   - **Valid from Year** — The year when the contract starts to be valid.
   - **License Type** — The license type as specified in the contract.
   - **Special Version** — Special version, if specified in the contract (for example, Cyrillic, Arabic).
   - **Country Surcharge** — Any country-specific surcharges, if specified in the contract. Input the surcharge percentage as a number without the % sign.

   For more information on license types and special versions, open the **F4 Help**.
4. Click **Create** or press **F5**.
5. Provide the following information:
   - **Valid to Year** — End of the contract.
   - **Number of Licenses** — The number of licenses of the license type that you entered in the **License Type** field in step 3, as specified in the contract.
   - **Note** — Optional notes.
6. Click **Save**.

   The confirmation displays in the status bar.
7. To create the next license type for the contract, use **Display** and **Copy**, and then enter the data for the next license type.

Displaying License Contract Data

To display license contract data:

1. In the SAP Admin module, do one of the following:

- Click the **Administration** menu, select **Customizing**, and click **License Contract Administration**. In the **License Contract Administration** screen, click **List** to view all available license contract information.
- Click the **Administration** menu, select **Customizing**, and click **License Contract Administration**. In the **License Contract Administration** screen, click **List with Selection** to bring up a screen with selection parameters. Enter the required parameters, for which you can also use variants, and click **Execute**.

Modifying License Contract Data

To modify your license contract data:

1. Open the SAP Admin module.
2. Click the **Administration** menu, select **Customizing**, and click **License Contract Administration**.
3. Click **List** to display all available data.
4. Double-click the row you want to modify to display the corresponding position. Click the **Edit** button and make the desired modifications. Click **Save**.

Deleting License Contract Data

To delete license contract data:

1. Open the SAP Admin module.
2. Click the **Administration** menu, select **Customizing**, and click **License Contract Administration**.
3. Click **List** to display all available data.
4. To delete individual positions, highlight the rows that you want to delete (multiple selections are allowed) and click the **Delete** button .

Data Collection Using the Staging Database Monitor

Use the Staging Database Monitor to specify the data that the SAP Admin module should collect from its dependent SAP systems and to start the data collection.

Each SAP Admin module collects data from its dependent SAP systems using RFC-enabled functions. If the Satellite transport is installed on the dependent SAP system, user data is collected using the function /LICMAN/BS_READ_TABLE. If the Satellite transport is not installed on the dependent SAP system, the function RFC_READ_TABLE is used to collect the user data. Consumption data is collected using the function SWNC_COLLECTOR_GET_AGGREGATES (regardless of whether the Satellite transport is installed).

The collected data is stored in a staging database on the SAP Admin module system. You use the Staging Database Monitor to specify the type of data that is collected. The SAP Inventory Agent connects to the staging database and loads the data into the FlexNet Manager Suite database.

Collecting Data from Dependent SAP Systems

You can launch the data collection from the dependent SAP systems manually or by scheduling a job.

It is recommended that you schedule the Staging Database Monitor to run the data collection job a day before the SAP Inventory Agent reads the data from the SAP Admin module and loads it into the FlexNet Manager Suite database. For information on scheduling a background job, see Scheduling a Collection Job for the Staging Database Monitor. For information on data collection through the SAP Inventory Agent, see SAP Inventory Agent.

To specify the data that should be collected from dependent SAP systems:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration** and then **Staging Database Monitor**.

   The **Staging Database Monitor** interface displays, allowing you to specify the data collection criteria.
3. In the **Systems** section, select the dependent systems from which the data should be collected.
4. Optionally select the **Launch USMM remotely** check box to start the USMM remotely on the dependent SAP systems that are specified in the **Systems** field above.

   Launching the USMM ensures that current package-measurement and activity-checks data are available in the dependent SAP systems; this data can then be collected by the Staging Database Monitor.
   The USMM is only used on dependent SAP systems to start the system measurement. No data is sent to SAP.

   For information on best practices when using the USMM, see Best Practice when Using USMM.

   Important: *The **Launch USMM remotely** check box **must** be selected if you want to collect package data and activity checks data from system measurement results in dependent SAP systems.*
   If you do not want to use the USMM to generate the data, use the Packages and Activity Checks features (both available from the Main menu of the SAP Admin module). Data collected by the Packages and Activity Checks features is added to the staging database. For more information, see "SAP Package Analysis in the SAP Admin Module" and "Activity Checks" in the FlexNet Manager for SAP Applications User Guide PDF.

   Note: *This functionality cannot be launched remotely in FlexNet Manager Suite 2019 R1 or any earlier versions, if the remote system is based on the same or higher than these supported package versions:*
   SAP_BASIS:

   - *7.02 (SP21)*
   - *7.31 (SP23)*
   - *7.40 (SP20)*
   - *7.50 (SP11)*
   - *7.51 (SP06)*

- *7.52 (SP02).*

As a workaround, you can use the Activity Checks and Package Measurement features after finishing your data collection in the Staging Database Monitor. Please refer to Activity Checks and SAP Package Measurement in the FlexNet Manager for SAP Applications User Guide PDF for more details.

5. The **Data to collect** section lists all the data types you can collect. All data types are selected by default, so clear the check box for any data type you don't want to collect:

   a. **User Details** — Select this check box to collect user details from the dependent SAP systems. User details include user name, first and last name, license type, last logon date, user group, user type, email address, phone number, accounting number, validity dates, and cost center.

   b. **System Users (Type B)** — Select this check box to collect data for System users, along with data for other user types. Clear this check box to exclude the System user type from data collection.

      There are five different SAP user types, which are:

      - `Dialog (A)`
      - `System (B)`
      - `Communications Data (C)`
      - `Reference (L)`
      - `Service (S)`.

   c. **Role Data** — Select this check box to collect role data from the dependent SAP systems.

   d. **Objects** — Select this check box to collect object data (name and type of consumed objects) from the dependent SAP systems. Object types are `Report`, `Job`, or `Transaction`.

   e. **License Data** — Select this check box to collect license data from the dependent SAP systems.

   f. **Packages** — Select this check box to collect package measurement data from the dependent SAP systems.

      If current package measurement data is ***not*** available, then we recommended that you ***clear*** this check box. Package measurement data can be generated by executing the USMM (using the **Launch USMM remotely** check box) or using the Packages feature (available from the Main menu of the SAP Admin module.

   g. **Activity Checks** — Choose whether you want to use Activity Checks by selecting one of the following options:

      - If current activity-checks data is ***not*** available, then we recommended that you ***clear*** this check box. Activity checks data can be generated by executing the USMM (using the **Launch USMM remotely** check box) or using the Activity Checks feature (available from the Main menu of the SAP Admin module).
      - Select this check box to collect data for activity checks from the dependent SAP systems. This applies the default parameters used by the USMM for activity checks. This option checks the activity of all end-users to ensure that sufficient pauses in activity are recorded in two subsequent days. The default break duration is 28,800 seconds (8 hours). Please refer to *Activity Checks* in the FlexNet Manager for SAP Applications User Guide PDF for more details.

Important: *The Satellite transport must be installed on the dependent system for activity checks data collection.*

Note: *If you want to collect activity check data from a dependent system that runs SAP Basis release 4.6C, 6.2, or 6.4, you must start the data collection using the* ***Activity Checks*** *menu in the SAP Admin module. For systems running SAP Basis release 4.6C, 6.2, or 6.4, the Staging Database Monitor always returns a red status, even if the data collection using the* ***Activity Checks*** *menu was successful.*

a. **Consumption Data** — Select this check box to collect consumption data from the dependent SAP systems.

   By default, three months of consumption data will be collected. Use the following fields to refine the data collection period:

   a. **Consumption end date** — Enter the end date for the period of consumption data collection in the format `dd/mm/yyyy` or leave blank to use the current date.

   b. **No. months of consumption** —Enter the number of months that you want consumption data to be collected for. The default value is `3`. Although you can technically enter any number of months, most SAP systems will typically only support three months of consumption data.

b. **Module Data** — Select this check box if data on used SAP modules should be collected from the dependent SAP systems.

c. **RFC Data** — Select this check box to collect RFC data from the dependent SAP systems.

   By default, three months of data will be collected. Use the following fields to refine the data collection period:

   a. **RFC Data end date** —Enter the end date for the period of RFC data collection in the format `dd/mm/yyyy` or leave blank to use the current date.

   b. **No. months of RFC Data** — Enter the number of months to indicate for how long RFC data should be collected. The default value is `3`.

d. **Digital Access Data** — Select this check box if digital access data should be collected from the dependent SAP systems.

   By default, three months of data will be collected. Use the following fields to refine the data collection period Use the following radio button to set a different time period:

   - **No. months of Digital Access** — Select to collect digital access data for a specific number of months and then enter the number of months. The default value is `3`.
   - **Last Full Calendar Year (monthly)** — Select to collect digital access data that was generated in last full calendar year. The data will be monthly aggregated.
   - **Start Date** and **End Date** — Select to collect digital access data generated for a specific date rage and then enter then start and end date in the format `dd/mm/yyyy`. Leave the **End Date** blank to use the current date.

6. In the **Options** section, select the way you want to collect data:

   a. Choose the run method for collection from these options:

- **Run Online** — This is the default selection. Use this option if the functions that are called to facilitate the data collection should be executed online. It is recommended to select this option for the initial data collection, to ensure that data is successfully collected. If the data collection is working as expected, subsequent data collection can be run as a background task.
- **Run with "IN BACKGROUND TASK"** — Select this option if the functions that are called to facilitate the data collection should be run as a background task. It is recommended to select this option only after you ran an initial data collection using the **Run Online** option, to ensure that the data collection runs as expected.

b. **Use BAPI_USER_GET_DETAIL** — Choose the fastest way to collect the address, email address, and telephone number of users from these options:

- Leave this check box selected to enable FlexNet Manager Suite to call this routine to gather the user data.

Tip: *Best practice is to test both options to determine the fastest method of data collection for your enterprise.*

  - *Calling `BAPI_USER_GET_DETAIL` for each user may be slow when there is a large number of users in this dependent SAP system, and the network communication between the Admin Module system and this dependent SAP system is less than ideal.*
  - *Calling `BAPI_USER_GET_DETAIL` may be the most efficient option if there is a large amount data in table `ADR6` of this dependent SAP system, when it may reduce the memory usage and improve performance.*

- Clear this check box to enable FlexNet Manager Suite to gather the user data from table `USR21`, `ADR6` and `V_ADDR_USR` through `RFC_READ_TABLE`.

7. Click **Execute** or press **F8** to launch the data collection.

You can verify the status of the data collection on the **Staging Database Monitor - Data collection status** screen. After the data collection has completed, the SAP Inventory Agent can connect to the staging database and collect the data. The data is then loaded into FlexNet Manager Suite via RFC connection.

Best Practice when Using USMM

Follow this best practice when you remotely execute the USMM (using the **Launch USMM remotely** check box) to collect the latest package data or activity-checks data.

The USMM runs several jobs which can take some time to complete. Therefore, the Staging Database Monitor might not collect the latest package data or activity-checks data. To ensure that the latest data is collected, it is recommended to run the Staging Database Monitor in two steps.

This recommendation also applies to jobs that use the Staging Database Monitor.

To ensure that the latest data is collected:

1. Run the Staging Database Monitor with the **Launch USMM remotely** check box selected and all check boxes in the **Data to collect** section cleared. The USMM is executed and generates up-to-date package-measurement and

activity-checks data on the dependent SAP systems.

2. Run the Staging Database Monitor with the **Launch USMM remotely** check box cleared and the required check boxes in the section **Data to collect** selected (indicating the type of data that should be collected). The Staging Database Monitor collects the data as per your selection.

Scheduling a Collection Job for the Staging Database Monitor

You can automate the data collection using the Staging Database Monitor by scheduling a job.

To schedule the Staging Database Monitor to execute the data collection as a recurring job:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration** and then **Staging Database Monitor**.

   The **Staging Database Monitor** interface displays, allowing you to specify the data collection criteria.
3. In the **Systems** section, select the dependent systems from which the data should be collected.

   For information about the options on this screen, see the table under step 3 in topic Collecting Data from Dependent SAP Systems.
4. In the menu bar, click **Program** and select **Execute in Background**.
5. In the **Background Print Parameters** dialog, specify relevant values, if desired, or accept the default values.
6. Click **Continue** .
7. In the **Start Time** dialog, click **Date/Time**. Type in the date and time when the job should be started, or press **F4** to select the start date and time from the **Calendar** or **Choose Time** dialog, respectively.
8. At the bottom of the **Start Time** dialog, click **Period values**. In the **Period Values** dialog, click the desired option to specify how frequently the job should be executed. Click **Save** .

   The **Period Values** dialog is closed and you return to the **Start Time** dialog.
9. In the **Start Time** dialog, click **Save** .

   The **Start Time** dialog is closed and you return to the **Staging Database Monitor** screen. At the bottom of the screen, the message `Background job was scheduled for program /LICMAN/SD_MONITOR` confirms that the job has been scheduled successfully.

Data Collection Status

Use the **Staging Database Monitor - Data collection status** screen to verify if the data collection from the dependent SAP systems was successful.

If errors occur (yellow or red status), review the staging database logs for more information (see Staging Database Logs).

Table 12: Status of data collection from dependent SAP systems in the Staging Database Monitor

Option	Description
System ID	The dependent SAP systems from which the data was collected.
Client	The client from which the data was collected.
User	The user who executed the data collection.
Start date	The date when the data collection was launched.
Start time	The time when the data collection was launched.
System status	The system details are always collected online, regardless of whether the option **Run online** or **Run with "IN BACKGROUND TASK"** was selected in the **Staging Database Monitor** screen. Available values: • **Green**: The system could be reached, and the system details have been collected successfully. • **Red**: The system could not be reached, or system details could not be collected. This can be due to an incorrect RFC destination, insufficient user authorizations, or other errors.
System end time	The time when the data collection was completed.
USMM status	Available values: • : Execution of the USMM is ongoing. • **Green**: The USMM was executed. The resulting data is stored in SAP standard tables on the dependent SAP systems. • **Red**: The USMM could not be executed successfully. Ensure that the RFC user has sufficient authorizations to execute the USMM. If the check box **Launch USMM remotely** in the **Staging Database Monitor** screen was not selected, this field is blank.
USMM data end time	The time when the data collection using the USMM was completed. Some USMM processes are launched as jobs and therefore might take longer to complete.
User data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: User data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: User data collection failed. Ensure that the user has appropriate authorizations.
User end time	Indicates when collection of user data was completed. If data collection failed, the time is `00:00:00`.

Option	Description
Role data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Role data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Role data collection failed.
Role data end time	Indicates when collection of role data was completed. If data collection failed, the time is `00:00:00`.
Object data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Object data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Object data collection failed.
Object data end time	Indicates when collection of object data was completed. If data collection failed, the time is `00:00:00`.
License data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: License data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: License data collection failed.
License data end time	Indicates when collection of license data was completed. If data collection failed, the time is `00:00:00`.
Package data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Package data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Package data collection failed.
Package data end time	Indicates when collection of package data was completed. If data collection failed, the time is `00:00:00`.

Option	Description
Activity-checks data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Activity-checks data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Activity-checks data collection failed. For systems running SAP Basis release 4.6C, 6.2, or 6.4, the Staging Dabase Monitor always returns a red status. For these systems, activity-checks data must be collected using the **Activity Checks** menu.
Activity data endtime	Indicates when collection of activity-checks data was completed. If data collection failed, the time is `00:00:00`.
Consumption data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Consumption data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Consumption data collection failed.
Consumption end time	Indicates when collection of consumption data was completed. If data collection failed, the time is `00:00:00`.
Module data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: Module data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: Module data collection failed.
Module data end time	Indicates when collection of module data was completed. If data collection failed, the time is `00:00:00`.
RFC data status	Available values: • : Data collection is ongoing. The cog icon is only displayed when the Staging Database Monitor is run with the option **Run with "IN BACKGROUND TASK"**. • **Green**: RFC data collection was successful. • **Yellow**: A non-critical error has occured. • **Red**: RFC data collection failed.

Option	Description
RFC data end time	Indicates when collection of RFC data was completed. If data collection failed, the time is `00:00:00`.

Staging Database Logs

The staging database logs list all tables and functions that were accessed on the dependent SAP systems and any error messages that were reported during data collection.

Unlike the status information in the Staging Database Monitor, the staging database logs are not deleted automatically. They are a valuable resource to understand why errors occured and how issues can be remedied.

Accessing Staging Database Logs

To access the staging database logs:

1. Open the SAP Admin module.
2. In the system landscape, click **Administration** and then **Staging Database Logs**.
3. On the screen **Staging Database Logs**, you can filter the information that you want to display:

Option	Description
Start date	Enter the date or date range to filter the information on when the Staging Database Monitor was executed and dependent SAP systems were accessed.
System ID	Enter a system ID or a range of system IDs to filter the information from which dependent SAP systems data was collected.
Client	Enter a client ID or a range of client IDs to filter the information from which clients data was collected.
User name	Enter a user name or a range of user names to filter the information by the user who executed the Staging Database Monitor.
Message type	Enter a message type or a range of message types to filter the information by the message type that was output during data collection. Available values are S (Success), E (Error), and W (Warning).

4. Click **Execute** or press **F8**.

Staging Database Log Results

Table 13: Information in the staging database logs

Column	Description
GUID 16	The unique identifier for each data collection that helps to differentiate between the different runs of the Staging Database Monitor.
System ID	The three-character identifier that identifies the dependent SAP system that was accessed.
Client	The client ID of the SAP system that was accessed.
Area	The type of data that was collected. This information can be helpful for troubleshooting purposes. For example, the value CONSUMPTION indicates all functions that were executed for collecting consumption data.
Counter	The order in which the messages and entries in the log for a particular area are generated.
Start date	The date when the Staging Database Monitor started the data collection from the dependent SAP systems.
Table name	The SAP table that was accessed on the dependent SAP system.
Function module	The function module that was used to access the data.
Code	The error code captured by sy-subrc. Use this to troubleshoot any errors that occured when the function module was called. For information on possible error codes, see the SAP documentation.
Message type	The type of SAP message indicating whether the process completed successfully (S), with a warning (W), or with an error (E).
Message text	A detailed message describing the outcome of the performed action.

11

Optimization in the SAP Admin Module

The information in this section covers features that are designed to help you perform an initial optimization of the license position. This helps to establish a solid basis for the features that are used in the regular optimization process. The features, for example, enable you to do the following:

- Clean up the user primary data. See User Data Validation Report.
- Filter out inactive users. See Logon Evaluation Report.
- Find users with license type 11. See Check for License Type 11 Report.
- Identify the cost center and cost center group for each user. See License Distribution by Cost Center (License Chargeback) Report.

User Data Validation Report

Accurate maintenance of the user primary data is crucial for being able to use the data for consolidation. The User Data Validation in the SAP Admin module report helps to optimize the quality of the user primary data.

When you run a User Data Validation report, the user primary data are verified according to the criteria that have been selected under **Customizing** on the **User Data** tab. The report provides a list of users whose user data has not been consistently maintained. For example, you could set up rules to find users without email addresses or with no Valid To date in their user accounts. For information on setting validation criteria, see Setting User Data Checks for User Data Validation.

Under **User Exits User Data Check** (available in the **Administration** menu), you can specify your own criteria for the user data verification—for example, for the verification of the email address. For more information, see User Exits: Data Check.

You can create variants in order to simplify and standardize repeated analyses.

Setting User Data Checks for User Data Validation

The criteria that you specify for user data checks in the SAP Admin module in the **Customizing** (available from the **Administration** menu) are applied during execution of the User Data Validation report (available from the **Reporting** menu in the SAP Admin module).

The user data checks settings help you to maintain the quality of your user primary data. You can choose among several different data checks; multiple selections are recommended. You can specify which fields should be checked, and set the criteria for the fields' content.

The selections made here are also relevant for the user consolidation. Ideally, your selections should match the consolidation criteria that you select in the user consolidation. Note that the LAW is case sensitive (including the email address). For information on the user consolidation, see User Consolidation.

To set user data validation checks:

1. In the Main menu of the SAP Admin module, click **Administration** and select **Customizing**.
2. On the **User Data** tab, edit the settings as needed.

Option	Description
Use Logical Destination for Update	If you select this check box, updates performed on data in the user root can be identified. If a user in the system performs an update with their permissions, it is possible to identify (provided that the logical destinations have been properly maintained) which user performed the update. If this check box is not selected, the data of the RFC communications user will appear in the change document during an update.
First Name and Last Name	Checks whether a first and last name have been entered and whether they follow the rules defined in the **Check First Name** and **Check Last Name** sections.
Validity Date	Checks all entries in the Valid from and Valid to fields of the user primary data.
Email Address	Checks that an email address has been entered.
Phone No.	Checks that a phone number has been provided.
Extension	Checks that an extension has been provided.
Accounting No.	Checks that an accounting number has been entered.
Cost Center	Checks that a cost center has been provided.
Valid Uppercase Letters	Enter all letters that are allowed as uppercase letters. By default, the letters of the English alphabet are suggested. If necessary, you can add other uppercase letters such as Ä, Ö, and Ü.
Valid Lowercase Letters	Enter all letters that are allowed as lowercase letters. By default, the letters of the English alphabet are suggested. If necessary, you can add other lowercase letters such as ä, ö, ü, ß.
Valid Separators	Enter the separators that are allowed, for example for hyphenated names.

Option	Description
Minimum Number of Characters (For Check First/Last Name)	Enter the minimum number of characters for first and last names. If a name has fewer characters than the minimum specified here, an error is triggered during the user data validation. It is recommended that you specify a minimum of two characters for first names.
First Character of Word (For Check First/Last Name)	Select the appropriate option: • Select **No Check** if no check should be performed. • Select **is always a capital letter** if all first or last names should start with an uppercase letter. • Select **at least one word with capital letters** if at least one letter should be uppercase (for example to allow for names such as *deGaulle*.)
From 2nd Character of Word Onwards (For Check First/Last Name)	Select the appropriate option: • Select **No Check** if no check should be performed. • Select **Only Lowercase** if the second letter must always be lowercase.
Load Role Data	Indicates whether role data should be loaded when you run the user consolidation. If the rule set that will be applied does not require any role data, it may be beneficial to specify N (Do Not Load Data) in order to improve performance and reduce memory consumption. The following values are available (**F4 Help**): • **Load All Data** (blank)—All role data is loaded. • **For Productive Systems Only** (P)—Role data is only loaded for productive systems. • **Do Not Load Data** (N)—No role data is loaded.

Creating a User Data Validation Report

Before you execute a User Data Validation report, ensure that you specified the settings for the user data checks in **Customizing** (in the SAP Admin module in the **Administration** menu).

Use the User Data Validation report to check specific fields in the user primary data against the criteria specified in **Customizing** in the SAP Admin module for existence and contents.

To create a User Validation report:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select **User Data Validation** from the menu. To run the report to analyze all available data, go to step 7. To specify selection criteria and select additional report options, complete step 3 through step 6, as necessary. All report settings are optional.

3. Under **Selection Criteria for Systems**, select the systems whose user logons you want to analyze. In the **System** field, specify the system or range of systems. The system that was previously selected in the Main menu is preset in the selection screen. (**F4 Help** opens a list with the systems that are recorded in the FlexNet Manager for SAP Applications system data.)
4. Under Selection Criteria for Users, you can limit the report to specific user names (UserIDs). In addition, the report can be limited with regard to license type, user type, user group, and other selection options.

Option	Description
User Name	Limits the report to the specified user name or range of user names.
License Type	Limits the report to users with a specified license type.
User Type	Limits the report to a specified user type. The default setting is **A** (Dialog User). By default, technical SAP users — who would also be disregarded in an SAP license audit — are excluded.
User Group	Limits the report to a specified user group.
Account Number	Limits the report to a specified account number.
Cost Center	Limits the report to a specified cost center.
Company Name 1	Limits the report to a specified company name 1.
Company Name 2	Limits the report to a specified company name 2.
Division	Limits the report to a specified division.
User Lock Status	Displays users with a specific lock status. Enter one of the following values: • 64 — locked by administrator • 128 — locked after incorrect logon • 96 — locked • 32 — locked by the central CUA administrator You can find the values for this field in the **F4 Help**.
Read Invalid Users	If you want to include invalid users in the report, select the **Read Invalid Users** check box.

5. Under **List Options**, you can choose which data should be displayed. Select from the following values:
   - **Only Error** — Only incorrect records are displayed.
   - **Without Error** — Only records that passed the verification are displayed.
   - **All Records** — All data records are displayed.
6. If you want to use a specific layout, enter the name of the saved layout in the **Layout** field.
7. Click **Execute**.

Review the results of the User Data Validation report. Some fields are highlighted in red. This denotes issues with that

particular entry, according to the rules set in the Customizing section in the SAP Admin module (see Setting User Data Checks for User Data Validation). You can display a dialog with the error details by selecting a red field and clicking the **Error Reason** function key.

Clean up the user primary data to enable correct consolidation of the users. You can do this directly in the report. For more information, see User Data or License Data Changes.

Logon Evaluation Report

The Logon Evaluation report identifies users who have been set up in the SAP system, but who never logged on or have not logged on to the system within a specified amount of time.

These users would be fully calculated in a license audit because the actual activities of a user are irrelevant in this context. After having analyzed them accordingly, you can either delete these users or limit their validity so that they are not taken into account during audits.

Difference between Logon Evaluation Report and Last Logon License Rule

The Logon Evaluation report provides functionality that is similar to that of the Last Logon license rule (available in SAP mode in FlexNet Manager Suite). If your goal is to retire users that have not logged on to the system within a specified time period, it is recommended that you use the Last Logon license rule, because the Last Logon license rule will detect users who become inactive at some point in the future, rather than having to manually run the Logon Evaluation report on a regular basis.

For more information on the Last Logon license rule, see “Last Logon” Rule. For more information on retiring users, see Retiring Users.

Evaluation of Multiple Systems

If you are evaluating more than one system, the **User Consolidation** option consolidates the users across systems, and the selected systems are examined as a whole. When the **User Consolidation** option is selected, the Logon Evaluation report finds users who have not logged on to any of the selected systems during the specified time frame. When the **User Consolidation** option is not selected, no consolidation across systems takes place; the selected systems are examined individually and all users are displayed who did not login to the individually selected systems in the specified time frame.

HR Status Information

You can use information from a connected HR system to identify inactive users. If the **Check HR Data** check box is selected, FlexNet Manager for SAP Applications checks the user's HR status. If the user's HR status is "not active" (it does not equal 3), the user is listed in the report output. To be able to use this feature, the infotype 105 (Communication) must be maintained in the HR primary record.

Direct Mass Change

FlexNet Manager for SAP Applications enables you to make a direct mass change to automatically change the license types of users who have not logged on in a certain amount of time, so that you do not have to reclassify them manually. You can also assign these users a collective Valid To date. You can schedule this report to run as a batch job to ensure that users who do not use the SAP system are always assigned a specific license type—for example 91 for test users—or to change their validity.

List of All Users

This report can also be used to list all users that are on the system. To do so, run the report without entering a time period (leaving the **Not Logged On In ... Days** field blank). In this case, FlexNet Manager for SAP Applications will not check the users' consumption data.

You can create variants in order to simplify and standardize repeated analyses.

Creating a Logon Evaluation Report

Create a Logon Evaluation report to identify users who have been set up in the SAP system, but who never logged on or have not logged on to the system within a specified amount of time.

To create a Logon Evaluation Report:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select **Logon Evaluation** from the menu. To run the report to analyze all available data, go to step 10. To specify selection criteria and select additional report options, complete step 3 through step 9, as necessary. All report settings are optional.
3. Under **Selection Criteria for Systems**, select the systems whose user logons you want to analyze. In the **System** field, specify the system or range of systems. The system that was previously selected in the Main menu is preset in the selection screen. (**F4 Help** opens a list with the systems that are recorded in the FlexNet Manager for SAP Applications system data.)
4. Under **Selection Criteria for Users**, you can limit the report to specific user names (UserIDs). In addition, the report can be limited with regard to license type, user type, user group, and other selection options.

Option	Description
User Name	Limits the report to the specified user name or range of user names.
License Type	Limits the report to users with a specified license type.
User Type	Limits the report to a specified user type. The default setting is **A** (Dialog User). By default, technical SAP users—who would also be disregarded in an SAP license audit—are excluded.
User Group	Limits the report to a specified user group.
Account Number	Limits the report to a specified account number.
Cost Center	Limits the report to a specified cost center.
Company Name 1	Limits the report to a specified company name 1.
Company Name 2	Limits the report to a specified company name 2.
Division	Limits the report to a specified division.

Option	Description
User Lock Status	Displays users with a specific lock status. Enter one of the following values: • 64—locked by administrator • 128—locked after incorrect logon • 96—locked • 32—locked by the central CUA administrator You can find the values for this field in the **F4 Help**.
Read Invalid Users	If you want to include invalid users in the report, select the **Read Invalid Users** check box.

5. Under **Logon Evaluation Options**, you can indicate how the report should evaluate user logon information and whether it should consolidate user data.

Option	Description
Not Logged on in ... Days	Enter the number of days that you want to define as your threshold. If no value is provided, all users that are on the system will be listed.
Account for Valid-From	Use this option if you want the system to consider the Valid From date in the user primary data. If in the user primary data a date is specified that falls after the date of the last logon or after the creation date of the user, the Valid From date is taken.
User Consolidation	If you want to consolidate user data across several systems, select the **User Consolidation** check box. If this option is selected, the report shows users that appear on more than one system only once with the data from the system on which the shorter **Not Logged on in ... Days** period occurred.

6. Under **Parameters HR Connection**, you can specify that you want the report to check the data from a connected HR system. To do so, select the **Check HR Data** check box, then select the value for the option **HR Status 'Not Active'**. The default value is **Not Active** (not equal 3).
7. Under **Parameters for Direct Mass Change**, select the **Direct Mass Change** check box if you want to immediately change the Valid To date and/or license type of the users identified in the report. To enable a mass change, you must also indicate which data you want to change by selecting the appropriate check box:
   - **Update User's Valid To Date**—Select the check box and specify a date to update the User Valid To date for all identified users.
   - **Update License Type**—Select the check box and specify a license type to update the license type for all identified users.

Note: *To use the LDAP options, you need to create a user exit for the LDAP connection beforehand. For more information, see User Exits for LDAP Connections.*

Under **LDAP Parameters**, select the **Analyze LDAP** check box to cross-reference an LDAP system to access further information on the users' status, then enter the appropriate value (which is dependent on the connected LDAP system) in the **LDAP Status** field. You can use this option, for example, to identify users that are marked as inactive in the LDAP system.

9. Under **Display Options**, you can specify a layout for the report. Enter the name of the saved layout in the **Layout** field.
10. Click **Execute**.

If you are performing a direct mass change, all found user primary data are updated using the specified parameters after you confirmed the security prompt. Foreign systems are accessed via the RFC connection that is specified in the system data.

You can modify the user data or license data directly in the report. For more information, see User Data or License Data Changes.

All modifications to user primary data are logged. You can view the logs using the transaction SLG1. If the mass change encounters an error, the log file is opened automatically.

Results of a Logon Evaluation Report

The output of the Logon Evaluation report not only lists users that have not logged on to the system within a specified amount of time, it also informs you about users' consumption data and finds users who logged on to a system multiple times.

Identify Users Without Logon

By sorting the **Days** column of the Logon Evaluation report in descending order, you can quickly identify the users with the highest number of days since their last logon.

Important: *The criterion 'not logged on' does not necessarily need to be a decisive factor. The selected list should be reviewed carefully before a mass change is performed. Single users who match the selection criteria, but should not be amended, need to be removed individually from the selection. It is recommended to save this specific selection as a variant.*

Identify Users with Consumption Data

The **Note** column informs you whether consumption data is present (by showing an appropriate message), despite the fact that the user was not logged on. The **Month** column (long name: **Month Last Consumption**) indicates the last month when consumption occurred.

To see all users who used CPU time, sort the **Note** column in descending order. You can display more detailed information by double-clicking the corresponding text in the **Note** column or by selecting the corresponding row and right-clicking **Consumpt. Data**. This opens a dialog with information explaining why consumption data exists despite the user not having been logged on to the system. The reason could be, for example, that a batch job has been assigned to a user. Deleting the user would result in the job being canceled which would trigger errors in the system. Therefore, the decision whether to set the user status to inactive should not be based solely on their logon behavior, but should be evaluated on a case-by-case basis.

Identify Users with Multiple Logons

You can find users who logged on to the system multiple times. These users would be identified during an SAP system measurement because multiple logons typically violate the SAP license agreement. You can identify these users using the information in the columns **ML Total** (long name: **Multiple Logon Total**) and **ML Max.** (long name: **Multiple Logons**

Max).

- **ML Total** — Displays how often a user was logged on multiple times in the current calendar year.
- **ML Max.** — Displays the maximum number of simultaneous multiple logons that a user had in the current calendar year.

Identify Inactive Users

If you are using an HR system to identify inactive users, you can sort the report by the **HR Status** column to see all inactive users at a glance.

For information on the **ALV Count** column, see Counting Rows in Reports.

Check for License Type 11 Report

Usage Scenario

This report finds all users with license type 11.

In older SAP pricelists (SW Component Price List), users could be classified with license type 11. This Multi-Client/System user type could be used for non-chargeable users that had already been classified once as chargeable users in a different client or system. The Check for License Type 11 report quickly finds all users with license type 11 to enable you to assign them their appropriate license type.

Because the Multi-Client/System user type (license type 11) usually referenced its original (chargeable) user ID, FlexNet Manager for SAP Applications can suggest the appropriate — that is, the original — license type for the users that were identified using the Check for License Type 11 report. This requires that the reference between the original user ID and the referenced user ID (with license type 11) is still intact. In case the reference cannot be made, an appropriate message is displayed.

Results

The results page of the Check for License Type 11 report lists all users that match the criteria you specified. The number of identified users is displayed in the report title in brackets.

The report displays user information (user name, system ID, and client) about the chargeable user (displayed on a dark blue background) and the referenced user (displayed on a light blue background). If FlexNet Manager for SAP Applications can link the Multi-Client/System user to the chargeable user, the original license type is displayed in the **LT Recommendation** column, and the **Flag, LT Changed** column shows a check mark. You can accept the license type suggestions by following the procedure described under Accepting License-Type Recommendations in a Check for License Type 11 Report.

Creating a Check for License Type 11 Report

Create a Check for License Type 11 Report to find all users with license type 11.

To create a Check for License Type 11 report:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Reporting**, then select **Tools** from the menu and click **Check for License Type 11**. To run the report to analyze all available data, go to step 6. To specify selection criteria and select additional report options, complete step 3 through 5, as necessary. All report settings are optional.
3. Under **Selection Criteria Systems**, select the systems whose user license types you want to analyze. In the **RFC Destination** field, specify the system or range of systems. The system that was previously selected in the Main menu is preset in the selection screen. (**F4 Help** opens a list with the systems that are recorded in the FlexNet Manager for SAP Applications system data.)
4. Under **Selection Criteria for Users**, you can limit the report to specific user names (UserIDs). In addition, the report can be limited with regard to user type, user group and other selection options.

Option	Description
User Name	Limits the report to the specified user name or range of user names.
User Type	Limits the report to a specified user type.
User Group	Limits the report to a specified user group.
Account Number	Limits the report to a specified account number.
Cost Center	Limits the report to a specified cost center.
Company Name 1	Limits the report to a specified company name 1.
Company Name 2	Limits the report to a specified company name 2.
Division	Limits the report to a specified division.
User Lock Status	Displays users with a specific lock status. Enter one of the following values: • 64—locked by administrator • 128—locked after incorrect logon • 96—locked • 32—locked by the central CUA administrator You can find the values for this field in the **F4 Help**.
Read Invalid Users	If you want to include invalid users in the report, select the **Read Invalid Users** check box.

5. Under **Display**, you can specify a layout for the report. Enter the name of the saved layout in the **Layout** field.
6. Click **Execute**. User data in foreign systems is accessed via the RFC connection that is specified in the system data.

Troubleshooting the Check for License Type 11 Report

Sometimes it is possible that FlexNet Manager for SAP Applications cannot reference the Multi-Client/System user to the chargeable user.

In this case, the **Note** column displays a message indicating the reason. The following messages can be displayed:

- `User not found in reference system`—The chargeable user was not found on the reference system. This could be due to a user name change that makes it impossible for FlexNet Manager for SAP Applications to reference the Multi-Client/System user to the chargeable user.
- `Reference user with invalid license type`—The reference user's license type is also 11 or the license type is initial (not set).
- `Data from reference system not loaded`—This indicates that the relevant data is not available; for example, when the SAP system that held the relevant data was deleted.

If no users are found that match the specified criteria, the message `No user with license type 11 found` is displayed.

Accepting License-Type Recommendations in a Check for License Type 11 Report

After you have run the Check for License Type 11 report, you need to accept the recommendations and update the license type in the user primary records.

To accept the license-type recommendations in a Check for License Type 11 Report:

1. Follow the steps under Creating a Check for License Type 11 Report to run a Check for License Type 11 report.
2. In the **License Check** screen, select the rows for which you want to accept the recommendation. (Hold down the **Ctrl** key to select multiple rows at a time.)
3. You can now accept the recommendations for the selected rows in one of the following ways:
   - Click **Accept Recommendation**.
   - Right-click one of the selected rows and select **Accept Recommendation** from the context menu.
4. Select the rows that contain the data that you changed in step 3. Click **Update License Data** to roll out these license-type changes to the dependent SAP systems.

   You can also modify the user data or license data directly in the report. For more information, see User Data or License Data Changes.

License Distribution by Cost Center

(License Chargeback) Report

The License Distribution by Cost Center report displays how the SAP license types are distributed between the individual cost centers and cost center groups of a standard hierarchy.

In addition to showing the cost center and cost center group for each user, the License Distribution by Cost Center report (which is shortened to License Chargeback in the menu) displays the standard hierarchy from the SAP Controlling (CO) module.

To create the report, FlexNet Manager for SAP Applications first loads the relevant CO standard hierarchy from the system that includes the CO module, and then combines data from a LAW results list with the hierarchy data. Therefore, as a prerequisite, the LAW results list needs to be available before executing the License Distribution by Cost Center report. For more information, see Performing a System Measurement. You can create variants in order to simplify and standardize repeated analyses.

Creating a License Distribution by Cost Center (License Chargeback) Report

The LAW results lists must be available before executing the License Distribution by Cost Center report.

Run the License Distribution by Cost Center report to see how the SAP license types are distributed between the individual cost centers and cost center groups of a standard hierarchy.

To create the License Distribution by Cost Center report:

1. In the Main menu of the SAP Admin module, click **Reporting**, then select **Tools** from the menu.
2. Click **License Chargeback**.
3. In the **License Distribution by Cost Center** screen, in the **CO Data** section, enter the relevant CO parameters for your report:
   - **RFC Connection to CO System** — Enter the RFC destination of the system that contains the CO module. (**F4 Help** opens a list whith the systems that are recorded in the FlexNet Manager for SAP Applications system data.)
   - **Controlling Area** — Enter the controlling area that you want to analyze.
   - **Cost Center Group** — Enter the cost center group that you want to analyze.
4. In the **User Data Source** section, in the **Description/Info** field, select the name of the LAW measurement on which the report should be based (open the **F4 Help** to select the LAW measurement from a list of available LAW results). If you leave the **Description/Info** field blank, the most recent LAW results list is selected by default.
5. Click **Execute** or press **F8**.

Reading the Results of a License Distribution by Cost Center Report

The resulting report consists of a navigation panel on the left side and three tabs in the main area on the right side. The navigation panel displays the entire standard hierarchy according to your selection in the previous screen. The header of the navigation panel indicates the selected controlling area.

You can drill down in the standard hierarchy to display cost center groups and cost centers by clicking the arrow to the left of each element. By double-clicking an element—you can select the entire hierarchy, a cost center group, or an individual cost center—in the navigation panel, you can display the relevant information for this element in the tabbed area of the right side. The header of the tab will reflect the selection you made.

You can choose to display only users who have not been assigned to a cost center in the Standard Hierarchy by double-clicking **Without assignment in hierarchy** at the bottom of the navigation panel. This will list users and their license types (on the **User** or **License Type** tab; the **Cost Center** tab will be empty) whose cost center either has not been set in the primary data record or whose assigned cost center is not part of the current hierarchy. To revert to the normal view, just double-click an element in the Standard Hierarchy.

The tabs provide information on cost centers, users, and license types in ALV grid lists. All tabs offer standard SAP features, such as, for example, sorting, filtering, printing, or exporting.

Cost Center Tab in the License Distribution by Cost Center Report

The **Cost Center** tab displays the cost centers that are included in the element you selected in the Standard Hierarchy together with other information.

Column Name	Description
Cost Center	The cost center of the element that is currently selected in the Standard Hierarchy. If you select a cost center group, the cost centers that are included in that group are displayed.
Valid From	The date when the cost center starts to be valid.
Valid To	The date when the cost center ceases to be valid.
Person Responsible	The manager of the cost center.
Department	The department to which the cost center belongs.
Cost Center Category	The type of cost center.
Company Code	The company code to which the cost center belongs.
Business Area	The business area to which the cost center belongs.
Currency	The currency of the cost center.
ISO Code Currency	The ISO code of the currency.
Profit Center	The profit center to which the cost center belongs.

User Tab in the License Distribution by Cost Center Report

On the **User** tab, the License Distribution by Cost Center report results have been aggregated by user name.

After you select an element in the Standard Hierarchy, the **User** tab lists the users who have been assigned to the cost centers of that element. You can quickly identify the number of users and their license types, together with other detailed information.

By default, the ALV grid is sorted by license type in ascending order. You can amend the ALV grid layout, if required.

Column Name	Description
Installation Number	The installation number of the system that contains the CO module.
System ID	The three-character ID of the system that contains the CO module.
Client	The client that holds the primary record of the user.
User Name	The user's user name in the SAP system.
License Type	The license type that has been assigned to the user.
Counter	Every row is counted (the **Counter** column for each user contains the value 1) to enable the creation of totals and subtotals. By default, the total number of users is calculated, and subtotals are calculated for groups of users with the same license type. However, you can customize this feature to count any type of data in this ALV grid. For more information, see Counting Rows in Reports.
First Name	The user's first name.
Last Name	The user's last name.
Special Version	The user's special version, if the user has been assigned one.
Country Surcharge	The user's country surcharge, if the user has been assigned one.
Status	The user's status in the LAW measurement report: • A green status indicates that the consolidation of the user was successful. • A red status indicates that the consolidation was not successful (for example, because the user had different country surcharges assigned on different systems).
Development User	This column shows an X if the user has a developer license key. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Email Address	The user's email address.
Phone Number	The user's telephone number.
Accounting Number	The user's accounting number.
Cost Center	The user's cost center.

License Type Tab in the License Distribution by Cost Center

Report

On the **License Type** tab, the results have been aggregated by license type for the specified controlling area.

The **Licence Type** tab enables you to quickly identify the number of licences of a specific licence type that are distributed within an element (for example, a cost center or cost center group) highlighted in the Standard Hierarchy. Double-click the desired element in the Standard Hierarchy to display the relevant data for this element on the **License Type** tab.

By default, the ALV grid is sorted by license type in ascending order. You can amend the ALV grid layout, if required.

Column Name	Description
Installation Number	The installation number of the system that contains the CO module.
System ID	The three-character ID of the system that contains the CO module.
Client	The client that contains a number of licenses of a certain license type.
License Type	The license type of which a certain number of licenses exist on a specified system.
Special Version	The special version, if applicable, that is associated with the license type.
Counter	Every row is counted (the **Counter** column for each user contains the value 1) to enable the creation of totals and subtotals. By default, the total number of users is calculated, and subtotals are calculated for groups of users with the same license type. However, you can customize this feature to count any type of data in this ALV grid. For information on counting rows in ALV grids, see Counting Rows in Reports.
First Name	The user's first name.
Last Name	The user's last name.
Country Surcharge	The country surcharge, if applicable, that is associated with the license type.
Number	The number of licenses of a specified type. By default, the report details the number of licenses of a certain license type per client and the total number of licenses of a certain license type per system for the element that is selected in the Standard Hierarchy. You can treat the **Number** column like the **Counter** column as described under User Tab in the License Distribution by Cost Center Report. For information on counting rows in ALV grids, see Counting Rows in Reports.

Customer Reports

With FlexNet Manager for SAP Applications, you can connect customer reports, such as specially created reports or commissioned reports.

These customer reports are connected to FlexNet Manager for SAP Applications using the **Customer Reports** item in the **Administration** menu. After you connect a customer report, it can be displayed in the **Extras** menu. As a menu item, either the description is displayed, or, if no description has been provided, the name that was used to add the report to the system is displayed. If no reports have been added, the **Extras** menu is empty.

Adding a Customer Report

To add a customer report:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Customer Reports** from the menu.
2. Click **Add Customer Report** to add a report.
3. In the **Add Customer Report** dialog, enter the report name and a description. Click **Continue**.

Modifying a Customer Report

To modify a customer report:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Customer Reports** from the menu.
2. Select the report you want to modify and click **Change Customer Report**.

Deleting a Customer Report

To delete a customer report:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Customer Reports** from the menu.
2. Select the report you want to modify and click **Delete Customer Report**.

Activity Checks

The activity checks functionality replicates the checks that SAP now makes in the USMM system measurement to guard against fraud. Using activity checks, you can identify possible usage issues and remedy them.

If you do not use the Staging Database Monitor to remotely launch the USMM and collect activity checks data, you *must* use the Activity Checks feature if you want to collect activity checks data from dependent SAP systems. As a prerequisite to using the Activity Checks feature, the Satellite transport must be installed on the corresponding SAP systems. The activity checks data that is generated using the Activity Checks feature is automatically added to the staging database on the SAP Admin module. The SAP Inventory Agent can connect to this staging database and load the data into the FlexNet Manager Suite database.

If you want to collect activity check data from a dependent system that runs SAP Basis release 4.6C, 6.2, or 6.4, you *must* start the data collection using the **Activity Checks** menu in the SAP Admin module.

The results of activity checks are used for analyzing and managing indirect access data for SAP user accounts. In particular, the data from the activity checks **Work Time** and **Multiple Logons** is analyzed. For more information, see SAP User Accounts Evidence.

Available Activity Checks

The following activity checks are available in the SAP Admin module.

Option	Description
Work Time	Checks the activity of all end-users to ensure that sufficient pauses in activity are recorded in two subsequent days. The default value in the **Break Duration** field is 28,800 seconds (8 hours).
Prof./Limited Prof. Users	Checks to ensure that ESS users are not executing activities that require a Professional or Limited Professional license type. By default, this check is restricted to the last 28 days.
Workbench Users	Detects any users with a development key changing program text and issues a warning if these users do not have a license type associated with development work. By default, this is restricted to the last 42 days.
Deleted Users	Identifies any users that were deleted. By default, this is restricted to the last 84 days.
Expired Users	Identifies any users whose user accounts have expired. By default, this is restricted to the last 84 days.
Logon after Expiration	Identifies any users who have logged on to SAP after their account expiration date. By default, this is restricted to a period from last year/current month to last month.
Future Users	Identifies any users who logged on to SAP before their user account was valid.
Multiple Logons	Lists the users with the highest number of concurrent logons in the previous and the current year. You can specify the maximum number of rows to display per page.

Defining and Executing Activity Checks

Activity-checks data can be collected only from dependent systems that have the Satellite transport installed. If the Satellite transport is not installed, use the Staging Database Monitor with the **Launch USMM remotely** option to collect activity-checks data. For more information, see Collecting Data from Dependent SAP Systems.

You can select and define the activity checks that you want to run.

To define and execute an activity check:

1. In the Main menu of the SAP Admin module, click **Activity Checks**, then select **Start Activity Checks** from the menu.
2. In the **Execute Activity Checks** screen, specify the system name(s) in the **RFC destination** field and provide a meaningful description for the check in the **Check Description** field.
3. Select the checks that you want to run. (The default values for each check reflect the values used by SAP in USMM, but you can modify the default values when you define activity checks.) See Available Activity Checks for a description of the individual activity checks.
4. The buttons **Checked Tables**, **Unit Table Texts**, and **Self-Service License Types** provide further information about the checked data:

- **Checked Tables** — Click this button to see which tables are checked. Although you can define which tables should be checked (by selecting a row and clicking **Display/Change** , this is not recommended.
- **Unit Table Texts** — Click this button to see the links between units and tables.
- **Self-Service License Types** — Click this button to see the license types that are available for ESS users. If you agreed to other license types for ESS users with SAP, you can edit this table by selecting a row and clicking **Display/Change** .

5. Click **Execute**.

Viewing Activity Check Results

You can display activity check results after you defined and executed at least one activity check.

View the activity checks results and the activity checks parameters to identify possible issues.

To view activity check results:

1. In the Main menu of the SAP Admin module, click **Activity Checks**, then select **Display Activity Checks** from the menu.

   This displays a list of all of the activity checks that have been defined and executed.

2. Double-click a row to view details for a particular activity check. Only tabs with results are shown.
   - A yellow light bulb icon indicates that the check is finished and that there is content.
   - A gray light bulb icon indicates that the check is finished, but that there was no content.
3. In the **Detailed Data for Activity Check** screen, select the tab for the check and click the **Check Parameters** button to see the parameters used for this activity check.

12

Regular Optimization of the SAP License Position in FlexNet Manager Suite

Optimization of the SAP license position takes place in two separate steps. First, you use FlexNet Manager Suite to identify the optimal license position and generate license recommendations. The features that are available for this process are explained in the present section.

In a second step, you import the license recommendations into the SAP Admin module and update the user primary records in the SAP systems accordingly. This "actual" optimization, also called *remediation*, is described in section *Remediation in the SAP Admin Module* in the *FlexNet Manager for SAP Applications User Guide* PDF.in section Remediation in the SAP Admin Module.

In SAP mode, a variety of features are available that help you to maintain and optimize your license position, such as:

- Consumption and transaction analysis—see Consumption Analysis Report
- Role utilization analysis—see Role Utilization Report
- Module usage analysis—see Module Usage Report
- Indirect access management—see Managing Indirect Access
- User consolidation—see User Consolidation
- Transaction profiles—see SAP Transaction Profiles
- License rules and license rule sets—see Configuring Optimization Rules
- SAP Package license consumption calculation—see SAP Package Licensing.

Consumption Analysis Report

The Consumption Analysis report analyzes the CPU consumption of the users within a specific time period. This report identifies users who rarely use the system, but who have been assigned an expensive (for example, Professional) license. By identifying these users and assigning them an appropriate license, the CPU consumption analysis provides the fastest

and easiest way to quickly identify cost-saving potential.

This report will also find users with a high CPU consumption to help you assign the appropriate license to them.

You can specify a transaction profile within the Consumption Analysis report. This is useful if you want to identify users who are regularly using the same transactions, in order to assign them an appropriate license type. It enables you to compare the collected usages with the usage list of a specified transaction profile. For each transaction in a profile, matches are verified. For information on transaction profiles, see SAP Transaction Profiles.

Note: *The Consumption Analysis report analyzes consumption data only for complete months.*

Creating a Consumption Analysis Report

To create a Consumption Analysis report:

1. In FlexNet Manager Suite, click **SAP**, point to **Analysis Tools** and click **Consumption Analysis**.

   The **Consumption Analysis** page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

3. Optionally, specify selection criteria. In the **Selection Details** section, you can limit the report to the following criteria:

   - **System Landscape**—Select the system that should be used for the analysis.

     Tip: *To minimize delay in generating your report, you may select only one system at a time from this list.*

   - **Date from**—Select the first month from the menu for which consumption data should be evaluated.
   - **Date to**—Select the last month from the menu for which consumption data should be evaluated.
   - **Object**—Enter one or more object names to limit the report to specific objects. If you enter multiple objects, separate them with a semicolon.
   - **Object type**—Select an object type from the menu to limit the report to specific object types (job, report, transaction, or non-SAP).
   - **Task type**—Enter one or more task types to limit the report to specific tasks. If you enter multiple task types, separate them with a semicolon.
   - **Transaction profile**—Select a transaction profile from the menu to compare the consumption data to the consumption that a user spent within a specified profile.

4. Click **Refresh** to display the results.

Reading the Results of a Consumption Analysis Report

The results are presented in a grid, which enables you to sort users based on their CPU consumption. After sorting the results, you can identify users with zero or very high CPU usage, and can assign them an appropriate license type.

The **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column	Description
System ID	The three-character ID of the system on which the consumption occurred.
Client	The client ID of the system on which the consumption occurred.
User Name	The name of the user whose consumption is analyzed.
Total CPU Time	The amount of CPU time that was consumed by the user.
Profile CPU Time	The amount of CPU time that the user spent in the specified transaction profile.
% Profile CPU Time	The amount of CPU time that the user spent in the specified transaction profile, expressed as a percentage of the total CPU time.
Transaction Profile	The transaction profile that was used to identify the user.
License Type	The license type that is currently assigned to the user on the system.
First Name	The first name of the user whose consumption is analyzed.
Last Name	The last name of the user whose consumption is analyzed.
Valid From	The start date of the user's validity period.
Valid To	The end date of the user's validity period.
User Type	The user type of the user.
User Group	The group that the user belongs to.
Last Logon Date	The date when the user last logged on to the SAP system.
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Created On	The user's creation date.
Account No.	The accounting number of the user.
Assign. To Special Version	The user's special version, if the user has been assigned one.
Chargeable Client ID	The two-character ID of the chargeable user's system client.

Column	Description
Chargeable From Date	The start date from which the chargeable user is representing this user.
Chargeable System ID	The three-character ID of the chargeable user's system.
Chargeable To Date	The end date until which the chargeable user is representing this user.
Chargeable User Name	The user name of another user who is representing this user.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Cost Center	The user's cost center.
Country Surcharge	The user's country surcharge, if the user has been assigned one.
Division	The user's division.
Email	The email address of the user on the system on which the user was identified.
Locked Status	Indicates whether the user is currently locked. Possible values: • 0: Not locked • 32: Locked by CUA administrator • 64: Locked by administrator • 128: Locked after failed logon
Max. Multiple Logon	The maximum number of simultaneous multiple logons that the user had in the specified period.
No. Of Multiple Logon	Displays how often the user was logged on multiple times in the specified period.
Telephone Extension	The user's phone extension.
Telephone Number	The user's phone number.

FlexNet Manager Suite (On-Premises)

2024 R2

The "SAP Consumption Analysis Details" Dialog

Use the **SAP Consumption Analysis Details** dialog to review the consumption for a particular user.

This dialog also provides insight into whether the consumed objects are part of a transaction profile, and enables you to directly add one or more consumed objects to a transaction profile.

For more information on reviewing and adding objects to a transaction profile, see Identifying Objects that are Included in Transaction Profiles.

The **SAP Consumption Analysis Details** dialog displays the following information.

Column Name	Description
System ID	The three-character ID of the system on which the consumption occurred.
Client	The client ID of the system on which the consumption occurred.
User Name	The name of the user whose consumption is analyzed.
Month	The month in which the usage occurred.
Object	The name of the object that was used.
Module Name	The name of the SAP Basis Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.
Sub Module Name	The name of the SAP Sub Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.
Transaction Profiles	The name of the transaction profile that contains the object.
Entry Type	The entry type of the object (`T` = Transaction, `J` = Job, `R` = Report).
Job Name	The name of the job (available only if the entry type was a Job).
Task Type	The task type that was used.
CPU Time	The CPU time (in seconds) that was spent.

You can directly add objects from this dialog to a transaction profile. For more information, see Identifying Objects that are Included in Transaction Profiles.

Viewing Consumption Details in the Consumption Analysis Report

To view consumption analysis details in the Consumption Analysis report:

1. In the Consumption Analysis report, select the user for whom you want to display consumption details.
2. Click **View**.

Role Utilization Report

The Role Utilization report provides visibility on which roles are assigned to each user and how the roles are being used. This information can be used as input to designing license rules that map roles to license types. It can also be used to understand which of a user's roles the user is actively using. If a user is not using a role, you might want to consider to remove them from the role, so that their authorizations more accurately reflect their responsibilities.

The Role Utilization report is a valuable tool for system administrators, as it provides a good framework to continually optimize the roles' definitions and their allocation. It can therefore help you to keep a clean and consistent SAP

environment.

Creating a Role Utilization Report

To create a Role Utilization report:

1. In FlexNet Manager Suite, click **SAP**, point to **Analysis Tools** and click **Role Utilization**.

   The **Role Utilization** page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

3. Optionally, specify selection criteria. In the **Selection Details** section, you can limit the report to the following criteria:

   - **System Landscape**—Select the system that should be used for the analysis.

     Tip: *To minimize delay in generating your report, you may select only one system at a time from this list.*

   - **Role name**—If you want to check the usage of a specific role, enter the name of the role.
   - **Valid from**—Select the start date of the period when the user role was valid for one or more users.
   - **Valid to**—Select the end date of the period when the user role was valid for one or more users.
   - **Date from**—Select the first month from the menu for which consumption data should be evaluated.
   - **Date to**—Select the last month from the menu for which consumption data should be evaluated.

4. Click **Refresh** to display the results.

Reading the Results of a Role Utilization Report

In the Role Utilization report, the **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
System ID	The three-character ID of the system on which the consumption occurred.
Client	The client ID of the system on which the consumption occurred.
User Name	The name of the user whose consumption is analyzed.
Composite Role	The composite role that has been assigned to the user.
Composite Role License Type	The license type that has been assigned to the composite role.
TCode in Composite Role	The number of transaction codes that are included in the composite role.

Column Name	Description
Used TCode in Composite Role	The number of transaction codes in the composite role that were actually used by the user.
% Composite Role Utilization	A percentage that shows how much the transactions of the composite role (the value in the **TCode in Composite Role** column) were used. A high percentage indicates that a high number of transactions of the composite role were used; a low number indicates that only few transactions of the composite role were used.
Single Role	The single role that has been assigned to the user.
Single Role License Type	The license type that has been assigned to the single role.
TCode in Single Role	The number of transaction codes that are included in the single role.
Used TCode in Single Role	The number of transaction codes in the single role that were actually used by the user.
% Single Role Utilization	A percentage that shows how much the transactions of the single role (the value in the **Tcode in Single Role** column) were used. A high percentage indicates that a high number of transactions from the single role were used; a low number indicates that only few transactions of the single role were used.
Total TCode Used	The number of transactions that a user used. The number in the **Total TCode Used** column is not necessarily the sum of the numbers in the **Used TCode in Single Role** and **Used TCode in Composite Role** columns. Tcodes can appear in several roles, and, as a result, would be calculated twice. It is also possible that, via permissions profiles, a user can access transactions that have not been assigned to any user role.
Account No.	The accounting number of the user.
Assign. To Special Version	The user's special version, if the user has been assigned one.
Chargeable Client	The two-character ID of the chargeable user's system client.
Chargeable From Date	The start date from which the chargeable user is representing this user.
Chargeable System ID	The three-character ID of the chargeable user's system.
Chargeable To Date	The end date until which the chargeable user is representing this user.
Chargeable User Name	The user name of another user who is representing this user.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Cost Center	The user's cost center.
Country Surcharge	The user's country surcharge, if the user has been assigned one.
Created On	The user's creation date.

Column Name	Description
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Division	The user's division.
Email	The email address of the user on the system on which the user was identified.
First Name	The first name of the user whose consumption is analyzed.
Last Logon Date	The date when the user last logged on to the SAP system.
Last Name	The last name of the user whose consumption is analyzed.
License Type	The license type that is currently assigned to the user on the system.
Locked Status	Indicates whether the user is currently locked. Possible values: • 0: Not locked • 32: Locked by CUA administrator • 64: Locked by administrator • 128: Locked after failed logon
Max. Multiple Logon	The maximum number of simultaneous multiple logons that the user had in the specified period.
No. Of Multiple Logon	Displays how often the user was logged on multiple times in the specified period.
Telephone Extension	The user's phone extension.
Telephone Number	The user's phone number.
User Group	The group that the user belongs to.
User Type	The user type of the user.
Valid From	The start date of the user's validity period.
Valid To	The end date of the user's validity period.

FlexNet Manager Suite (On-Premises)

2024 R2

Advanced Role Analysis

After you have executed the Role Utilization report, you can run the Advanced Role Utilization or User Activity analysis to obtain more detailed information about roles and their usage. These analyses are available from the **Advanced**

menu.

Advanced Role Utilization

The Advanced Role Utilization analysis enables you to display the transaction codes that are contained in a specific role, as well as their usage, based on the overall activities of the user in this role. The usage is given in CPU time (seconds) and as a percentage. Therefore, the Advanced Role Utilization analysis is particularly helpful if you want to identify transaction codes that are not being used by a particular user.

The analysis shows the role utilization for the parameters (for example, systems, role name, or period) specified for the underlying Role Utilization report.

To analyze the utilization of a specific role:

1. Execute a Role Utilization report by following the steps described under Creating a Role Utilization Report.
2. In the report, select the row that contains the user and the role that you want to analyze.
3. On the **Advanced** menu, point to **Analysis**, and then click **Advanced Role Utilization**.

The **Advanced Role Utilization** dialog displays the following information.

Column Name	Description
System ID	The three-character ID of the system on which the user used the role and its transaction codes.
Client ID	The client ID of the system on which the user used the role and its transaction codes.
User Name	The name of the user whose role utilization is analyzed.
Role Name	The name of the role whose utilization is analyzed.
Transaction Code	The transaction codes that are included in the role.
CPU Time	The CPU time (in seconds) that the user spent on a transaction code within the role.
Percentage	The amount of time, expressed as a percentage, that the user spent on a transaction code within the role. The percentages of all transaction codes in the role add up to 100%.

User Activity

The User Activity analysis enables you to display all transaction codes that were used by a specific user in any role. The analysis shows how much a user used a specific transaction code and whether the transaction code is included in the selected role. This makes the User Activity analysis a useful tool for identifying a user's overall activities and for cleaning up a user's roles.

The analysis shows the user activity for the parameters (for example, systems, role name, or period) that were specified for the underlying Role Utilization report.

To analyze the activity of a specific user:

1. Execute a Role Utilization report by following the steps described under Creating a Role Utilization Report.
2. In the report, select the row for the user and the role whose activity you want to analyze.
3. On the **Advanced** menu, point to **Analysis**, and then click **User Activity**.

The **User Activity** dialog displays the following information.

Column Name	Description
System ID	The three-character ID of the system on which the user was active.
Client ID	The client ID of the system on which the user was active.
User Name	The name of the user whose activity is analyzed.
Role Name	The name of the role whose utilization is analyzed. If a transaction code is not included in the selected role, the **Role Name** field is blank.
Transaction Code	The transaction code that the user has used.
CPU Time	The CPU time (in seconds) that the user spent on a transaction code.
Percentage	The amount of time, expressed as a percentage, that the user spent on a transaction code. The percentages of all transaction codes that the user used add up to 100%.

The "SAP Consumption Analysis Details" Dialog

Use the **SAP Consumption Analysis Details** dialog to review the consumption for a particular user.

This dialog also provides insight into whether the consumed objects are part of a transaction profile, and enables you to directly add one or more consumed objects to a transaction profile.

For more information on reviewing and adding objects to a transaction profile, see Identifying Objects that are Included in Transaction Profiles.

The **SAP Consumption Analysis Details** dialog displays the following information.

Column Name	Description
System ID	The three-character ID of the system on which the consumption occurred.
Client	The client ID of the system on which the consumption occurred.
User Name	The name of the user whose consumption is analyzed.
Month	The month in which the usage occurred.
Object	The name of the object that was used.
Module Name	The name of the SAP Basis Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.

Column Name	Description
Sub Module Name	The name of the SAP Sub Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.
Transaction Profiles	The name of the transaction profile that contains the object.
Entry Type	The entry type of the object (`T` = Transaction, `J` = Job, `R` = Report).
Job Name	The name of the job (available only if the entry type was a Job).
Task Type	The task type that was used.
CPU Time	The CPU time (in seconds) that was spent.

You can directly add objects from this dialog to a transaction profile. For more information, see Identifying Objects that are Included in Transaction Profiles.

Viewing Consumption Details in the Role Utilization Report

To view consumption analysis details in the Role Utilization report:

1. In the Role Utilization report, select the user for whom you want to display consumption details.
2. Click **View**.

Module Usage Report

The Module Usage report analyzes the proportionate usage of SAP modules by the user. This usage data could be used to provide a base for user classification in SAP. For example, users that use only industry-specific add-ons can be identified and classified accordingly. Information from this report can be useful to set up transaction profiles.

Information on the module hierarchy is only available in the Module Usage report if the Satellite transport was installed on the corresponding SAP systems. If the module hierarchy cannot be retrieved, the columns **SAP Basis Module** and **SAP Sub Module** in this report will not be populated. For more information on the Satellite transport, see the *FlexNet Manager for SAP Applications Installation Guide* PDF.

Creating a Module Usage Report

To create a Module Usage report:

1. In FlexNet Manager Suite, click **SAP**, point to **Analysis Tools** and click **Module Usage**.

   The **Module Usage** page is displayed.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. Optionally, specify selection criteria. In the **Selection Details** section, you can limit the report to the following

criteria:

- **System Landscape**—Select the system that should be used for the analysis.

  Tip: *To minimize delay in generating your report, you may select only one system at a time from this list.*

- **Date from**—Select the first month from the menu for which the module usage data should be evaluated.
- **Date to**—Select the last month from the menu for which the module usage data should be evaluated.
- **Object**—Enter one or more object names to limit the report to specific objects. If you enter multiple objects, separate them with a semicolon.
- **Object type**—Select an object type from the menu to limit the report to specific object types (job, report, or transaction).
- **Task type**—Enter one or more task types to limit the report to specific task types. If you enter multiple task types, separate them with a semicolon.
- **Options**—Open the list and select the check boxes for the elements that should be displayed in the analysis results. The following elements are available:
  - **SAP Basis Module**—Indication per SAP basis module. This check box is selected by default.
  - **SAP Sub Module**—Indication on sub-module level.
  - **SAP Object**—Indication up to level Report/TCODE.
  - **Month**—Breakdown of results by months. You will receive a summary of the module usage over the period specified. If no period has been specified, you will receive a summary of all present data.
  - **System Information**—For evaluations across systems. This check box is selected by default. This means that a differentiation by system takes place.
  - **Client**—For evaluations across clients. This check box is selected by default. This means that a differentiation by client takes place.
  - **User Information**—For evaluations across users. This check box is selected by default. This means that a differentiation by user takes place.

4. Click **Refresh** to display the results.

Reading the Results of the Module Usage Report

When the results are displayed, you can sort users based on their CPU consumption to identify users with very high or very low CPU usage. Double-click a row to display detailed consumption data in a separate dialog. This shows how the consumption of the individual transactions, jobs, and reports make up the consumption that is displayed and for which object the consumption occurred.

Depending on your requirements, you can sort or filter the report, for example, by SAP module, user group, or the percentage of how much CPU time a user spends in specific modules.

The **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column	Description
System ID	The three-character ID of the system on which the module was used.
Client	The client ID of the system on which the module was used.
User Name	The name of the user whose consumption in the module is analyzed.
SAP Basis Module	The SAP Basis Module that was used. This column only contains data, if the module hierarchy for the corresponding system was retrieved.
SAP Sub Module	The SAP Sub Module that was used. This column only contains data, if the module hierarchy for the corresponding system was retrieved.
Month	The month in which the module was used.
Object	The object that was used.
CPU Time	The CPU time (in seconds) that was used.
% CPU	The amount of CPU time that the user spent in the module, expressed as a percentage of the total CPU time.
Account No.	The accounting number of the user.
Assign. To Special Version	The user's special version, if the user has been assigned one.
Chargeable Client ID	The two-character ID of the chargeable user's system client.
Chargeable From Date	The start date from which the chargeable user is representing this user.
Chargeable System ID	The three-character ID of the chargeable user's system.
Chargeable To Date	The end date until which the chargeable user is representing this user.
Chargeable User Name	The user name of another user who is representing this user.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Cost Center	The user's cost center.
Country Surcharge	The user's country surcharge, if the user has been assigned one.
Created On	The user's creation date.

Column	Description
Developer	Displays a check mark if the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Division	The user's division.
Email	The email address of the user on the system on which the user was identified.
First Name	The first name of the user whose consumption is analyzed.
Last Logon Date	The date when the user last logged on to the SAP system.
Last Name	The last name of the user whose consumption is analyzed.
License Type	The license type that is currently assigned to the user on the system.
Locked Status	Indicates whether the user is currently locked. Possible values: • 0: Not locked • 32: Locked by CUA administrator • 64: Locked by administrator • 128: Locked after failed logon
Max. Multiple Logon	The maximum number of simultaneous multiple logons that the user had in the specified period.
No. Of Multiple Logon	Displays how often the user was logged on multiple times in the specified period.
Telephone Extension	The user's phone extension.
Telephone Number	The user's phone number.
User Group	The group that the user belongs to.
User Type	The user type of the user.
Valid From	The start date of the user's validity period.
Valid To	The end date of the user's validity period.

FlexNet Manager Suite (On-Premises)

2024 R2

The "SAP Consumption Analysis Details" Dialog

Use the **SAP Consumption Analysis Details** dialog to review the consumption for a particular user.

This dialog also provides insight into whether the consumed objects are part of a transaction profile, and enables you to directly add one or more consumed objects to a transaction profile.

For more information on reviewing and adding objects to a transaction profile, see Identifying Objects that are Included in Transaction Profiles.

The **SAP Consumption Analysis Details** dialog displays the following information.

Column Name	Description
System ID	The three-character ID of the system on which the consumption occurred.
Client	The client ID of the system on which the consumption occurred.
User Name	The name of the user whose consumption is analyzed.
Month	The month in which the usage occurred.
Object	The name of the object that was used.
Module Name	The name of the SAP Basis Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.
Sub Module Name	The name of the SAP Sub Module that contains the object. This column contains data only if the module hierarchy for the corresponding system was retrieved.
Transaction Profiles	The name of the transaction profile that contains the object.
Entry Type	The entry type of the object (`T` = Transaction, `J` = Job, `R` = Report).
Job Name	The name of the job (available only if the entry type was a Job).
Task Type	The task type that was used.
CPU Time	The CPU time (in seconds) that was spent.

You can directly add objects from this dialog to a transaction profile. For more information, see Identifying Objects that are Included in Transaction Profiles.

Viewing Consumption Details in the Module Usage Report

To view consumption analysis details in the Module Usage report:

1. In the Module Usage report, select the user for whom you want to display consumption details.
2. Click **View**.

Managing Indirect Access

Every user who accesses SAP software directly or indirectly requires an SAP Named User license. Direct access means that a user directly accesses an SAP system. Indirect access means that a user accesses SAP software or SAP data via a remote (third-party) system. For example, a user who logs on to an HR portal, which in turn connects to an SAP system, indirectly accesses the SAP system.

Types of indirect access include the following:

- A remote (non-SAP) system communicates with an SAP system via remote function call (RFC), using one or more SAP service accounts.
- A remote (non-SAP) system communicates with an SAP system via web services, using one or more SAP service accounts.
- A remote (non-SAP) system communicates with an SAP system via SAP Process Integration (PI), using one or more SAP service accounts.
- An SAP system is used to generate a file containing data from SAP software. This file is then distributed to or used by many users or other non-SAP systems.

In all of these instances, a user does not log on directly to an SAP system. FlexNet Manager for SAP Applications can recognize indirect access that occurred via RFC, and collects relevant evidence. This evidence can be split into two categories: SAP user account evidence and remote system evidence.

With FlexNet Manager for SAP Applications, you can manage instances of indirect access and reduce potential liabilities due to indirect access. FlexNet Manager for SAP Applications helps your organization to consolidate user accounts from non-SAP systems with those from SAP systems so that if the same people are using SAP and non-SAP systems, the total number of Named User licenses that are required is unchanged even when including non-SAP systems.

Workflow

FlexNet Manager for SAP Applications identifies indirect access by collecting relevant evidence. The workflow of managing the indirect access evidence usually includes the following steps:

1. Viewing the evidence on the **Indirect Access** page (accessible under **Optimization**).
   For more information, see Viewing Remote System Evidence and Viewing SAP User Accounts Evidence.
2. Reviewing the evidence details and deciding whether indirect access has occurred.
   For more information, see Remote System Evidence and SAP User Accounts Evidence.
3. Creating a non-SAP system and linking evidence to it.
   For more information, see Linking Evidence to a Non-SAP System.
4. Hiding evidence if it does not need further action.
   For more information, see Showing and Hiding Remote System Evidence.
5. Importing user data, roles, and consumption data into the non-SAP system to enable optimization of the non-SAP system.
   For more information, see Importing Data into a Non-SAP System.
6. Creating an Indirect Access Evidence report to view the license consumption that is due to indirect access from

non-SAP systems.
For more information, see Creating an Indirect Access Evidence Report.

Collecting Indirect Access Evidence

FlexNet Manager for SAP Applications enables you to manage the following types of indirect access evidence:

- Remote system evidence—See Remote System Evidence for more information.
- SAP user account evidence—See SAP User Accounts Evidence for more information.

FlexNet Manager for SAP Applications runs reports to identify the different types of indirect access. The SAP Inventory Agent collects this evidence and makes it available for you to view in FlexNet Manager Suite.

You can control how often the SAP Inventory Agent collects the evidence. The procedure depends on where the data collection is initiated:

- Collection initiated on an inventory beacon: Schedule the collection of evidence directly on the inventory beacon. For more information, see Scheduling Tab.For more information, see *Scheduling Page* in the FlexNet Manager Suite online help.
- Collection initiated on the FlexNet Manager Suite server: Configure the scheduled task *Import SAP user and activity information*. Using this task is mandatory in implementations that do not use inventory beacons. For more information about the Task Scheduler, see `http://technet.microsoft.com/en-us/library/dd363654(v=ws.10)`.

By default, evidence is collected and displayed for the previous three months. Data is collected for entire months, after the last day of the month has passed (that is, from the first day to the last day of the month).

Remote System Evidence

FlexNet Manager for SAP Applications identifies evidence of remote systems that communicate with SAP systems. You can include these systems in the system landscape by linking them to a non-SAP system. This enables you to manage these remote systems in a similar way to normal SAP systems—that is, you can apply optimization rules and consolidate the users across the system landscape. For information about non-SAP systems, see Managing Evidence Using Non-SAP Systems.

Viewing Remote System Evidence

On the **Indirect Access** page (accessible under **Optimization**), the **RFC Connections** tab lists the remote systems (usually non-SAP servers) that are communicating with your organization's SAP systems.

The information on the **RFC Connections** tab helps you identify indirect access and decide whether further investigation of a particular system is needed. Each row in the grid represents a summary of a remote server. Each of these remote servers is connecting to one or more of your organization’s SAP servers, and is executing one or more remote function calls using one or more SAP user accounts. You can view the corresponding details on the remote system's details page (see Viewing Details of Remote System Evidence).

Column	Definition
Remote System	The host name of the remote (non-SAP) machine that is accessing the SAP system.
Number of RFC Calls	The number of RFC calls that were made from the remote system to an SAP system.
Number of Functions Used	The number of distinct RFC functions that were used by the remote system. To see details of the functions that have been used, and to determine whether data was imported into or out of SAP, open the **Remote System** page. For more information, see Viewing Details of Remote System Evidence.
Number of SAP Systems	The number of SAP systems to which the remote system communicated.
Number of Dialog Users	The number of Dialog users who logged on to the SAP system to execute RFC calls. A high number usually indicates that the users who are accessing the SAP data via the remote system are logging in to the SAP system directly—that is, no indirect access is taking place. If the number is low, this might indicate that the SAP data is accessed indirectly via a Dialog user account that is used incorrectly.
Number of Non-Dialog Users	The number of users with a user account type other than Dialog who logged on to the SAP system to execute RFC calls. If the value of this column is greater than zero, this indicates that a "non-human" (technical) user account was used to access SAP data, and the SAP data might be accessed by a larger number of users via the remote system.
Non-SAP Systems	The non-SAP system(s) to which this evidence is currently linked.
Hidden	**No** indicates that the evidence is always visible. **Yes** indicates that the evidence is visible only if the **Show hidden remote systems** check box is selected. For information about showing and hiding evidence, see Showing and Hiding Remote System Evidence.

For information about viewing the details of a remote system, see Viewing Details of Remote System Evidence.

FlexNet Manager Suite (On-Premises)

2024 R2

Showing and Hiding Remote System Evidence

If you find that specific instances of evidence do not need further action, you can hide the relevant rows in the grid on the **RFC Connections** tab. This enables you to focus on the evidence that requires attention.

To hide or show evidence on the RFC Connections tab:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.

2. On the **Indirect Access** page, click the **RFC Connections** tab. Do one of the following:

    a. To hide evidence, select the remote systems that you want to hide. In the **Tasks** section, click **Hide selected connections**.

    b. To show evidence, select the remote systems that you want to show. In the **Tasks** section, click **Show selected connections**.

Select the **Show hidden remote systems** check box if hidden remote systems should be visible on the **RFC Connections** tab. Selecting or clearing this check box will not change the display status of the remote systems (**Yes** or **No** in the **Hidden** column). Instead, it enables you to display or hide all remote systems that are marked as hidden. The setting of the **Show hidden remote systems** check box persists when you leave the **RFC Connections** tab and return to it later.

Viewing Details of Remote System Evidence

The **RFC Connection Details** page shows information about the activity of a particular remote server.

For example, you can see the SAP system(s) with which the remote server communicated, and the user accounts that were used. This can help you to determine whether the remote system is used to access SAP software indirectly.

To view the details of a remote system:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the **RFC Connections** tab. Select the remote system for which you want to display details and click **View**.

    Alternatively, double-click the remote system name.

The **RFC Connection Details** page opens. The following table describes the information provided.

Column	Definition
Remote System	The host name of the remote (non-SAP) machine that is accessing the SAP system.
SAP System	The ID of the SAP system to which the remote machine communicated.
User Name	The name of the user who indirectly accessed the SAP system.
RFC Program	The name of the RFC program that executed an RFC function.
Function Name	The name of the RFC function that was executed.
Number of RFC Calls	The number of RFC calls that were made from the remote system.
Total Execution Time	The total amount of CPU time that was consumed.
Data Sent	The amount of data that was sent from the remote system to the SAP system.
Data Received	The amount of data that was received by the SAP system.

SAP User Accounts Evidence

FlexNet Manager for SAP Applications collects evidence of SAP user accounts that show particularly high usage or that were used to concurrently log on to your organization's SAP systems. These user accounts are identified based on activity data collected by the SAP Inventory Agent, and the Work Time and Multiple Logons activity checks that were executed in the SAP Admin module.

Important: *As a prerequisite for viewing SAP user accounts evidence, the corresponding activity-checks data—Work Time and/or Multiple Logons—must have been imported from the staging database in the SAP Admin module. For more information, see Data Collection Using the Staging Database Monitor in the FlexNet Manager for SAP Applications User Guide PDF.For more information, see Data Collection Using the Staging Database Monitor.*

The Work Time activity check identifies user accounts that show long periods of activity that could indicate that a user is indirectly accessing SAP data. For example, if a user account executes a long-running job, this job might output SAP data into files which could then be distributed to non-SAP users or a non-SAP system.

The Multiple Logons activity check identifies user accounts that have been used to concurrently log on to SAP systems. A user account that was used by several people or non-SAP systems could indicate indirect access.

User accounts that are identified by the Work Time or Multiple Logons activity checks are listed on the **SAP User Accounts** tab on the **Indirect Access** page (accessible under **Optimization**). Based on the information presented on the tab, you can contact the administrator of the relevant SAP system who can then take appropriate measures to correct the situation, if necessary. You can link the user accounts that are indirectly accessing SAP data to a non-SAP system. This enables you to closely monitor these user accounts.

For information about non-SAP systems, see Managing Evidence Using Non-SAP Systems.

Viewing SAP User Accounts Evidence

You view SAP user accounts that show high usage patterns or that were used for concurrent logons on the **SAP User Accounts** tab on the **Indirect Access** page (accessible under **Optimization**). The information lists the SAP user accounts that were identified by the Work Time and Multiple Logons activity checks.

Column	Definition
System ID	The three-character ID of the system on which the SAP user account is active.
Client ID	The client ID of the SAP system on which the SAP user account is active.
User Name	The name of the user account that was identified by an activity check.
Account Type	The type of the account that was identified by an activity check.
Has Exceeded Min. Break Duration	Indicates whether user activity has exceeded the **Break Duration** value set for the Work Time activity check in the SAP Admin module. • `Yes` indicates that there has been an insufficient break in activity of this user account. • `No` indicates that a sufficient break was recorded.

Column	Definition
Has Multiple Logons	Indicates whether the user had multiple concurrent logons. • Yes indicates that the Multiple Logons activity check identified that the user account was used for concurrent logons. • No indicates that no concurrent logons were recorded.
Non-SAP Systems	If the user account that is indirectly accessing SAP data is linked to a non-SAP system, the relevant system name is displayed here. Otherwise, this column is empty.
Hidden	Indicates whether the evidence is hidden. • No indicates that the evidence is always visible. • Yes indicates that the evidence is visible only if the **Show hidden user accounts** check box is selected. For information about showing and hiding evidence, see Showing and Hiding Remote System Evidence.

For information about viewing detailed results of an activity check for a specific SAP user account, see Viewing Details of Remote System Evidence.

FlexNet Manager Suite (On-Premises)

2024 R2

Showing and Hiding SAP User Accounts Evidence

If you find that specific instances of evidence do not need further action, you can hide the relevant rows on the **SAP User Accounts** tab on the **Indirect Access** page. This enables you to focus on the evidence that requires attention.

To hide or show evidence on the SAP User Accounts tab:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the **SAP User Accounts** tab. Do one of the following:
   - To hide evidence, select the SAP user accounts that you want to hide. In the **Tasks** section, click **Hide selected user accounts**.
   - To show evidence, select the SAP user accounts that you want to show. In the **Tasks** section, click **Show selected user accounts**.
3. Select the **Show hidden user accounts** check box if hidden user accounts should be visible on the **SAP User Accounts** tab.

   Selecting or clearing this check box will not change the display status of the user accounts (**Yes** or **No** in the **Hidden** column). Instead, it enables you to display or hide all user accounts that are marked as hidden. The setting of the **Show hidden user accounts** check box persists when you leave the **SAP User Accounts** tab and return to it later.

Viewing Details of SAP User Accounts Evidence

The **SAP User Account Details** page contains two tabs—**Work Time** and **Multiple Logons**—that show the results of the relevant activity check. This information helps you decide whether indirect access has occurred and whether the SAP administrator of the affected SAP system needs to be contacted.

1. To view the details of SAP user account evidence:
2. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
3. On the **Indirect Access** page, click the **SAP User Accounts** tab. Select the user account for which you want to display details and click **View**. Alternatively, double-click the user account name.

   The **SAP User Account Details** page opens.
4. Click the relevant tab—**Work Time** or **Multiple Logons**—to display the corresponding activity check results.

Details in SAP User Accounts Evidence

Use the information on these two tabs to decide whether indirect access has occurred, and whether the SAP administrator of the affected SAP system needs to be contacted.

Work Time

The **Work Time** tab provides information that help you identify whether users made sufficient pauses in activity.

Column	Definition
System ID	The three-character ID of the system on which the SAP user account is active.
Client ID	The client ID of the SAP system on which the SAP user account is active.
User Name	The name of the user account that was identified by the activity check.
Account Type	The type of the account that was identified by the activity check.
Measurement Date	The date when the activity check was executed.
Period Start Date	The start date of the period during which the user's activities were recorded (as set in the **Business Activities** section of the **Execute Activity Checks** screen in the SAP Admin module).
Period End Date	The end date of the period during which the user's activities were recorded (as set in the **Business Activities** section of the **Execute Activity Checks** screen in the SAP Admin module).
SAP Table	The SAP table that was queried by the activity check.
Min. Break Duration	The minimum break duration that was exceeded (in seconds). The **Break Duration** value is set in the **Business Activities** section of the **Execute Activity Checks** screen in the SAP Admin module.

Column	Definition
Days Exceeded	The number of days that the minimum break duration was exceeded during the period specified by the start and end date. **Example:** If the date range was 30 days, and the **Days Exceeded** value was 10, then this indicates that the minimum break duration was exceeded 10 times during the 30-day period.

Multiple Logons

The **Multiple Logons** tab provides information about users with concurrent logons.

Column	Definition
System ID	The three-character ID of the system on which the SAP user account is active.
Client ID	The client ID of the SAP system on which the SAP user account is active.
User Name	The name of the user account that was identified by the activity check.
Account Type	The type of the account that was identified by the activity check.
Measurement Date	The date when the activity check was executed.
Period Start Date	The start date of the period during which the user's activities were recorded (as set in the **Business Activities** section of the **Execute Activity Checks** screen in the SAP Admin module).
Period End Date	The end date of the period during which the user's activities were recorded (as set in the **Business Activities** section of the **Execute Activity Checks** screen in the SAP Admin module).
Number of Multiple Logons	The number of times that the SAP user account was used to concurrently log on to an SAP system.
Peak Date	The date when the highest number of multiple logons occurred.

FlexNet Manager Suite (On-Premises)

2024 R2

Managing Evidence Using Non-SAP Systems

You use non-SAP systems to represent remote systems and to manage SAP user accounts that show multiple concurrent logons or a high usage pattern. Non-SAP systems are included in the system landscape, which enables you to apply optimization rules to the non-SAP systems and include their users in the user consolidation.

This section explains the following:

- How to use the predefined non-SAP system—see Using the Predefined Non-SAP System.
- How to view the details of a non-SAP system—see Viewing a Non-SAP System Details Page.
- How to create a non-SAP system—see Creating a Non-SAP System.

- How to link evidence to a non-SAP system—see Linking Evidence to a Non-SAP System.
- How to import user data, roles, and consumption data into a non-SAP system—see Importing Data into a Non-SAP System.

FlexNet Manager for SAP Applications contains a predefined non-SAP system called *FlexNet Manager for SAP Applications* that is automatically installed during setup. This predefined non-SAP system represents FlexNet Manager for SAP Applications and all FlexNet Manager for SAP Applications operators. By default, it is located in the default SAP system landscape.

Using the Predefined Non-SAP System

FlexNet Manager for SAP Applications contains a predefined non-SAP system called *FlexNet Manager for SAP Applications* that is automatically installed during setup. This predefined non-SAP system represents FlexNet Manager for SAP Applications and all FlexNet Manager for SAP Applications operators. By default, it is located in the default SAP system landscape.

The *FlexNet Manager for SAP Applications* non-SAP system is designed to help you manage the user accounts that are used to access your organization's SAP software and data via FlexNet Manager Suite. It contains the following:

- A list of all remote systems from which the SAP Inventory Agent collects SAP inventory data.
- A list of all FlexNet Manager for SAP Applications operators who have access to SAP functionality in FlexNet Manager Suite.

Viewing a Non-SAP System Details Page

The details page of a non-SAP system is accessible either from the System Landscape Editor or from one of the tabs on the **Indirect Access** page (accessible under **Optimization**).

When you use the System Landscape Editor, you can see all non-SAP systems at a glance.

- To view details via the System Landscape Editor:

  1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and clicking **System Landscapes**.
  2. On the **SAP System Landscapes** page, double-click the system landscape that contains the relevant non-SAP system.

     Alternatively, select the desired landscape and click **View**.
  3. On the **System Landscape:** *name* page, double-click the non-SAP system whose details page you want to view.

     Alternatively, select the desired system and click **View**.

  If evidence has already been linked to the non-SAP system for which you want to display details, you can also access the details page of the non-SAP system via the corresponding link on a tab on the **Indirect Access** page.

- To view details via the **Indirect Access** page:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the tab that contains the evidence that was linked to the non-SAP system. On the tab, click the hyperlinked name of the non-SAP system (in the **Non-SAP Systems** column) whose details you want to view.

Information on the Non-SAP System Details Page

You can access the details page of a non-SAP system using the System Landscape Editor or by clicking **Optimization** and selecting **Indirect Access**.

The Non-SAP system details page includes the following properties:

Property	Definition
System ID	The name of the non-SAP system as specified when the non-SAP system was created.
Description	The description of the non-SAP system.
System landscape	The name of the system landscape to which the non-SAP system belongs. By default, this is the system landscape in which the indirect access evidence was identified that was used as a basis for this non-SAP system. Clicking the hyperlinked system landscape name opens the details page of the system landscape in the System Landscape Editor. For more information, see The System Landscape Details Page.
Parent group	Like other systems, non-SAP systems can be organized in a hierarchy. This field shows the name of the parent group of which the system is a child. If the system does not belong to a parent group, this field is empty.
Remote system	The host name of the remote (non-SAP) machine that was identified as indirectly accessing the SAP system. The name is automatically added when you link this evidence to the non-SAP system. Clicking the hyperlinked remote system name opens the details page of the remote system. For more information, see Viewing Details of Remote System Evidence.
Type	The type of connectivity between the non-SAP system and the SAP system. • `Batch` — Transactions are carried out in batch mode. • `Interactive` — Transactions are carried out interactively. This field is only for information purposes and does not influence the connectivity type.
Direction	The direction of the data flow between the non-SAP system and the SAP system. • `In` — Data is flowing from the non-SAP system to the SAP system. • `Out` — Data is flowing from the SAP system to the non-SAP system. • `In/Out` — Data is flowing in both directions. This field is only for information purposes and does not influence the data flow.
SAP user accounts	The SAP user accounts that are linked to the non-SAP system, in the format *`SystemID-SystemNumber-ClientID\UserName`*.

Property	Definition
First name	The first name of the system owner.
Last name	The last name of the system owner.
Business phone number	The business phone number of the system owner.
Mobile phone number	The mobile phone number of the system owner.
Email	The email address of the system owner.
Location	The location of the system owner.
Created by	The name of the user who created the non-SAP system.
Last updated by	The name of the user who last updated the non-SAP system.
Created at	The date and time name when the non-SAP system was created.
Last updated at	The date and time when the non-SAP system was last updated.

Creating a Non-SAP System

You can create a non-SAP system in the following ways:

- Using the System Landscape Editor
- From one of the tabs on the **Indirect Access** page (accessible under **Optimization**).
- If you have deployed inventory beacons, you can create a non-SAP system on an inventory beacon. For more information, see Inventory Beacons

Creating a Non-SAP System Using the System Landscape Editor

Non-SAP systems will be visible in the corresponding system landscape.

When you create a non-SAP system using the System Landscape Editor, you do not need to immediately link any evidence to it.

To create a non-SAP system using the System Landscape Editor:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and clicking **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the landscape to which you want to add a system.
3. On the **System Landscape:** *name* page, in the **SAP Systems** grid, click **Add**.

4. On the **Select system type** dialog, select **Non-SAP** and click **OK**.
5. On the **Create New Non-SAP System** page, provide the system information. Full details are available in section Information on the "Create New Non-SAP System" Page.
6. Click **Create**.

Creating a Non-SAP System via the Indirect Access Page

Creating a non-SAP system using one of the tabs on the **Indirect Access** page enables you to immediately select the evidence that the non-SAP system represents. When you use this method, the **Non-SAP System** details page will be populated automatically with the selected evidence.

To create a non-SAP system via the Indirect Access page:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the tab that contains the evidence that you want to link to the new non-SAP system. Select the evidence in the grid and click **Add new non-SAP system**.
3. On the **Create New Non-SAP System** page, provide the required information.

   Full details are available on Information on the "Create New Non-SAP System" Page.
4. Click **Create**.

Information on the "Create New Non-SAP System" Page

Complete these details to identify your new non-SAP system.

Tip: *You can access this web page in two different ways. See Creating a Non-SAP System via the Indirect Access Page and Creating a Non-SAP System Using the System Landscape Editor for details.*

Field Name	Description
System ID	The name of the non-SAP system that you want to create. This field is required.
Description	The description of the non-SAP system that you want to create.
System landscape	The name of the system landscape to which you are adding the non-SAP system. This information is non-editable.
Parent group	Click the ellipsis button to assign the system to a parent group.
Remote system	The host name of the remote (non-SAP) machine that is identified as indirectly accessing the SAP system. This field is populated by linking remote system evidence to the non-SAP system. For more information, see Linking Evidence to a Non-SAP System.

Field Name	Description
Type	The type of connectivity between the non-SAP system and the SAP system. • **Batch**—Transactions are carried out in batch mode. • **Interactive**—Transactions are carried out interactively. This field is only for information purposes and does not influence the connectivity type.
Direction	The direction of the data flow between the non-SAP system and the SAP system. • **In**—Data is flowing from the non-SAP system to the SAP system. • **Out**—Data is flowing from the SAP system to the non-SAP system. • **In/Out**—Data is flowing in both directions. This field is only for information purposes and does not influence the data flow.
SAP user accounts	The names of the SAP user accounts (in the format *SystemID-SystemNumber-ClientID\UserName*) that were identified as indirectly accessing the SAP system. This field is populated by linking SAP user accounts to the non-SAP system. For more information, see Linking Evidence to a Non-SAP System.
First name	The first name of the system owner.
Last name	The last name of the system owner.
Business phone number	The business phone number of the system owner.
Mobile phone number	The mobile phone number of the system owner.
Email	The email address of the system owner.
Location	The location of the system owner.

Click **Create** to save your changes and create the new record.

Importing Data into a Non-SAP System

After you have created a non-SAP system and linked evidence to it, you usually create a list of users (and related data) of the remote systems. The following sections explain which data can be made available in a users list, and how to add, change, and delete this data.

You may import data in either of these ways:

- Prepare data in standard formats within spreadsheets or CSV files (see Preparing Data for Import) and import your prepared file (see Import Procedure).
- Use the Business Adapter Studio to create an adapter to connect to another database within your enterprise, and extract data directly for import. This option is suitable for those with advanced skills, comfortable with data mapping. For more information, see *Introducing the Business Adapter Studio* in *Using FlexNet Business Adapters*.

Users List

The users list of a non-SAP system shows the user data, roles, and consumption data that were imported from the remote system. The users list is located on the non-SAP system's details page and contains the following details (use the **Advanced > Choose Fields** option to display all fields you require).

Column Name	Description
User Name	The user ID of the user on the remote system.
First Name	The first name of the user on the remote system.
Last Name	The last name of the user on the remote system.
License Type	The license type that is currently assigned to the user.
Number of Roles	The number of roles that are currently allocated to the user. If the number is blue, you can click on it to see which roles are allocated to the user.
Valid from	The start date of the user's validity period.
Valid to	The end date of the user's validity period.
User Type	The user type of the user.
User Group	The group to which the user belongs.
Last Logon Date	The date when the user last logged on to the SAP system.
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Account No.	The accounting number of the user.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Cost Center	The user's cost center.
Division	The user's division.
Email	The email address of the user on the system on which the user was identified.
Tel. Extension	The user's phone extension.
Tel. Number	The user's phone number.

FlexNet Manager Suite (On-Premises)

2024 R2

Import Procedure

To add new data to the non-SAP system's users list, you can either populate an empty import file with new data, or

add the new data to an import file that already contains data that was previously imported. When you import the import file, new data will be added to the users list, and changed entries will be changed in the users list.

To import data into a non-SAP system's users list:

1. Use your preferred tool to prepare the spreadsheet or CSV file for import (for the permitted columns, see Preparing Data for Import).
2. In FlexNet Manager Suite, open the details page of the non-SAP system into which you want to import data. For more information, see Viewing a Non-SAP System Details Page.
3. On the **Non-SAP System:***name* page, in the **Users** section, click **Advanced** and select **Import**. Depending on the template that you want to import, click **Microsoft Excel** or **CSV** to open the **Import Excel File** or the **Import CSV File** dialog, respectively.
   - **To import a Microsoft Excel workbook:** In the **Import Excel File** dialog, select the check box for the type of data that you want to import: **User**, **Role**, or **Consumption**. Multiple selections are possible. Enter the path to the import file or browse to it to select it.
   - **To import a file in CSV format:** In the **Import CSV File** dialog, select the check box for the type of data that you want to import: **User**, **Role**, or **Consumption**. Enter the path to the import file or browse to it to select it.

   The page will refresh after the import and display the imported data.

After you have imported user data, roles, or consumption data, you can view the data in FlexNet Manager Suite. User data is available in the non-SAP system's users list. You can view role data using the Role Utilization report, and consumption data using the Consumption Analysis report. For more information, see Role Utilization Report and Consumption Analysis Report, respectively.

Preparing Data for Import

Standard-format spreadsheets or CSV files can be imported. Here are details of the supported format.

To enable FlexNet Manager for SAP Applications to optimize non-SAP systems (apply rules and consolidate users of non-SAP systems with users of SAP systems), you need to import information from the linked remote systems into the non-SAP system. This information usually includes user accounts, roles, and consumption data.

You can import the data using a comma-separated file (.csv) or Microsoft Excel workbook (.xls). You need to manually create a template, populate it with data and import it.

A .csv template can specify only one type of data (user, roles, or consumption). If you want to import all three types of data, you need to perform three separate import procedures.

A template in .xls or .xlsx format can contain three spreadsheets—one for each data type. This enables you to import all three data types in one step.

The following tables help you prepare the templates in Microsoft Excel or comma-separated format for importing user data, roles, or consumption data. They specify which information should be provided in the individual columns.

Columns for importing user data from remote systems

Column Name	Description
System ID	The name of the remote server from which the data is imported.
User Name	The user ID of the user on the remote system.
First Name	The first name of the user on the remote system.
Last Name	The last name of the user on the remote system.
License Type	The license type that is currently assigned to the user on the remote system.
Valid From	The start date of the user's validity period on the remote system.
Valid To	The end date of the user's validity period on the remote system.
Role	The role that has been assigned to the user on the remote system.
Role Valid From	The role's start date on the remote system.
Role Valid To	The role's end date on the remote system.
Email Address	The email address of the user on the remote system.
Accounting Number	The user's accounting number.
Phone Number	The user's phone number.
Phone Number Extension	The user's phone number extension.
User Group	The group that the user belongs to on the remote system.
Is Developer	Indicates whether the user currently has a developer license. • TRUE indicates that the user has a developer key. • FALSE indicates that the user does not have a developer key.
Cost Center	The user's cost center.
Company Name 1	The company name 1 of the user.
Company Name 2	The company name 2 of the user.
Department	The department to which the user belongs.
User Function	The function of the user within your organization.

Columns for importing roles from remote systems

Column Name	Description
System ID	The name of the remote server from which the data is imported.
Role Name	The name of the role that is used on the remote system.

Column Name	Description
Authorized Object	The name of the authorized object on the remote system.

Columns for importing consumption data from remote systems

Column Name	Description
System ID	The name of the remote server from which the data is imported.
User Name	The user ID of the user on the remote system whose consumption data is imported.
Consumption Date (YYYY-MM)	The month in which the consumption occurred on the remote system. Enter the month in the format `YYYY-MM` for each row.
Object	The name of the object that the user accessed.
CPU Time (s)	The CPU time that the user consumed on the remote system (in seconds). CPU times with up to three decimal points are supported.
Access Count	The number of times that the user accessed the object.

FlexNet Manager Suite (On-Premises)

2024 R2

Changing Data

Data that has been imported into a non-SAP system in FlexNet Manager for SAP Applications cannot be changed using the buttons in SAP mode on the FlexNet Manager Suite user interface. If you want to change data, you need to correct the corresponding entry in the import file and reimport it.

If you delete, add, or change role information in the import file and reimport it, the corresponding role information in the users list is deleted, added, or changed, respectively.

If you change the consumption data for a specific range in the import file and reimport it, this new range of consumption data overwrites the consumption data of that range in the users list.

It you change the user data in the import file and reimport it, the matching users are updated accordingly. New users are inserted. Deleted users are *not* removed from the users list.

For information about importing data into a users list, see Preparing Data for Import.

Deleting Data

The method for deleting data from a non-SAP system's users list depends on the type of data you want to delete.

- **User accounts**—Use the **Delete** button on the FlexNet Manager Suite user interface in SAP mode. For details, see the following task instructions.
  It is not possible to delete users in the users list by removing them from the import file and reimporting the file.

  When you delete a user account, all of the account's roles and consumption data are also deleted.
- **Role and consumption data**—Delete the appropriate data from the import file and reimport the file.

To delete users from a non-SAP system's users list:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and clicking **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that contains the non-SAP system from which you want to delete data. Alternatively, select the desired system landscape and click **View**.
3. On the **System Landscape:** *name* page, double-click the non-SAP system from which you want to delete data. Alternatively, select the desired system and click **View**.
4. In the users list, select the users who you want to delete.
5. Click **Delete**.

Deleting a Non-SAP System

When you delete a non-SAP system, the data that the system contains is no longer available.

To delete a non-SAP system:

1. In FlexNet Manager Suite, open the System Landscape Editor by clicking **SAP**, pointing to **Configuration** and clicking **System Landscapes**.
2. On the **SAP System Landscapes** page, double-click the system landscape that contains the system that you want to delete.
3. On the **System Landscape:** *name* page, in the **SAP Systems** grid, select the system that you want to delete, and click **Delete**.
4. In the **Delete system** dialog, click **Delete**.

Linking Evidence to a Non-SAP System

When you have identified indirect access evidence, you can link this evidence to one or more non-SAP systems. Linking evidence to a non-SAP system enables you to manage the indirect access (for example, to apply optimization rules and consolidate users).

Example

You identify (via the **RFC Connection Details** page) that two applications are running on a remote server that is connecting to one of your organization's SAP systems. Each of these two applications has its own list of users. In this scenario, you would create a non-SAP system for each application, and link the evidence (in this example, the remote server) to both non-SAP systems.

You can link evidence in either of two places:

- On one of the tabs on the **Indirect Access** page. Here, the process depends on whether you are linking to an existing non-SAP system (see Linking Evidence (to an Existing System) via the Indirect Access Page) or to a newly-recorded system (see Linking Evidence (to a New System) via the Indirect Access Page).
- From the details page of a non-SAP system (see Linking Remote-System Evidence Using the Non-SAP System

Details Page and Linking User-Account Evidence Using the Non-SAP System Details Page).

Linking Evidence (to an Existing System) via the Indirect Access Page

Linking evidence using one of the tabs on the **Indirect Access** page enables you to select the evidence first and assign it to a specific non-SAP system. When you use this method, the **Non-SAP System** details page will be populated automatically with the selected evidence.

To link evidence to an existing non-SAP system.

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the tab that contains the evidence that you want to link to the non-SAP system. Select the evidence and click **Link existing non-SAP system**.
3. On the **Select Non-SAP Systems** dialog, select the check box of the non-SAP system to which you want to link the evidence. You can link evidence to more than one non-SAP system.
4. Click **Save**.

Linking Evidence (to a New System) via the Indirect Access Page

You can link evidence to a new non-SAP system and create that non-SAP system in one process.

To link evidence to a new non-SAP system:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Indirect Access**.
2. On the **Indirect Access** page, click the tab that contains the evidence that you want to link to the new non-SAP system. Select the evidence and click **Add new non-SAP system**.
3. On the **Create New Non-SAP System** page, in the **System ID** field, enter the system ID of the new non-SAP system. In the **Connectivity** section, the **Remote system** field or the **SAP user accounts** field contains the evidence that you selected (depending on the type of evidence that you linked).

   Enter any additional information that is required. For more information on the **Create New Non-SAP System** page, see Viewing a Non-SAP System Details Page.
4. Click **Create**.

Linking Remote-System Evidence Using the Non-SAP System Details Page

To link remote-system evidence to a non-SAP system using the details page of the non-SAP system:

1. Open the details page of the non-SAP system to which you want to link evidence. For information on how to open the details page of a non-SAP system, see Viewing a Non-SAP System Details Page.
2. On the details page, click **Edit** to open it in write-enabled mode.
3. Under **Connectivity**, below the **Remote system** field, click **Add**.

4. In the **Select Remote Systems** dialog, select the check box or check boxes of the remote system evidence that you want to link to the non-SAP system. To ensure that all remote systems are displayed, select the **Show hidden remote systems** check box.
5. Click **OK**.
6. Use the **Type** field to specify the type of connectivity between the non-SAP system and the SAP system. This field is only for information purposes and does not influence the connectivity type. Select from the following values:
   - **Batch** — Transactions are carried out in batch mode.
   - **Interactive** — Transactions are carried out interactively.
7. In the **Direction** field, specify the direction of the data flow between the non-SAP system and the SAP system. This field is only for information purposes and does not influence the data flow. Select from the following values:
   - **In** — Data flows from the non-SAP system to the SAP system.
   - **Out** — Data flows from the SAP system to the non-SAP system.
   - **In/Out** — Data flows in both directions.
8. Click **Save**.

Linking User-Account Evidence Using the Non-SAP System Details Page

To link user-account evidence to a non-SAP system using the details page of the non-SAP system:

1. Open the details page of the non-SAP system to which you want to link evidence. For information on how to open the details page of a non-SAP system, see Viewing a Non-SAP System Details Page.
2. On the details page, click **Edit** to open it in write-enabled mode.
3. Under **Connectivity**, below the **SAP user accounts** field, click **Add**.
4. In the **Select User Accounts** dialog, select the check box or check boxes of the SAP user account evidence that you want to link to the non-SAP system. To ensure that all user accounts are displayed, select the **Show hidden user accounts** check box.
5. Click **OK**.
6. Click **Save**.

Unlinking Evidence from a Non-SAP System

To remove the link between evidence and a non-SAP system:

1. In FlexNet Manager Suite, perform the procedures described under Viewing a Non-SAP System Details Page to open the details page of the system that contains the evidence that you want to unlink.

2. On the **Non-SAP System:** *name* page, do one of the following:
   - To unlink remote system evidence, in the **Remote system** field, select the evidence that you want to unlink, and click **Remove**.
   - To unlink user account evidence, in the **SAP user accounts** field, select the evidence that you want to unlink, and click **Remove**.
3. Click **Save**.

Indirect Access Evidence Report

The Indirect Access Evidence report is available under **Analysis Tools** in the main navigation bar. This report analyzes the license consumption that is due to indirect access from non-SAP systems for a system landscape. It enables you to:

- See how indirect access influences the total license position.
- See how each individual non-SAP system influences the total license position.
- For each non-SAP system, display a list of all user accounts and their effect on the license position.

FlexNet Manager for SAP Applications contains a predefined non-SAP system called *FlexNet Manager for SAP Applications* that is automatically installed during setup. This predefined non-SAP system represents FlexNet Manager for SAP Applications and all FlexNet Manager for SAP Applications operators. By default, it is located in the default SAP system landscape.

Overview of SAP and Non-SAP Systems License Consumption

FlexNet Manager for SAP Applications automatically consolidates user accounts from non-SAP systems with those from SAP systems according to the User Consolidation settings. Many users who already have an appropriate license type on an SAP system are covered by this license for using non-SAP systems. Therefore, the license consumption of non-SAP systems may be considerably lower than the total number of non-SAP user accounts. However, each non-SAP system user who could not be consolidated with a matching SAP system user requires an appropriate license.

On the entry page for the Indirect Access Evidence report, you can see how many licenses are consumed due to indirect access from non-SAP systems, and how this affects your organization's total license position.

In addition, the entry page shows a breakdown of the different license types that are currently consumed on SAP and non-SAP systems in a system landscape. The **License Position** grid shows a detailed overview with the following information.

Column Name	Description
License Type	The SAP license type whose consumption across systems is analyzed.
Purchased	The number of licenses of a particular type that have been purchased.
Consumed (Total)	The number of licenses of a particular type that are consumed across all (SAP and non-SAP) systems.
Consumed (SAP Systems)	The number of licenses of a particular type that are currently consumed by SAP system users.

Column Name	Description
Consumed (Non-SAP Systems)	The number of licenses of a particular type that are currently consumed by non-SAP system users.

FlexNet Manager Suite (On-Premises)

2024 R2

Creating an Indirect Access Evidence Report

You create an Indirect Access Evidence report for a particular non-SAP system to display a list of all users who have accessed this system in a specified period. (The default period is three months; for information about how to define the period of indirect access evidence collection, see Collecting Indirect Access Evidence).

To create an Indirect Access Evidence report:

1. In FlexNet Manager Suite, click **SAP**, point to **Analysis Tools** and click **Indirect Access Evidence**.
2. On the **Indirect Access Evidence** page, under **Non-SAP Systems**, double-click the name of the non-SAP system that you want to analyze.

Reading the Results of an Indirect Access Evidence Report

The Indirect Access Evidence report enables you to see how each user influences the license position and why a user requires or does not require a Named User license on the non-SAP system.

An Indirect Access Evidence report contains the following information:

- **Non-SAP System Details**:
  - **System ID**: The name of the non-SAP system as specified when the non-SAP system was created.
  - **Description**: The description of the non-SAP system as specified when the non-SAP system was created.
  - **Connectivity Type**: The type of connectivity between the non-SAP system and the SAP system.
    For information on possible values, see Information on the Non-SAP System Details Page.
  - **Direction**: The direction of the data flow between the non-SAP system and the SAP system.
    For information on possible values, see Information on the Non-SAP System Details Page.
- **Named User License Consumption**: Shows how many licenses of a specific type are currently consumed.
- **User Accounts**:

Column Name	Description
User Name	The name of the user on the non-SAP system.
License Type	The license type that is recommended for the user (based on the active license rules and user consolidation settings).

Column Name	Description
Matching SAP User	If the user is identified as also having an account on an SAP system, the name of the user account on the SAP system is shown here. If the user does not have an account on an SAP system, this field is blank.
Matching SAP User License Type	The license type that is currently assigned to the SAP user account of the same user. If the user does not have an account on an SAP system, this field is blank.
Consumes a License	This field shows `Yes`, if the user of the non-SAP system needs to consume a license. This is the case in the following scenarios: • No matching SAP user was identified. • A matching SAP user was identified, but this user's license type does not cover the usage on the non-SAP system.
Reason	Informs why the non-SAP user consumes a Named User license.

FlexNet Manager Suite (On-Premises)

2024 R2

User Consolidation

The User Consolidation identifies all the unique users across the systems, based on the user primary records, and counts the users.

The User Consolidation requires you to specify which fields are used to combine users when running the License Administration Workbench (LAW). FlexNet Manager for SAP Applications uses this information to replicate the user consolidation performed by the LAW to establish a reference or baseline current license position. This baseline can then be used to identify potential improvements to the license position.

The settings in the User Consolidation are used every time FlexNet Manager for SAP Applications calculates its current baseline license position.

The User Consolidation is complemented by the Duplicate User rule. Therefore, you need to ensure that you select different criteria in the User Consolidation than in the Duplicate User rule.

For example, your organization might use the user name to combine users in the LAW. In this scenario, you would select the **User Name** check box in the User Consolidation, and the current license position would be calculated using this information. In the Duplicate User rule entry mask (**Optimization > Duplicate Users**), you might select the **Email Address** check box. In this case, the recommended license position is calculated on the basis that any user accounts with differing user names but the same email address are in fact the same user and therefore require only a single Named User license. For information on the Duplicate User rule, see Duplicate User Rule.

Usually, you configure the User Consolidation once, and you modify your settings only if you changed the way in which you combine users in the LAW.

Important: *Any changes in the User Consolidation affect every future license position calculation.*

The User Consolidation is divided into two sections—**General Criteria** and **Custom Criteria**—that offer different levels of ease-of-use and flexibility. You can use only general criteria, or only custom criteria, or a combination of both to configure the User Consolidation.

Tip: *The User Data Validation report in the SAP Admin module helps to ensure that user primary records are up to date and complete, which improves user consolidation results. For more information, see User Data Validation Report in the FlexNet Manager for SAP Applications User Guide PDF. For more information, see User Data Validation Report.*

General Criteria in the User Consolidation

The **General Criteria** section enables you to quickly select your search criteria from a list of fields most commonly used to consolidate users. During user consolidation, FlexNet Manager for SAP Applications finds all users that match all of the selected criteria. In most scenarios, you use this section only for your user consolidation.

Example: If you select the check box **User Name**, FlexNet Manager for SAP Applications will consolidate all users who have the same user name across different systems. If you select the check boxes **User Name** and **Email Address**, FlexNet Manager for SAP Applications will consolidate all users who have the same user name OR who have the same email address across different systems.

Custom Criteria in the User Consolidation

The **Custom Criteria** section offers a higher degree of flexibility as it enables you to specify the user primary record fields that have to be matched for the original and the duplicate user. In addition, you can define separate conditions for each user. The consolidation criteria (condition and matched field) for the original user and the duplicate user are then compared using one of the available comparison types, such as **Exact Match**, **Contains**, **Similar**.

You can add multiple sets of custom criteria to configure the User Consolidation.

The condition and match string must be authored in C#. Refer to the *FlexNet Manager for SAP Applications User Guide* PDF, section *Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules*, for a list of properties that can be used in the **Custom Criteria** section.Refer to the section Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules, for a list of properties that can be used in the **Custom Criteria** section.

The following comparison types are available for the custom criteria.

Compare by	Definition
Exact match	The search criteria for the original user must exactly match that of the duplicate user, but the search is not case sensitive.
Exact match (case sensitive)	The search criteria for the original user must exactly match that of the duplicate user, and the search is case sensitive.
Contains	The search criteria for the original user must contain that of the duplicate user, but the search is not case sensitive.
Contains (case sensitive)	The search criteria for the original user must contain that of the duplicate user, and the search is case sensitive.

Compare by	Definition
Similar (at least 90%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 90%.
Similar (at least 70%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 70%.
Similar (at least 50%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 50%.
Similar (at most 1 character)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 1 character.
Similar (at most 2 characters)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 2 characters.
Similar (at most 3 characters)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 3 characters.

Configuring the User Consolidation

You can use only general criteria, or only custom criteria, or a combination of both to configure the User Consolidation, and effectively specify the field or fields that SAP uses to consolidate users in the LAW.

To configure the User Consolidation:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **User Consolidation**.
2. On the **User Consolidation Configuration** page, in the **General Criteria** section, click **Edit** to switch to write-enabled mode.
3. Select the check box for each field that should be used to find users to be consolidated. The following criteria are available:
   - **User Name**
   - **Last Name, First Name**
   - **Email Address**
   - **Accounting No.**
   - **Phone No.**
   - **Phone No., Extension**
4. Click **Save**.

   In read-only mode, the criteria you selected are marked with **Yes**; unselected criteria are marked with **No**.
5. On the **Use Consolidation Configuration** page, in the **Custom Criteria** section, click **Add** to open the **Create Custom Rule** dialog. Provide the following information to define the custom criteria:

Name	Enter a name for the rule.
Active	Select this check box if you want the custom criteria to be used for consolidation.
Original user section – Condition	Enter the condition for your original user (optional).
Original user section – Match	Enter the field or an expression that should be matched for your original user.
Compare by	Select the option from the menu that defines the degree of similarity between the two search conditions. (See Custom Criteria in the User Consolidation for available options.)
Duplicate user section – Condition	Enter the condition for your duplicate user (optional).
Duplicate user section – Match	Enter the field or an expression that should be matched for your duplicate user.

6. Click **Create**.

Repeat steps 5 and 6 to define multiple custom criteria.

Previewing User Consolidation Results

After you have configured the User Consolidation, the preview enables you to validate that the settings you selected produce the expected results.

A preview is available only for custom criteria rules that have been marked as Active.

To preview the results of the User Consolidation:

1. Follow the steps described in the procedure under Configuring the User Consolidation.
2. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **User Consolidation**.
3. On the **User Consolidation** page, in the **Preview Results** section, click **Show duplicate recommendations**.

The **Preview Results** section provides the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
Duplicate Group #	The users that can be consolidated are presented in groups, and each consolidation group has a number which is shown in this column.
User Name	The User ID of the user on the system on which the user was identified.
First Name	The first name of the user on the system on which the user was identified.

Column Name	Description
Last Name	The last name of the user on the system on which the user was identified.
Result Reason	Gives details which rule produced the result.
Accounting Number	The user's accounting number.
Client ID	The client ID of the system on which the user was identified.
Email Address	The email address of the user on the system on which the user was identified.
Extension	The user's phone extension.
License Type (Current)	The license type that is currently assigned to the user on the system.
Phone Number	The user's phone number.
System ID	The three-character ID of the system on which the user was identified.

SAP Transaction Profiles

In FlexNet Manager for SAP Applications, you can bundle a number of SAP objects and entry types to form an *SAP transaction profile*. You use the features on the **Transaction Profiles:** *`system Landscape name`* page (available in FlexNet Manager Suite under **SAP > Optimization**) to create or edit a transaction profile. These features are also referred to as the *Transaction Profile Editor*.

You can use a transaction profile to do the following:

- Create rules that are based on SAP objects for license-type optimization.
- Run the Consumption Analysis report to show usage information for users, and to identify to which degree they executed transactions that are contained in the corresponding transaction profile. For information on the Consumption Analysis report, see Consumption Analysis Report.

In both scenarios, FlexNet Manager for SAP Applications will use the SAP objects and entry types specified in a profile to match them against reported user consumption data.

Working with transaction profiles is useful, for example, if you want to differentiate between operational actions and self-service actions. In such a scenario, you could create two transaction profiles, one that contains operational objects and another with self-service objects. You could then use these profiles for two instances of the Transaction Profile by Percentage rule. This will help you to identify users based on the objects they used, and assign the appropriate license types (in the current example, Professional User licenses and Employee Self-Service licenses).

Accessing the Transaction Profiles Page

Your transaction profiles are listed on the **Transaction Profiles:** *`system Landscape name`* page (available in FlexNet

Manager Suite under **SAP > Optimization**). Here you can create new profiles, view or modify existing profiles using the Transaction Profile Editor, or delete existing transaction profiles.

To access the Transaction Profiles: system landscape name page:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Transaction Profiles**.

   The **Transaction Profiles:** *system landscape name* page is displayed.

Transaction Profile Information

In the **Details** section, the **Transaction Profile:** *profile name* page contains the following information.

Element	Description
Name	Name of the transaction profile.
Description	Description of the transaction profile.
Created by	User ID of the user who created the transaction profile.
Created at	Date and time when the transaction profile was created.
Last updated by	User ID of the user who last updated the transaction profile.
Last updated at	Date and time when the transaction profile was last updated.

The table in the **Objects** section displays this information.

Column	Description
Object Name	The SAP object that is included in the profile, with or without wildcards.
Description	Description of the object.
Excluded from Profile	Contains a check mark if this object is excluded from the transaction profile. Note that exclusions take precedence over inclusions.
Type	Entry type(s) of the object that was consumed by a user (`Job`, `Non-SAP`, `Report`, or `Transaction`).
No. Of Matches	The number of objects that match the object you specified. The value refers to the objects that are installed on all SAP systems within the landscape (and not to objects consumed by users). If you use a wildcard in your object name, it might cover a variety of objects. If you entered a specific object, this number will be 1. If the value is 0, this could indicate that you entered an invalid object.
Created At	Date when the object was added.
Created By	User ID of the user who added the object.
Last Updated At	Date when the object was last updated.

Column	Description
Last Updated By	User ID of the user who last updated the object.

Creating a Transaction Profile

A transaction profile acts as a container for a list of SAP objects. After you created your transaction profile, you need to add SAP objects. For more information, see Adding SAP Objects to a Transaction Profile Using the Transaction Profile Editor.

To create a transaction profile:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Transaction Profiles**.
2. On the **Transaction Profiles:** *system Landscape name* page, click **Add**. The **Add SAP Transaction Profile** dialog opens. Enter the following information:
   - **Name**—The name of the profile you want to create.
   - **Description**—A description of the profile (optional).

   The name of the landscape for which this profile will be used is automatically entered in the **System Landscape** field.
3. Click **Create**.

The **Transaction Profile:** *profile name* page opens.

You can now add SAP objects to the transaction profile.

Populating a Transaction Profile with Objects

There are several ways to populate a transaction profile with objects:

- Using the Transaction Profile Editor. See Adding SAP Objects to a Transaction Profile Using the Transaction Profile Editor.
- Importing a list of objects using a prepared file. See Importing Objects into a Transaction Profile.
- Using the **SAP Consumption Analysis Details** dialog, after reviewing the objects that were consumed by a particular user. See Identifying Objects that are Included in Transaction Profiles.

Adding SAP Objects to a Transaction Profile Using the Transaction Profile Editor

You can add specific SAP objects (for example, /BDL/SDCC), or you can add objects using wildcards to cover a variety of objects. The following wildcards are supported:

- ***** substitutes several characters, for example, `CAT*` will match the objects CAT2, CATS, CATS_DA.
- **?** substitutes a single character, for example, `SE3?*` will match the objects SE30 and SE38 (but not SE38M, because SE3 is followed by more than one character).

To add SAP objects to a transaction profile using the Transaction Profile Editor:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Transaction Profiles**.
2. On the **Transaction Profiles:** *system landscape name* page, open the transaction profile to which you want to add SAP objects. Do one of the following:
   - Double-click the name of the desired profile.
   - Select the desired profile and click **View**.
3. On the **Transaction Profile:** *profile name* page, in the **Objects** section, click **Add**.
4. The **Add SAP Object** dialog opens. Select how you want to add SAP objects by selecting one of the following options:
   - **Object Name**—Select this option to manually type in the SAP objects. The wildcards * and ? are allowed.
     Description—Enter a description for the SAP object (optional).

     Type—Specify the entry type that must be matched by selecting the corresponding check box(es) (**Transaction**, **Report**, **Job**, or **Non-SAP**).
   - **Search Objects**—Select this option to search for SAP objects by typing an object name or a fragment of an object name into the **Search** box and pressing **Enter**. No wildcards are allowed.
     The list below shows all SAP objects containing the search term that have been used in the system landscape (for example, a search for `CAT` might return ALERTCATDEF, CAT2, CAT3, CATA). If the search returns a large list, you can filter the results.
     - To display only objects that have been consumed: Select the **Show only used objects** check box, and select the period during which the objects must have been consumed.
     - To filter the results: In the **Advanced** menu, click **Show Filter**. You can define filter options for the object name, the transaction profile that contains the object, and the object type. For more information about filtering, see Using Filters to Limit Data Size.For more information about filtering, see *Using Filters to Limit Data Size* in the FlexNet Manager Suite online help.

     Select the SAP objects that you want to add to the profile by selecting the corresponding check box(es). The **Transaction Profile** column indicates if objects are already included in other transaction profiles.

     Description—Enter a description for the SAP object (optional).
5. If you want to exclude the object that you are defining from the transaction profile, select the **Exclude this object from transaction profile** check box.
6. Click **Create**.

Importing Objects into a Transaction Profile

FlexNet Manager for SAP Applications enables you to import a list of objects into a transaction profile. Files can be

imported using the FlexNet Manager Suite interface (as described below), or using a tool called Business Importer (MGSBI.exe) that is installed with FlexNet Manager Suite and uses factory-built or custom “business adapters” to import business-related data. For information on the Business Importer, see the *Using FlexNet Business Adapters* PDF available through the title page of online help.

You can import object lists into an empty transaction profile or into a transaction profile that already contains objects. Objects can be imported independently of whether inventory data has already been collected from SAP systems.

When you import objects into a transaction profile that already contains objects, note the following:

- Existing objects that have the same transaction profile name and object name (**Transaction Profile Name** and **Object Name** fields in the import spreadsheet) as the objects that are imported are updated. That is, the **ObjectType**, **ExcludeFromProfile** and **Description** fields in the FlexNet Manager Suite database are overwritten with the values from the import spreadsheet.
- Existing objects with a different transaction profile name and object name are not affected by the import, and are added as new objects to the transaction profile.
- Objects that are duplicates (that is, objects that exist both in the transaction profile and in the import file, or objects that appear more than once either in the import file or in the transaction profile) will be overwritten so that the transaction profile will contain only one instance of an object.

Preparing your import file

Your import file must comply with following rules:

- The list must be a comma-separated file (.csv) or a Microsoft Excel workbook (.xls or .xlsx) that adheres to a specific column layout, see Column Layout of Import Files
- For Microsoft Excel workbooks, the sheet within the workbook must be named **TransactionProfile**.

How to import objects into a transaction profile using the Transaction Profile page:

1. In FlexNet Manager Suite, click **SAP** in the top section of the navigation menu and then navigate to **Optimization > Transaction Profiles**.

   The **Choose an SAP System Landscape** page displays.

2. Click on a landscape name.

   The **Transaction Profiles: [system landscape]** page displays.

3. In the **Name** column, double-click a transaction profile to open.

   The **Transaction Profile: [transaction profile name]** page displays.

4. In the **Objects** section, hover over **Advanced** > **Import** and choose either **Microsoft Excel** or **CSV** depending on the type of file you are importing.

   The **Import Excel File** or **Import CSV File** dialog displays.

5. Enter the **File location**, or click **Browse** to navigate to and select the file.

6. Click **OK**.

   The **Object** field displays a status message, such as `Commenced at [date and time].`

7. Refresh the page to update the status of the message or click the message to open the **Last Transaction Profile Import** for more details.

Column Layout of Import Files

The import files for a transaction profile must have the following column layout. If any of the columns is missing, the import will fail.

Column	Description
Transaction Profile Name	The name of the transaction profile into which objects are imported. For imports using the **Transaction Profile:** *name* page: • All objects are imported and assigned to the transaction profile into which they are currently imported. This is regardless of the value that was entered in the **Transaction Profile Name** column. For imports using the business importer: • Existing transaction profiles with the same name as the value specified in the **Transaction Profile Name** column will have any new objects added to them. • If no transaction profiles with the same name as the value specified in the **Transaction Profile Name** column exist, they will be created and objects are assigned to them. • If no value was entered in the **Transaction Profile Name** column, no transaction profile is created and no objects are added to any existing transaction profiles.
Object Name	The name of the object that should be added to the transaction profile. The wildcards * and ? are allowed. If this column is left blank, data in this row will fail to import.
Object Type	The type of the object. Supported values are: • T: Transaction • R: Report • J: Job • N: Non-SAP object If you want to provide multiple values, separate them using a semicolon (;), for example, `T;R;J;N`. If this column is left blank, the object is imported, but its **ObjectType** column will be blank.
Exclude From Profile	Indicates whether this object should be excluded from the profile. Supported values are Y (Yes) and N (No). If this column is left blank, the object is imported, and its value is set to the default value N (No).
Description	Optional description of the object.

Column	Description
System Landscape Name	When you import a file using the **Transaction Profile:** *name* page, this column is ignored. When you import a file via the business importer, this column should contain the name of the system landscape that contains the transaction profile into which data is imported, or in which the transaction profile should be created.

Identifying Objects that are Included in Transaction Profiles

When you review the user consumption data, you can identify which objects that have been consumed by a particular user are included or not included in a transaction profile. You can do this in the **SAP Consumption Analysis Details** dialog. This dialog is available in the following locations:

- Consumption Analysis report
- Module Usage report
- Role Utilization report
- **License Assignment Recommendations** tab on the **License Position** page.

After you review the objects that have been consumed by a user, you can add them to a transaction profile, if required.

To determine if objects that have been consumed by a particular user are part of a transaction profile, and add objects to a transaction profile:

1. Open the **SAP Consumption Analysis Details** dialog. To do so, in SAP mode in FlexNet Manager Suite, do one of the following:
   - Point to **Analysis Tools** and click **Consumption Analysis**. Make your selection in the **Selection Details** section. Click **Refresh**, then double-click a user.
   - Point to **Analysis Tools** and click **Module Usage**. Make your selection in the **Selection Details** section. Click **Refresh**, then double-click a user.
   - Point to **Analysis Tools** and click **Role Utilization**. Make your selection in the **Selection Details** section. Click **Refresh**, then double-click a user.
   - Point to **License Position** and click **Current Position**. Below the **User License Summary** tab, click **Show user license recommendations**. Double-click a recommendation.
2. In the **SAP Consumption Analysis Details** dialog, the **Transaction Profile** column displays the transaction profile that contains the object.
3. To add objects to a transaction profile, select the object or objects that you want to add.
4. Open the **Advanced** menu, select **Transaction profiles**, and click **Add all** to add all objects, or click **Add selected** to add only the selected objects.
5. In the **Add SAP Transaction Profile** dialog, select one of the following options:

- **Transaction profile name**: Select this option to create a new transaction profile. Enter the name of the new profile and add a description (optional).
- **Search transaction profiles**: Select this option to search for existing transaction profiles to which the objects should be added. Type a profile name or a fragment of a profile name into the **Search** box and press **Enter**. No wildcards are allowed.
  The list shows all transaction profiles containing the search term that are available in the system landscape. If the search returns a large list, you can filter the results. For more information about filtering, see Using Filters to Limit Data Size.For more information about filtering, see *Using Filters to Limit Data Size* in the FlexNet Manager Suite online help.

  Select the transaction profiles to which you want to add the objects by selecting the corresponding check boxes.

6. Click **Create**.

Viewing Objects of a Transaction Profile

After you add objects to a transaction profile, you can display a list to verify which objects are matched in the transaction profile. This is especially useful if you specified objects using wildcards in the transaction profile, because you can see the name and the type of the SAP objects that have been matched. You can review this list, and adjust (add, edit, or delete) the objects in the transaction profile.

The values refer to objects that are installed on the analyzed SAP systems, and not to objects that have been consumed by users.

To display a list of objects in a transaction profile:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Transaction Profiles**.
2. On the **Transaction Profiles:** *system landscape name* page, open the transaction profile that you want to view. Do one of the following:
   - Double-click the name of the desired profile.
   - Select the desired profile and click **View**.
3. On the **Transaction Profile:** *profile name* page, in the **Tasks** section, click **View Objects** to display a list of all matched SAP objects.

   Use the **Back** button of your Web browser to return to the previous page.

Editing a Transaction Profile

To edit a transaction profile:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Transaction Profiles**.
2. On the **Transaction Profiles:** *system landscape name* page, open the transaction profile that you want to edit. Do one of the following:

- Double-click the name of the desired profile.
- Select the desired profile and click **View**.

3. On the **Transaction Profile:** *profile name* page, you can do the following:
   - Edit the information in the **Details** section. Click **Edit** to open the section in write-enabled mode. You can now modify the name and the description of the transaction profile. (The other information is read-only.) When you are finished, click **Save**.
   - Modify the SAP objects in the **Objects** section.
     To add an object, click **Add** to open the **Add SAP Object** dialog. Follow the instructions under Adding SAP Objects to a Transaction Profile Using the Transaction Profile Editor.

     To edit an object, select the object you want to modify and click **Edit** to open the **Edit SAP Object** dialog. You can change the SAP object in the **Object Name** field or modify the description. Select the corresponding check box (**Transaction**, **Report**, **Job**, or **Non-SAP**) for the entry type. When you are finished, click **Save**.

     To delete an object, select the object you want to remove and click **Delete**. In the **Delete Object** dialog, then confirm the deletion by clicking **Delete**.

Configuring Optimization Rules

This section answers the following questions:

- What are license rules? See Introduction to License Rules.
- Why are license rules grouped together in license rule sets? See Introduction to License Rule Sets.
- Which default rules does FlexNet Manager for SAP Applications offer? See Configuring Default License Rules.
- What is the Preview/Simulation function and what benefit does it have? See License Rule Set Simulations.
- What is the Duplicate User rule? See Duplicate User Rule.

Introduction to License Rules

FlexNet Manager for SAP Applications enables you to define license rules that are used in the license optimization process. These rules help you to identify the most appropriate license type for users. License rules are based on the user data and monthly consumption data that is imported from the SAP systems into FlexNet Manager Suite. (Note that consumption data is imported only for completed months.) License rules can be applied to SAP systems and non-SAP systems.

You define the license rules in FlexNet Manager Suite in SAP mode under **Optimization > License Assignment Rules**. To configure a rule, you need to specify the rule criteria as well as a license type. If the criteria of the rule are met (they usually resolve to true or false), the specified license type will be recommended. To make recommendations usable, they need to be released in FlexNet Manager Suite and imported into the SAP Admin module, where an SAP administrator can accept or reject them and update the user primary records accordingly. Only recommendations for SAP systems can be released to the SAP Admin module.

Each predefined license rule has a **Recommended license type** list from which you select the license type that should be recommended if the rule criteria are met. To make the full range of license types available in this list, you need to set

up the license-type hierarchy before configuring license rules. For more information, see License-Type Hierarchy.

You can tie individual license rules to systems, or alternatively, you can assign license rules grouped together in a license rule set to one or more systems. For information on assigning individual license rules or entire license rule sets to systems, see Assigning Rules and Rule Sets to Systems.

FlexNet Manager for SAP Applications automatically recalculates the current baseline and optimal license position on a regular basis, using all active rule sets. This helps to ensure that license managers always have an accurate and up-to-date view of their optimal SAP license position, including how the position has changed over time.

The running of rules is managed by the Microsoft Windows Task Scheduler and can be configured to meet your needs. To do this, open the Task Scheduler and configure the task **Import SAP user and activity information**. For information about the Task Scheduler, see `http://technet.microsoft.com/en-us/library/dd363654(v=ws.10)`.

As a first step, you would usually create a license rule set and then, in a second step, add rules to your set. Both processes are explained in more detail in the following sections.

Introduction to License Rule Sets

License rules are grouped together to form license rule sets.

Each license rule set is tied to a system, a system group, or an entire system landscape for which it can be active. Each rule within the set can also be assigned to specific systems or system groups. You can create multiple rule sets to cover specific parts of the system landscape. Where multiple rules or rule sets apply to the same system, FlexNet Manager for SAP Applications enables you to manage the precedence of rules or rule sets. For more information, see Changing the Order of Rules and Rule Sets.

You maintain your rule sets on the **License Assignment Rules:** *system landscape name* page. Here you can create, view, and delete rule sets.

To access the License Assignment Rules page:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

The **License Assignment Rules:** *system landscape name* page contains the following information (you can modify which columns are displayed using **Advanced > Choose Fields**):

Field	Details
Name	The name of the rule set.
Description	A description of the rule set (optional).
Number Of Systems	The number of systems covered by the rule set.
Order	Indicates the order in which the rule sets are applied.
Active	Indicates whether the rule set is active. Only active rule sets are used to calculate the optimal license position.

Field	Details
Date Created	The date when the rule set was first created.
Last Updated	The date when the rule set was last updated.
Created By	The user who created the rule set.
Last Updated By	The user who last updated the rule set.

Creating a License Rule Set

To create a license rule set:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system Landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system Landscape name* page, click **Add**.
4. On the **Create New License Assignment Rule Set** page, provide the following information:
   - **Name**—Enter a name for the new rule set.
   - **Description**—Enter a description for the new rule set (optional).
   - **Active**—If the rule set should be used to calculate the optimal license position, select the **Active** check box.
   - **Period**—Specify how many months worth of consumption and user data should be evaluated when the license rule set is applied. License assignments are calculated only on the basis of data of completed months.
   - **Ending**—Select **Now** if the consumption period should end on the last day of the previous month, or specify a month using the month selector.
5. Click **Create**.

Deleting a License Rule Set

To delete a license rule set:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system Landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system Landscape name* page, select the rule set that you want to delete and click **Delete**.

4. In the **Delete Rule Set** dialog, click **Delete** to confirm the deletion.

Viewing the Details of a License Rule Set

To display the details of a license rule set:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system landscape name* page, select the rule set that you want to view and click **View**.
4. The **License Assignment Rule Set:** *rule set name* page opens and displays detailed information on the rule set.

Adding Rules to a License Rule Set

To add rules to a license rule set:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system landscape name* page, double-click the rule set to which you want to add rules.

   The **License Assignment Rule Set:** *rule set name* page opens.

4. In the **Rules** section, click **Add**.
5. In the **Select Rule Type** dialog, select the rule that you want to add and click **OK**.

Copying a License Rule Set

You can copy license rule sets, which is useful for developing "What if" analyses. You can create copies of your rule sets with minor adjustments—for example, to model best-case and worst-case scenarios—and run simulations that incorporate all best-case rule sets at once. For information on license rule simulations, see Running a Simulation.

To copy a license rule set:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

3. On the **License Assignment Rules:** *system landscape name* page, select the rule set that you want to copy.
4. Open the **Advanced** menu and select **Make a Copy**.

A copy of the selected rule with the name *rule set (Copy x)* is added to the grid.

Tip: Best Practice for Modifying License Rule Sets

It is good practice to create copies of your rules instead of editing them, and to use meaningful naming conventions. For example, you could name the original set Rule Set v1.0. When a change is required, you could create a copy named Rule Set v1.1 and make any changes to this rule set. A simulation run against the old rules could be named, for example, Rule Set v1.0 run on 1 July 2019, and although now inactive, that rule set can be referenced in the future.

If an issue arises, you can easily roll back rule changes by making the new version inactive and the old version active.

Assigning Rules and Rule Sets to Systems

When you create a rule set, it is tied to the current system landscape by default. However, you can change the default system assignment to target only specific systems or system groups. You can also assign individual rules within the rule set to specific systems.

To change the default system assignment for individual license rules or rule sets:

1. Follow the steps described under Creating a License Rule Set to create a license rule set and Adding Rules to a License Rule Set to add rules to it.
2. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.
3. On the **License Assignment Rules:** *system landscape name* page, select the license rule set that you want to assign to a system, or select the license rule set that contains the rule for which you want to set an assignment. Click **View** to open the rule set.

   The **License Assignment Rule Set**: *rule set name* page is displayed.
4. If you wish to change the default system assignment for the current license rule set:
   a. In the **Tasks** section, click **Change default system assignment**.
   b. In the **Default System Assignment** dialog, select the check boxes for the systems or the system landscape to which you want to assign the license rule set.
   c. Click **OK**.

   Note: *The assignment that you set for the rule set will also apply to the rules that it contains, unless you set separate assignments for the individual rules.*
5. If you wish to change the default system assignment for an individual license rule:
   a. In the **Rules** section, select the rule and click **View**.
   b. In the **Tasks** section, click **Assign to systems**.

c. In the **Assign to Systems** dialog, select the check boxes for the systems or the system landscape to which you want to assign the license rule. To assign the rule to the same system(s) as the rule set to which it belongs, select the **Use default rule set assignment** check box.

d. Click **OK**.

Rules and Rule Sets in S/4HANA systems

You may choose to segregate your license assignment rules between classic Business Suite and S/4HANA systems.

To segregate your license assignment rules between classic Business Suite and S/4HANA:

1. Identify the license assignment rule you want to segregate.
2. Create a new license assignment rule which is the same type as the one you want to segregate.
3. Assign the new rule to S/4HANA systems using the **Assign to systems** action link on the rule details page.
4. Assign the existing rule to Classic systems using the **Assign to systems** action link on the rule details page.
5. Alternatively, you can create separate rule sets and assign one to Classic systems and the other to S/4HANA systems, using **Change default system assignment** action link on the rule set details page.

   See Assigning Rules and Rule Sets to Systems.
6. Review the order of rules or rule sets to ensure rules which apply to S/4HANA or Classic system are ordered before rules or rule sets that apply to all systems. This is required to prevent users from being matched against rules that apply to all systems.

   See Changing the Order of Rule Sets

Changing the Order of Rules and Rule Sets

The license rule sets, as well as the rules inside a license set, need to be arranged in the order in which they should be applied. The order is crucial because each rule is applied to a user account on a system until its conditions are met and the user account is assigned a license type. As soon as the user account is assigned a license type, the set of rules is applied to the next user account on the system and so forth (subsequent rules or rule sets will not be applied).

If a user has several accounts on the systems in a landscape, the user accounts are consolidated across systems into logical users. Each logical user is assigned a Named User License, based on the information in the license-type hierarchy that you define in FlexNet Manager Suite in SAP mode in the **License Types** section. This license type is recommended for the user. For more information on the license-type hierarchy, see License-Type Hierarchy.

Changing the Order of Rule Sets

To change the order of license-rule sets:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *`system landscape name`* page is displayed.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.

3. On the **License Assignment Rules:** *system Landscape name* page, in the **Tasks** section, click **Change rule set order**.
4. In the **Change Rule Set Order** dialog, select the rule set that you want to move and click the Up or Down arrow, to move it up or down in the rule order. To move multiple rule sets at once, hold the **Ctrl** key while selecting the rules.
5. Click **Save**.

Changing the Order of Rules

To change the order of license rules:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system Landscape name* page is displayed.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system Landscape name* page, do one of the following:
   - Double-click the name of the rule set that you want to edit.
   - Select the name of the rule set that you want to edit and click **View**.
4. On the **License Assignment Rule Set:** *rule set name* page, in the **Tasks** section, click **Change rule order**.
5. In the **Change Rule Order** dialog, select the rule that you want to move and click the Up or Down arrow, to move it up or down in the rule order. To move multiple rules at once, hold the **Ctrl** key while selecting the rules.
6. Click **Save**.

Previewing License Rule Results

You can preview the results of individual rules. This enables you to make adjustments to the rule, if necessary, before applying it.

To preview license rule results:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system Landscape name* page is displayed.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system Landscape name* page, double-click the rule set that contains the rule that you want to preview.
4. The **License Assignment Rule Set:** *rule set name* page opens. In the **Rules** section, double-click the rule for which you want to preview results.
5. In the **Preview Results** section, click **Show license recommendations**.

The rule results preview is based on the consumption data of the previous month and provides the following

information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
User Name	The User ID of the user on the system on which the rule was run.
First Name	The first name of the user on the system on which the rule was run.
Last Name	The last name of the user on the system on which the rule was run.
Result Reason	Gives details which rule produced the result.
Accounting Number	The user's accounting number.
Change Required	**Yes** indicates that a change of license type is recommended; **No** indicates that there is no recommendation to change the license type.
Client ID	The client ID of the system on which the rule was run.
Days Since Last Logon	The number of days since the user last logged on to the SAP system.
Developer	Indicates whether the user currently has a developer license. ***Note:*** *This field is currently not supported for S/4HANA systems.*
Email Address	The email address of the user on the system on which the rule was run.
Extension	The user's phone extension.
Inventory Date	The date of the last inventory.
Last Logon Date	The date when the user last logged on to the SAP system.
License Type (Current)	The license type that is currently assigned to the user on the system.
License Type (Recommended)	The license type that is recommended for the user.
Locked User	Displays a check mark if the user is currently locked.
Phone Number	The user's phone number.
Production User	Displays a check mark if the user is a production user.
System ID	The three-character ID of the system on which the rule was run.
System Type	Specifies whether the system is an SAP system or a non-SAP system.
User Creation Date	The date when the user was created on the SAP system.

Column Name	Description
User Group	The group that the user belongs to.
User Type	The user type of the user.

Configuring Default License Rules

After you have created a rule set, you can add rules to it and configure the rules.

In FlexNet Manager Suite, FlexNet Manager for SAP Applications provides predefined rules that you can configure according to your needs. These rules are described in more detail in the following sections:

- “Developer” Rule (not supported for S/4HANA systems)
- “Email Addresses” Rule
- “Last Logon” Rule
- “License Type” Rule
- “Locked User” Rule
- “Low Consumption” Rule
- “Non-Production SAP System” Rule
- “Roles” Rule
- “Total Consumption” Rule
- “Transaction Profile by Maximum Object Types Used” Rule
- “Transaction Profile by Maximum Objects Used” Rule
- “Transaction Profile by Percentage” Rule
- “Transaction Profile Limit” Rule
- “User Groups” Rule
- “User Names” Rule
- “User Types” Rule
- "Custom" Rule.

Retiring Users

When you configure a license rule, you define the rule criteria and select the license type that should be recommended if the rule criteria are met. In addition to changing the license type, you can retire users. When you retire a user, the user's Valid To date is changed so that the user is no longer valid and does not require a license. In the **Recommended License Type** list, that you find in each license rule configuration view, the setting for retiring users is **Retired user**.

Excluding Users from the License Position

In some cases it might not be appropriate to include a specific user account in the license position calculation. For these instances, you can select **Exclude from license position** as the license type that should be recommended if the conditions are met.

User accounts that are marked as **Exclude from license position** do not contribute to the license position and do not appear in the list of license recommendations on the **License Position** page or the **Simulations** page.

"Developer" Rule (not supported for S/4HANA systems)

Use this rule to assign all users with a developer key a specific license type.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

Note: *This rule matches users with a developer key set in the classic Business Suite. An S/4HANA system uses an authorization object to determine if a user is a developer; therefore this rule will not work for S/4HANA users.*

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Rule for** `Users with developer key`—This information is non-editable. It describes the condition that needs to be matched in order for a new license type to be recommended.
- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met. For this rule, the type **mySAP Business Suite Developer (55)** is preselected.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Email Addresses" Rule

This rule enables you to assign license types based on the user's email address.

Usage Scenario: This rule could be useful, for example, in a scenario where your company has acquired another organization and you want to assign all members of that organization self-service licenses.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Email Addresses**—Enter the email address or part of an email address that must match the email address of the user's account information in order for a particular license type to be recommended. You can use the wildcard characters * (to replace multiple characters) and ? (to replace one single character). Separate multiple email

address criteria with a comma or semicolon.

Note: *Only a single * wildcard character is currently supported in SAP custom rule sets. If a custom rule contains two or more * wildcard characters, the contents after the second * wildcard character will be ignored.*

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Last Logon" Rule

Use this rule to set the number of days of inactivity before FlexNet Manager for SAP Applications should recommend a specific license type.

Usage Scenario: This rule can help you identify users that have not logged on to the system in a specified time period. This could possibly indicate that they have left the organization and would not need their SAP license any longer.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Users not logged on for more than**—Enter the number of days that a user needs to be inactive in order for a new license type to be recommended.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"License Type" Rule

Use this rule to perform a mass change of license types.

Usage Scenario: You could use this rule if you recently updated your SAP contract and need to replace a specific license type with another license type.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **License Types**—Enter the license types that are currently assigned to users that should be changed to a new specific license type. Separate multiple license type values with a comma or semicolon.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Locked User" Rule

Use this rule to assign a specific license type to all users whose user account is locked.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Rule for** *Locked Users*—This information is non-editable. It describes the type of user that needs to be matched in order for a a new license type to be recommended.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

“Low Consumption” Rule

This rule enables you to assign license types based on the CPU time a user has consumed (used primarily for SAP systems), and based on the number of objects that were accessed (used primarily for non-SAP systems).

Usage Scenario: You could use this rule to identify users who should be assigned the Test User license type.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **CPU Time Limit**—Select this option if the rule is primarily for SAP systems. Enter the CPU value that should set the threshold for the license type assignment. FlexNet Manager for SAP Applications holds CPU times with up to four decimal points. If the consumed CPU time is equal to or lower than the threshold, the rule condition is met and the license type you specify is recommended. If you specify a CPU limit of 0, this will match all users with exactly zero CPU consumption data.
- **Object execution limit**—Select this option if the rule is primarily for non-SAP systems. Enter the threshold value for the license type assignment. The value represents the maximum number of times that an object has been accessed.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

“Non-Production SAP System” Rule

Use this rule to assign a specific license type to all users on non-production SAP systems.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Rule for** *`Users from non-production SAP systems`*—This information is non-editable. It describes the type of user that needs to be matched in order for a a new license type to be recommended.

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Roles" Rule

Use this rule to maintain the assignment of license types to user roles. User roles enable users to perform certain transactions in SAP. FlexNet Manager for SAP Applications enables you to assign a license type to a role.

Usage Scenario: If you have a small number of well-managed roles that accurately represent the employees' responsibilities, mapping roles to license types can be a simple way of determining appropriate license types (assuming that all users make use of all responsibilities to which they have been assigned).

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Roles**—Specify the role or roles that are currently assigned to users, which should be used as a basis for license recommendation. You can use the wildcard characters * (to replace multiple characters) and ? (to replace one single character). For example, you can enter the role SAP_BC_*. As a result, all roles starting with 'SAP_BC_' are taken into account. Separate multiple roles with a comma or semicolon.

  Note: *Only a single * wildcard character is currently supported in SAP custom rule sets. If a custom rule contains two or more * wildcard characters, the contents after the second * wildcard character will be ignored.*

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

“Total Consumption” Rule

Use this rule to assign the license type based on the amount of CPU time that a user has consumed (used primarily for SAP systems) or based on the number of times that an object was accessed (used primarily for non-SAP systems).

Usage Scenario: If all employee license types have already been accounted for in other rules, you could use the Total Consumption rule to differentiate between a Professional and a Limited Professional user.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Total CPU time from ... to ...**—Select this option if the rule is primarily for SAP systems. Specify the lower and upper threshold value for the CPU time that must have been consumed in order for a new license type to be recommended.
- **Total object execution from ... to ...**—Select this option if the rule is primarily for non-SAP systems. Specify the lower and upper threshold value for the total number of times that an object must have been accessed in order for a new license type to be recommended.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

“Transaction Profile by Maximum Object Types Used” Rule

Use this rule to identify users who access a limited number of specified objects of each specific type (transaction, report, and job). The criteria for a suggestion are met only if the counted numbers for all object types are below or equal to the specified maximum value. If one of the values is exceeded, no license type suggestions are made.

The main difference from the “Transaction Profile by Maximum Objects Used” Rule is that, for the “Transaction Profile by Maximum Object Types Used” rule, you define a threshold for each individual object type.

To be able to use this rule, you must have created a transaction profile beforehand. For information about transaction profiles, see SAP Transaction Profiles.

Usage Scenario: You could use the Transaction Profile by Maximum Object Types Used rule to distinguish between a Professional and a Limited Professional user, based on the breadth of SAP operations being used.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Transaction Profile**—Select the name of the transaction profile that should be matched against the reported user consumption data. The transaction profile defines the scope of the objects that are considered by this rule.
- **Maximum transaction used**—Enter the maximum number of different transactions that were run by the user.
- **Maximum report used**—Enter the maximum number of different reports that were run by the user.
- **Maximum job used**—Enter the maximum number of different jobs that were run by the user.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

“Transaction Profile by Maximum Objects Used” Rule

Use the “Transaction Profile by Maximum Objects Used” rule to assign users who did not use more than a certain number of objects that are defined in a transaction profile a specific license type. A license type is suggested if the counted number of objects is lower than or equal to the specified maximum number.

The main difference from the “Transaction Profile by Maximum Object Types Used” Rule is that, for the “Transaction Profile by Maximum Objects Used” rule, you define a single threshold for all objects.

To be able to use this rule, you must have created a transaction profile. For information about transaction profiles, see SAP Transaction Profiles.

Usage Scenario: You could use the Transaction Profile by Maximum Objects Used rule to distinguish between a Professional and a Limited Professional user, based on the breadth of SAP operations being used.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Transaction profile**—Select the name of the transaction profile that should be matched against the reported user consumption data. The transaction profile defines the scope of the objects that are considered by this rule.
- **Max. number of objects used**—Enter the maximum number of different objects that were used by the user.

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Transaction Profile by Percentage" Rule

Use the "Transaction Profile by Percentage" rule to identify users who executed a certain group of transactions, or, in other words, users who match a transaction profile that you created.

To be able to use this rule, you must have created a transaction profile. For information about transaction profiles, see SAP Transaction Profiles.

Usage Scenario: This rule enables you to differentiate between users who perform operational actions and those who perform self-service actions, and assign them the appropriate license type.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Transaction Profile**—Select the name of the transaction profile that should be matched against the reported user consumption data.
- **CPU time percentage**—Select this option if the rule is primarily for SAP systems. Enter the percentage value that indicates the degree of similarity between the transaction profile and the evaluated user (based on the CPU time a user spent within the transaction code(s) of the transaction profile).
- **Object execution percentage**—Select this option if the rule is primarily for non-SAP systems. Enter the percentage value that indicates the degree of similarity between the transaction profile and the evaluated user (based on the number of objects of the type *Non-SAP* that were executed within the specified transaction profile).

Note: *No rounding is applied to this rule. Therefore, if you specify a threshold of 100%, every transaction, or every object executed by the user must be within the specified profile.*

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be

recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Transaction Profile Limit" Rule

Use the Transaction Profile Limit rule to assign a license type based on a transaction profile that a user must match or is not allowed to match.

To be able to use this rule, you must have created a transaction profile. For information about transaction profiles, see SAP Transaction Profiles.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Mandatory transaction profile**—Select the transaction profile that contains the objects that must have been used in order for a license type recommendation to be made.
  You need to specify at least a mandatory transaction profile or an allowed transaction profile, or both.
- **Allowed transaction profile**—Select the transaction profile that contains the objects that are allowed, but not mandatory.
  If you specify an allowed transaction profile (but no mandatory transaction profile), at least one allowed object must have been used for a recommendation to be made. If you specify both an allowed transaction profile and a mandatory transaction profile, a recommendation is made if the objects in the mandatory transaction profile have been used.
- **Prohibited transaction profile**—Select the transaction profile that contains the objects that are forbidden. If a user matches a transaction profile that contains prohibited objects, no license type recommendation is made. Specifying a prohibited transaction profile is optional.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"User Groups" Rule

Use the User Groups rule to assign all users of a specific user group to a specified license type.

Usage Scenario: If you had a group called 'TEST', you could use this rule to assign all users in this group the Test User license type.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **User Groups**—Enter the group or groups whose users should be assigned a specific license type. You can use the wildcard characters * (to replace multiple characters) and ? (to replace one single character). Separate multiple groups with a comma or semicolon.

  Note: *Only a single * wildcard character is currently supported in SAP custom rule sets. If a custom rule contains two or more * wildcard characters, the contents after the second * wildcard character will be ignored.*

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"User Names" Rule

The User Names rule enables you to assign license types based on the user name.

Usage Scenario: This rule might be useful, for example, if you know—despite the lack of supporting usage data—that a specific user should receive a Professional license (the user might be a seasonal user who only performs operational tasks at the end of the financial year). You can define a rule specifically for this user, using their user name, rather than leaving it up to the SAP administrator to ignore that user's recommendation during remediation.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **User Names**—Enter the user name or part of a user name that must match the actual user name of the user's account information in order for a particular license type to be recommended. You can use the wildcard characters * (to replace multiple characters) and ? (to replace one single character). Separate multiple user names with a comma or semicolon.

Note: *Only a single * wildcard character is currently supported in SAP custom rule sets. If a custom rule contains two or more * wildcard characters, the contents after the second * wildcard character will be ignored.*

- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"User Types" Rule

Use the User Types rule to assign specific user types to a specified license type.

Usage Scenario: You could define a rule that all system users (user type B) should be assigned license type 91.

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **User Types**—Enter the user type or the user types that should be matched in order for a specific license type to be recommended. Separate multiple user types with a comma or semicolon.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

"Custom" Rule

The Custom rule gives you the flexibility to define exactly the rule criteria that you require.

The Custom rule is provided for advanced users with a knowledge of C# and .NET. It is based on the Windows Workflow Foundation Rules Engine by Microsoft. For information about the Windows Workflow Foundation Rules Engine, see `http://msdn.microsoft.com/en-us/library/aa480193.aspx`.

Syntax

The Custom rule must be authored in C#, with the following extensions:

- **Operator logical-AND**: Use && (usually used in .NET) or AND to create a rule where all properties should be matched.
  Example: `UserName == “JSmith” AND EmailAddress == “JSmith@mycompany.com”`
- **Operator logical-OR**: Use || (usually used in .NET) or OR to create a rule where either of the properties should be matched.
  Example: `UserName == “JSmith” OR UserName == “JShoemaker”`
- **Operator logical-NOT**: Use ! (usually used in .NET) or NOT to create a rule where a property should not be matched.
  Example: `NOT(UserName == “JSmith”)`
- **Comparing two values**: Use == or = to create a rule that compares two values.
  Example: `UserName = "JSmith" OR UserName = "JShoemaker"`

Properties and Methods

See Properties and Methods for a list of properties and methods that can be used to define a Custom rule.

Refer to the section Properties and Methods for a list of properties and methods that can be used to define a Custom rule.

Creating a Custom Rule

Refer to Creating a License Rule Set and Adding Rules to a License Rule Set for information on creating a rule set and adding rules to it.

To create your rule, specify the following information:

- **Name**—Enter the name of the rule.
- **Rule Set**—The rule set that contains your rule. This information is non-editable.
- **Condition**—Enter the conditions for the rule.
- **Recommended License Type** - Select the license type that should be recommended if the rule condition is met. Note that this license type set will be recommended for users within Classic Business Suite, S/4HANA and Non-SAP systems when the "Recommended License Type for S/4HANA" is set to "Same as above" (default).
- **Recommended License Type for S/4HANA** - Select the license type that should be recommended for S/4HANA users if the rule condition is met.
  Specify a license type other than "Same as above" for cases where matching S/4HANA users should be recommended a different license type from Classic Business Suite users.

When you have provided all necessary information, click **Create**. The rule will be run, and you can examine the results immediately by clicking **Show license recommendations** in the **Preview Results** section.

Custom Rule Usage Scenarios

Usage Scenario 1

The following custom rule condition assigns a specific license type to all professional users in the Finance role:

```
HasRoleMatch("Finance") AND GetTransactionProfilePercentage("Professional Profile") > 0.9
```

Usage Scenario 2

The following custom rule condition assigns a specific license type to all users who are assigned a specific combination of roles:

```
HasRoleMatch("Admin") AND HasRoleMatch("Accounting")
```

License Rule Set Simulations

You can simulate running a rule set on one or more SAP systems to determine how the changes affect your license position. This analysis is based on the data of the previous three months.

Simulations enable you to make adjustments to your rule set or rule sets, such as changing the order in which rules are run; and to work out the best-case scenario for your licensing situation, without having to change live data. Simulations can be run on active or inactive rules.

On the **Simulations** page in SAP mode, you can do the following:

- **View** simulation details to use them as reference for future optimization processes. For more information, see Viewing the Simulations History.
- **Delete** unwanted simulations. For more information, see Deleting Simulations.

It is not possible to release simulation results to the SAP Admin module.

Running a Simulation

You can simulate the application of one or more rule sets to see what outcome it will have before applying a rule set.

Tip: *You can create copies of your rule sets with minor adjustments and run simulations to identify the best possible results. For information on copying rule sets, see Copying a License Rule Set.*

To run a simulation of one of more rule sets:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **License Assignment Rules**.

   The **License Assignment Rules:** *system landscape name* page is displayed.

2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **License Assignment Rules:** *system landscape name* page, select one or more rule sets that you want to simulate.
4. In the **Tasks** section, click **Run Simulation**.
5. In the **Create New Simulation** dialog, enter a name and description (optional) of the simulation.
6. Click **Create**.

   The **Simulation:** *simulation name* page is displayed.

You can preview the results of the simulation in the grid in the **License Assignment Summary** section. It lists the license type and the corresponding description, the current number of licenses of a specific type (**No. of Licenses (Current)** column), and the projected number of licenses of a specific type that would be achieved if the rule set was applied in its current state (**No. of Licenses (Simulation)** column).

Viewing Simulations

To access the Simulations page:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Simulations**.

Deleting Simulations

In SAP mode, the **Simulations** page enables you to see all simulations. You can delete any unwanted simulations from the **Simulations** page.

To delete a simulation:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Simulations**.
2. On the **Simulations** page, select the simulation that you want to delete and click **Delete**.
3. In the **Delete Simulation** dialog, confirm by clicking **Delete**.

The simulation is removed from the list.

Simulation Details

The **Simulation:** *simulation name* page shows detailed information for a particular simulation. The page is structured in a similar way to the **License Position** page.

Details Section

The **Details** section provides the following information.

Option	Description
Name	The name of the simulation.
Description	A description of the simulation (optional).
System Landscape	The system landscape for which the simulation was created.
License position calculated at	The date and time when the simulation was created.
Status	The value **Simulation** indicates that this is a simulation.

Option	Description
Total	The number of individual recommendations that have been made available to the SAP Admin module for the purpose of updating the user primary records in the SAP systems.
Created by	The user name of the user who created the simulation.
Created at	The date and time when the simulation was created.
Last updated by	The user name of the user who updated the simulation.
Last updated at	The date and time when the simulation was updated.

License Assignment Summary Section

The **License Assignment Summary** section informs you about the current position and the optimal license position, grouped by license type. For more information, see the table in License Position — Named Users.

The **Show license recommendations** option below the summary view enables you to view detailed simulation results based on license rules (on the **License Assignment Recommendations** tab) and the Duplicate User rule (on the **Duplicate User Recommendations** tab).

For information about the content of both tabs, see Viewing License Assignment Recommendations and Viewing Duplicate User Recommendations.

Viewing the Simulations History

In SAP mode, the **Simulations** page enables you to see all simulations that have been run. You can view detailed information for each simulation, from a summary view to the individual recommendations.

To display simulation details:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Simulations**.
2. On the **Simulations** page, select the simulation for which you want to view more information, and click **View**.
3. The **Simulation:** *`simulation name`* page is displayed, and you can view the details of the simulation.

List of Simulations

In SAP mode in FlexNet Manager Suite, the **Simulations** page lists all rule set simulations that have been run.

Column Name	Description
Name	The name of the simulation.
Description	A description of the simulation (optional).
Date Created	The date and time when the simulation set was created.
Created By	The user who created the simulation.

Column Name	Description
Last Updated	The date and time when the simulation was last updated.
Updated By	The user who updated the simulation.

Duplicate User Rule

The Duplicate User rule helps you identify potential duplicate users across one or more systems. It does not differentiate between SAP and non-SAP systems.

A user might be counted more than once during system measurement if:

- The user is using several systems, but has a different user ID on each system.
- The user is using one system, but has multiple accounts on this system.

The Duplicate User rule can be used to identify user primary records of users that fail to be consolidated during user consolidation but who are actually the same person.

Note: *Because of the way the Duplicate User rule complements the User Consolidation, ensure that you select different criteria in the Duplicate User rule than in the User Consolidation.*

Example: A user has user accounts on two SAP systems, but in one account no email address is specified. If the User Consolidation is performed based on the email address field, these accounts will not be consolidated correctly, and two Named User licenses will be required for this user. A Duplicate User rule based on the field **Last Name, First Name** might identify these accounts as belonging to the same user. The SAP administrator can add the missing email address to the user primary record, and the User Consolidation will now consolidate the two accounts correctly.

You specify the selection criteria (fields in the user primary record, such as the user ID, user name, email address, and accounting number) that need to match in order for the rule to identify potential duplicate users. Optionally, you can define additional conditions to fine-tune the analysis. The Duplicate User rule analyzes the user primary data to identify such users. You are then presented with a list of potentially duplicate users, bundled in groups.

During license optimization analysis, the recommended license position factors in optimizations achieved by applying Duplicate User rules, and these results can be viewed in the **License Position** section in SAP mode in FlexNet Manager Suite. This applies to users of SAP systems and of non-SAP systems.

Further steps depend on the system type:

- In the **License Position** section, results for duplicate SAP system users can be released to the SAP Admin module. In the SAP Admin module, an SAP administrator can change the user data in the affected SAP systems so that the users can later be successfully consolidated.
- Results for duplicate users of non-SAP systems can not be sent to their original remote systems for remediation. Instead, an operator with suitable access rights would need to manually change the user data in the remote systems. After the user data has been changed, the updated user records should be imported into the FlexNet Manager Suite database so that the changes are reflected in the non-SAP system's users list.

By default, the Duplicate User rule is run across all available systems (SAP systems and non-SAP systems) in the landscape.

The Duplicate Users rule is divided into two sections—**General Criteria** and **Custom Criteria**—that offer different levels

of ease-of-use and flexibility. You can use only general criteria, or only custom criteria, or a combination of both to define your rule.

The **Activate** flag (located in the **Custom Criteria** dialog) enables you to activate custom criteria. The general criteria always apply and do not need to be activated.

General Criteria for the Duplicate User Rule

The **General Criteria** section enables you to quickly select your search criteria from a list of most commonly used fields to identify duplicate users. When the rule is run, FlexNet Manager for SAP Applications finds all users that match all the criteria you selected.

Example: A Duplicate User rule with the general criterion **User Name** will return all users who have the same user name across different systems. A Duplicate User rule with the general criteria **User Name** and **Email Address** will return all users who have the same user name OR who have the same email address across different systems.

Custom Criteria for the Duplicate User Rule

The **Custom Criteria** section offers a higher degree of flexibility, enabling you to specify the user primary record fields that have to be matched for the original and the duplicate user. In addition, you can define separate conditions for each user. The search criteria (condition and matched field) for the original user and the duplicate user are then compared using one of the available comparison types, such as **Exact Match**, **Contains**, **Similar**.

You can add multiple sets of custom criteria to define your Duplicate User rule.

The condition and match string must be authored in C#. See Properties and Methods for a list of properties and methods that can be used in the **Custom Criteria** section.Refer to the section Properties and Methods for a list of properties and methods that can be used in the **Custom Criteria** section.

The following comparison types are available for your custom Duplicate User rule.

Compare by	Definition
Exact match	The search criteria for the original user must exactly match that of the duplicate user, but the search is not case sensitive.
Exact match (case sensitive)	The search criteria for the original user must exactly match that of the duplicate user, and the search is case sensitive.
Contains	The search criteria for the original user must contain that of the duplicate user, but the search is not case sensitive.
Contains (case sensitive)	The search criteria for the original user must contain that of the duplicate user, and the search is case sensitive.
Similar (at least 90%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 90%.
Similar (at least 70%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 70%.

Compare by	Definition
Similar (at least 50%)	The search criteria for the original user must have a degree of similarity with that of the duplicate user of at least 50%.
Similar (at most 1 character)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 1 character.
Similar (at most 2 characters)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 2 characters.
Similar (at most 3 characters)	The search criteria for the original user must be similar to that of the duplicate user; they are not allowed to differ by more than 3 characters.

Defining a Duplicate User Rule

You can use only general criteria, or only custom criteria, or a combination of both to define a Duplicate User rule.

To define a Duplicate User rule:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Duplicate Users**.
2. On the **Duplicate User Rules** page, in the **General Criteria** section, click **Edit** to switch to write-enabled mode.
3. Select the check box for each field that should be used to find duplicate users. The following criteria are available:
   - User Name
   - Last Name, First Name
   - Email Address
   - Accounting No.
   - Phone No.
   - Phone No., Extension
4. Finish your selection by clicking **Save**.

   In read-only mode, the criteria you selected are marked with **Yes**; unselected criteria are marked with **No**.
5. On the **Duplicate User Rules** page, in the **Custom Criteria** section, click **Add** to open the **Create Custom Rule** dialog. Provide the following information to define the custom criteria:
   - **Name**—Enter a name for the rule.
   - Select the **Active** check box if you want the custom criteria to be used for license optimization.
   - **Original user** section – **Condition**—Enter the condition for your original user (optional).
   - **Original user** section – **Match**—Enter the field or an expression that should be matched for your original user.
   - **Compare by**—Select the option from the menu that defines the degree of similarity between the two search

conditions (see the table in Custom Criteria for the Duplicate User Rule for available options).

- **Duplicate user** section – **Condition**—Enter the condition for your duplicate user (optional).
- **Duplicate user** section – **Match**—Enter the field or an expression that should be matched for your duplicate user.

6. Click **Create**.

You can repeat steps 5 and 6 to create multiple custom criteria for your rule.

An organization wants to find hidden duplicates based on the format of the company email address. Therefore, the license administrator creates a duplicate rule with the following custom criteria:

- **Name**—`Company Email Format`
- **Original user** – **Condition**— `FirstName <> ""`
- **Original user** – **Match**— `FirstName + LastName + "@mycompany.com"`
- **Compare by**—`Exact match`
- **Duplicate user** – **Condition**—<not specified>
- **Duplicate user** – **Match**— `EmailAddress`

This custom rule will identify duplicate users who satisfy the following criteria:

- The first name and last name of the original user are correct.
- The duplicate user's email address has the required format `FirstNameLastName@mycompany.com`.

Previewing Duplicate User Rule Results

After you have configured the rule, you can preview its results. This enables you to make adjustments to the rule, if necessary.

A preview is available only for custom criteria rules that have been marked as Active.

Note: *Duplicate User rule criteria that have already been met by user consolidation rules are not considered as matches. In these cases, the* ***Result Reason*** *column displays an explanation. For information on the User Consolidation, see User Consolidation.*

To preview the results of the Duplicate User rule:

1. Follow the steps described in section Defining a Duplicate User Rule to create a Duplicate User rule.
2. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Duplicate Users**.
3. On the **Duplicate User Rules** page, in the **Preview Results** section, click **Show duplicate recommendations**.

The **Preview Results** section provides the following information (you can modify which columns are displayed using **Advanced > Choose Fields**).

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
Duplicate Group #	The duplicate users that have been identified are presented in groups, and each duplicate group has a number which is shown in this column.
User Name	The User ID of the user on the system on which the user was identified.
First Name	The first name of the user on the system on which the user was identified.
Last Name	The last name of the user on the system on which the user was identified.
Result Reason	Gives details which rule produced the result.
Accounting Number	The user's accounting number.
Client ID	The client ID of the system on which the user was identified.
Email Address	The email address of the user on the system on which the user was identified.
Extension	The user's phone extension.
License Type (Current)	The license type that is currently assigned to the user on the system.
Phone Number	The user's phone number.
System ID	The three-character ID of the system on which the duplicate user was identified.
System Type	Indicates whether the duplicate user was identified on an SAP system or a non-SAP system.

SAP Package Licensing

SAP packages are optional components for which additional licenses must be purchased. Each user who accesses a package requires a named user license.

SAP packages were formerly known as SAP Engines. This terminology may be more familiar to long-time SAP users.

FlexNet Manager for SAP Applications enables your SAP packages to be measured and the total license consumption of each SAP package across your organization to be determined. Where possible, the contribution of each SAP system towards your organization's total license consumption is also calculated.

Workflow of SAP Package Consumption Analysis

The usual package measurement and analysis workflow includes the following steps:

1. You ensure that package measurement data is available in the staging database in the SAP Admin module. Package measurement data can be collected from dependent SAP systems using the Staging Database Monitor or

by initiating the package measurement in the SAP Admin module. For more information, in the *FlexNet Manager for SAP Applications User Guide*, see *Data Collection Using the Staging Database Monitor* and *SAP Package Analysis in the SAP Admin Module*, respectively.For more information, see Data Collection Using the Staging Database Monitor and SAP Package Analysis in the SAP Admin Module, respectively .

2. Package data is imported directly from the SAP systems into FlexNet Manager Suite. For more information, see Collection of User Details and Consumption Data from SAP Systems.
3. FlexNet Manager for SAP Applications displays the list of identified packages in FlexNet Manager Suite. For more information, see Displaying SAP Packages in FlexNet Manager Suite.
4. You can manually add SAP packages or edit the details of packages. This step is optional. For more information, see Manually Adding Packages and Editing Package Information.
5. The package consumption is calculated, and you can view the results. For more information, see Previewing the Package Consumption and License Position — SAP Packages.

Package Metrics and Formulas

Package consumption is calculated using a combination of metrics (decimal values) in a formula. The metrics that are used for package licensing are unique to each package. The licensed units of each package are based on the objects that it contains. For example, the package *SAP Payroll Processing* uses the number of user primary records, while *SAP E-Recruiting* uses the number of employees. Other metrics include the number of orders, contracts, patients, etc.

In many cases, a single metric is the consumption (for example, the number of end users), or the formula to calculate the consumption is relatively simple (for example, metric1 + metric2). In rare cases, the formula is more complicated, and a different formula based on the SAP Basis release or SAP price list version may be required. When measured, SAP packages often return more metrics than is required for licensing purposes, making it difficult to determine which metric or metrics to use.

Package License Templates

For many packages, FlexNet Manager for SAP Applications provides predefined formulas and metrics, in addition to explanatory read-only information. These formulas are included in package license templates that are downloadable from the FlexNet Manager Suite website. These templates enable you to automate the calculation of the package consumption.

The package license templates are contained within the Product Use Rights Library (PURL). The PURL can be downloaded from the FlexNet Manager Suite website using a scheduled task. There are two scheduled tasks available for this purpose:

- The *Import SAP package license* scheduled task downloads only the PURL with SAP-related content.
- The *Recognition data import* scheduled task downloads updates to the Application Recognition Library (ARL), SKU library, and PURL, that are used by FlexNet Manager Suite.

Both of these scheduled tasks are enabled by default, and scheduled to run daily. If you only want to use the SAP mode of FlexNet Manager Suite to manage SAP licenses, it is recommended to activate the *Import SAP package license* scheduled task.

If you want to use the SAP mode and additional features of FlexNet Manager Suite to manage your SAP licenses or a wide range of licenses, it is recommended that you only activate the *Recognition data import* scheduled task. This is because using the FlexNet Manager Suite requires that the Application Recognition Library is installed.

For information on downloading and installing the Application Recognition Library, see the chapter *Updating the Application Recognition and SKU Libraries* in the *FNMP System Reference PDF*.

Important: *The licensing terms for SAP packages are encoded by FlexNet Manager Suite in the PURL and published regularly to simplify your licensing efforts. However, because licensing terms change over time, and can vary from one customer to another, you retain legal responsibility for ensuring that you model the exact terms of the licenses that you have purchased.*

Displaying SAP Packages in FlexNet Manager Suite

Before you can display SAP packages in FlexNet Manager Suite, the following preconditions must be met:

- Package measurement data is present in the staging database on the SAP Admin module. This can be achieved by doing the following:
  - You specify in the Staging Database Monitor in the SAP Admin module that package data should be collected from dependent SAP systems. For more information, see *Collecting Data from Dependent SAP Systems* in the *FlexNet Manager for SAP Applications User Guide* PDF.For more information, see Collecting Data from Dependent SAP Systems.
  - You initiate the package measurement in the SAP Admin module. For more information, see *SAP Package Analysis in the SAP Admin Module* in the *FlexNet Manager for SAP Applications User Guide* PDF.For more information, see SAP Package Analysis in the SAP Admin Module.
- The SAP Inventory Agent has been scheduled to import inventory data from the SAP Admin module or independent SAP systems. For more information, see Collection of User Details and Consumption Data from SAP Systems.

The SAP Inventory Agent imports the SAP package name, the package ID and any available metrics to be used to calculate the overall consumption. FlexNet Manager Suite tries to match the application IDs of the found packages against the application IDs of the packages in the FlexNet Manager for SAP Applications PURL. You can then view a list of the identified SAP packages on the **SAP Packages** page (available in SAP mode by pointing to **Optimization** and clicking **Packages**). FlexNet Manager Suite creates the required package licenses. The following scenarios are possible:

- If the imported package matches a package in the FlexNet Manager for SAP Applications PURL, the package license that is created will have a formula pre-populated. The package license is marked as active and immediately generates license consumption results (consumption results are visible on the **License Position** page).
- If the package is not found in the FlexNet Manager for SAP Applications PURL, a placeholder package license is created. The package license is marked as inactive (it is not included in the license position). To calculate this package's consumption, you must manually set this package to active and populate the formula.
  If you do not want FlexNet Manager for SAP Applications to calculate the consumption, you can set the package to active and set a self-declared amount.

  For more information, see Manually Adding Packages and Defining a Custom Formula.
- In special cases, multiple matches may be found in the FlexNet Manager for SAP Applications PURL for a package (because some application IDs may have multiple applicable license types). In this case, FlexNet Manager Suite

creates one package license for each license template that matches the application ID. Some of these licenses may generate zero consumption. If you want to remove a package license from your organization's license position, you can mark it as inactive.

Important: *It is recommended that you review the package licenses that are used for calculating your organization's license position to ensure that they model the exact terms of the licenses that you have purchased.*

Manually Adding Packages

If a new package matches a package in the FlexNet Manager for SAP Applications PURL, the package information will be automatically imported into FlexNet Manager Suite. However, if a matching package is not contained in the PURL (or a package is licensed to your organization based on a different business metric than is normal), you will need to manually add a package.

If FlexNet Manager Suite cannot find a match in the FlexNet Manager for SAP Applications PURL for a package that you are using, and you create a formula to calculate the package consumption, you are invited to share this information with FlexNet Manager Suite. Ask your registered support contact (a designated person within your enterprise who has access rights and login details) to open a new support case at https://community.flexera.com/t5/forums/postpage/board-id/@support, including a clear description of the issue. (In this case, identify the missing package information.) Flexera will endeavor to incorporate the package information into a future release of the FlexNet Manager for SAP Applications PURL.

To manually add a package:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages**: *`system landscape name`* page, click **Add**.
4. In the **Add a Package** dialog, do one of the following:
   - To search the downloadable content for packages, select **Search list of packages**.
     Select the package that you want to add.
   - To add a custom package, select **Custom package**.
5. Click **Create**.
6. On the **Create New SAP Package** page, provide the following information.

Option	Definition
Name	The name of the package.
Description	A description of the package (optional).
Active	Select this check box if the package should be included in the license position.
Factory comments	Read-only information on the package's license requirements.

Option	Definition
Number purchased	The number of licenses that your organization has purchased for this package.
Unit price	The price for one license for this package. The currency values that are available in the **Unit Price** field depend on the settings you selected when you installed FlexNet Manager Suite. If required, you can change the available currencies. For more information, refer to the *Configuring Currency Settings* chapter in the FNMP System Reference PDF.
Metric	The metric that is used for licensing the package. If you selected a package from the list of packages in the **Add a package** dialog (see step 4 above), this field is already populated.
Formula name	Select this option if FlexNet Manager for SAP Applications should calculate the package consumption. The corresponding field shows the formula that will be used. Depending on the package you selected, more than one *Formula name* field may be displayed. This information is available only if you selected a package from the list of packages in the **Add a package** dialog (see step 4 above).
Custom rule	Select this option if FlexNet Manager for SAP Applications should calculate the package consumption based on a custom formula, and enter the custom formula that should be used.
Self-declared amount	Select this option if the package consumption should not be calculated by FlexNet Manager for SAP Applications. This option enables you to keep a record of package licenses that cannot or should not be calculated, but that should be managed in FlexNet Manager Suite. Enter the number of package licenses that have been consumed.

7. Click **Create**.

The **SAP Package**: *name* page returns to read-only mode, and the package is added to the list of packages on the **SAP Packages**: *system landscape name* page.

You can preview the package consumption on the **Create New SAP Package** page, by clicking **Show package consumption** in the **Preview Results** section. For more information, see Previewing the Package Consumption.

Viewing Package Details

You can display information for each package on its details page.

To display the details page for a package:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages:** *system landscape name* page, do one of the following:
   - In the list of SAP packages, select the package for which you want to display details and click **View**.

- In the list of SAP packages, double-click the package for which you want to display details.
  The **SAP Package:** *name* page displays the package details.

SAP Package Details

Details Page—Details Section

Option	Definition
Name	The name of the package.
Active	**Yes** indicates that the package is included in the license position. **No** indicates that the package is not included in the license position.
Description	A description of the package (optional).
Factory comments	Read-only information on the package's license requirements.
Number purchased	The number of licenses that your organization has purchased for this package.
Unit price	The price for one license for this package. The currency values that are available in the Unit Price field depend on the settings you selected when you installed FlexNet Manager Suite. If required, you can change the available currencies.
Metric	The metric that is used for licensing the package.
Custom rule	The custom formula that is used to calculate the package consumption. This information is only displayed if a custom formula was provided.
Self-declared total	The number of package licenses that have been consumed. This number has not been calculated by FlexNet Manager for SAP Applications, but was typed in manually. This information is only displayed if a self-declared total was provided.
Formula name	The name of the predefined formula that is used to calculate the package consumption. This information is only displayed if a predefined formula is used.

Details Page—System Measurements Section

This section is only visible if the package has been measured in the SAP Admin module beforehand. It provides information on the measurement values (imported from the SAP Admin module) on which the package license calculation is based.

Option	Definition
Name	The name of the metric that is returned by SAP's own package measurement functions.
Metric ID	The metric ID that was used.
System ID	The system ID of the system that was measured.

Option	Definition
Client ID	The client ID of the client that was measured.
Period Type	The period type of the measurement.
Period End Date	The end date of the measurement period.
Value	The value that was produced by the measurement.

Click **Hide** in the section's upper right corner to hide this section, and click **Show** to display it.

Details Page—Preview Results Section

This section enables you to view a preview of the package consumption. For information about the contents of this section and how to create a preview, see Previewing the Package Consumption.

Editing Package Information

You can change the following package information: name, description, Active flag, number of purchases, and unit price. In addition, you can choose a predefined consumption formula (if available) or enter your own custom formula. For more information on defining a custom formula, see Defining a Custom Formula.

To edit the package information:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages:** *system landscape name* page, do one of the following:
   - In the list of SAP packages, select the package that you want to edit and click **Edit**.
   - In the list of SAP packages, double-click the package that you want to edit.

   The **SAP Package:** *name* page displays the package details.
4. On the **SAP Package:** *package name* page, click **Edit** to open the page in write-enabled mode.
5. Edit the package information. For information on editable fields, see the table in the procedure described under Manually Adding Packages.

   The currency values that are available in the **Unit Price** field depend on the settings you selected when you installed FlexNet Manager Suite. If required, you can change the available currencies.
6. Click **Save**.

Assigning Packages to Systems

FlexNet Manager Suite collects the package consumption on a per-system basis, and this consumption is then summed for all systems—or the entire landscape—to calculate your organization's overall package license consumption.

In SAP mode, on the package details page, you can select the SAP systems, system groups, or landscapes for which the

license consumption should be calculated. This enables you to exclude specific SAP systems, system groups, or landscapes from the package calculation (the package consumption from these systems will not be included in the license position).

To assign a package to a system or system landscape:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages**: *system landscape name* page, do one of the following:
   - In the list of SAP packages, select the package that you want to assign and click **Edit**.
   - In the list of SAP packages, double-click the package that you want to assign.

   The **SAP Package:** *name* page displays the package details.
4. On the **SAP Package:** *package name* page, in the **Tasks** section, click **Set assignment to systems**.
5. In the **Assign to systems** dialog, select the check boxes for the systems or system landscape to which you want to assign the package (default setting: entire landscape).
6. Click **OK**.

Defining a Custom Formula

You can define a custom formula for calculating the package consumption. The formula syntax for custom package formulas is similar to the syntax of custom license assignment rules and duplicate rules.

See Package Rule Properties and Methods for a list of properties and methods that can be used to define a custom package formula.

Refer to section Package Rule Properties and Methods for a list of properties and methods that can be used to define a custom package formula.

To define a custom formula for a package:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages**: *system landscape name* page, do one of the following:
   - In the list of SAP packages, select the package for which you want to define a custom formula and click **Edit**.
   - In the list of SAP packages, double-click the package for which you want to define a custom formula.

   The **SAP Package:** *name* page displays the package details.
4. On the **SAP Package:** *package name* page, click **Edit** to open the page in write-enabled mode.
5. Under **Consumption per system**, select **Custom rule**.
6. Enter the custom formula.

7. Click **Save**.

Deleting a Package

If you no longer want to display a package in the list of packages on the **SAP Packages** page, you can delete it.

Note that only manually added packages can be permanently deleted from this list. Packages that are automatically imported from the SAP systems will reappear after every import.

To delete a package:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages**: *system landscape name* page, select the package that you want to delete and click **Delete**.
4. In the **Delete Package** dialog, click **Delete** to delete the package.

Previewing the Package Consumption

On the package details page you can preview the consumption of a particular package. This preview is based on the selected package formula and the system-specific metric values. Previews can not be saved and will not appear in the license position.

To preview the package consumption:

1. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Packages**.
2. If you want to switch to a different landscape, click **Change Landscape** in the top-right corner of the page.
3. On the **SAP Packages**: *system landscape name* page, do one of the following:
   - In the list of SAP packages, select the package for which you want to display a consumption preview and click **View**.
   - In the list of SAP packages, double-click the package for which you want to display a consumption preview.

   The **SAP Package:** *name* page displays the package details.
4. In the **Preview Results** section, click **Show package consumption** to display the consumption for this package.

The **Preview Results** section contains the following information.

- **Total consumption**—This area shows the total consumption of the package, based on the metric that was used.
- **System Consumption**—This area shows the package consumption per system.

Option	Description
System ID	The ID of the system on which the package is used.

Option	Description
Client ID	The ID of the client on which the package is used.
Consumed	The number of units that the package has consumed.
Result Reason	This field can be used to provide additional context about a package consumption calculation.

If you changed any information, such as the formula or the metric, after you displayed the preview, you can refresh the preview results. To do so, click **Refresh**.

Click **Hide** in the section's upper right corner to hide this section, and click **Show** to display it.

For information on calculating the package consumption, see License Position — SAP Packages.

For information about other data that is available on the package details page, see Viewing Package Details.

13

Remediation in the SAP Admin Module

Remediation is the process of reviewing and acting on license-type recommendations that have been imported from FlexNet Manager Suite.

FlexNet Manager for SAP Applications calculates the optimal license position based on active rules and reports. This data is saved to its database in the form of license-type and duplicate user recommendations (see Regular Optimization of the SAP License Position in FlexNet Manager Suite). You need to release and accept these recommendations in SAP mode in FlexNet Manager Suite to make them available to the SAP Admin module. For information on releasing recommendations in FlexNet Manager Suite to the SAP Admin module, see Releasing Recommendations to the SAP Admin Module.)

When the recommendations are available to the SAP Admin module, the remediation process can begin. This usually comprises the following steps:

1. Importing the recommendations from SAP mode in FlexNet Manager Suite into the SAP Admin module. See Importing Recommendations.
2. Displaying the recommendations in the Process License Recommendations report or the Process Duplicate Users report.
3. Processing (accepting, rejecting, or overwriting) the recommendations.
4. Sending the changes to the dependent SAP systems that are connected to the SAP Admin module and committing them in the corresponding dependent SAP systems.

After a recommendation has been processed and committed, the SAP Admin module sends a notification to FlexNet Manager Suite. This notification includes the final status of the recommendation (for example, Accepted or Rejected), which will be saved in a dedicated table. This step ensures that the status of previous recommendations can be taken into account when you import new recommendations. For information on the status values, see License-Type Recommendation Status.

A separate report is available to display a history of the license-type recommendations that were released from FlexNet Manager Suite to the SAP Admin module. For more information, see Creating a Recommendation History Report.

Importing Recommendations

Before you import recommendations from FlexNet Manager Suite into the SAP Admin module, ensure that you have done the following:

- You released the recommendations in FlexNet Manager Suite.
- You accepted the recommendations in FlexNet Manager Suite, which makes them available to the SAP Admin module.

Importing the license-type and duplicate user recommendations is the first step in the remediation process.

You import the recommendations from FlexNet Manager Suite to process them in the SAP Admin module using the Process License Recommendations or Duplicate Users reports.

During the import, the Process License Recommendations and Duplicate Users reports are unavailable, to prevent data inconsistencies.

To import recommendations from FlexNet Manager Suite into the SAP Admin module:

1. In the Main menu of the SAP Admin module, click **Reporting** and select **Process Recommendations** to open the **Process Recommendations** screen. If new recommendations are available, the **Import** button is enabled.

   If recommendations are available in FlexNet Manager Suite that are more recent than the ones that have already been imported into the SAP Admin module, a warning message displays after you click **Process Recommendations**. In this case, click **Continue** to import the latest recommendations.
   If the recommendation set that was imported from FlexNet Manager Suite to the SAP Admin module is subsequently deleted in FlexNet Manager Suite, then you will be prompted to re-import a recommendation set into the SAP Admin module from FlexNet Manager Suite. This is to block access from recommendation sets that are considered no longer valid in FlexNet Manager Suite.

2. Click **Import**.

   The **Import recommendations from FNMP** dialog displays.

3. Click **OK** to import all available data (license-type recommendations and duplicate user lists).

The recommendations are imported into a dedicated table in the SAP Admin module. Existing recommendations will not be overwritten, but the following checks will be performed during the import:

- If a recommendation is made for a user who has an active Ignore date, the status of the imported recommendation will automatically be set to Ignored.
- If a recommendation is made for a user who already has a pending recommendation, the status of the old recommendation for this user will automatically be changed during the import from Pending to Unprocessed. This old recommendation can not be processed any more. There can only be one current recommendation for a user. Unprocessed recommendations are available in the Recommendations History report. For more information, see Recommendation History Report.

Note: *If any errors occur during the import, use transaction SM37 to find more information about the errors. This transaction also provides information about the number of imported recommendations and consumption details.*

Process License Recommendations Report

The Process License Recommendations report is based on the active license-type optimization rules that you configure and manage in FlexNet Manager Suite.

After FlexNet Manager Suite has identified the most appropriate license type for each user, you can release these recommendations (bundled with the duplicate user recommendations) to the SAP Admin module. For more information on license rules, see Introduction to License Rules.

The Process License Recommendations report lists the license-type recommendations, filtered, if required, by different criteria (for example, by system, user, license type, date range, or recommendation status).

You use this report to review the license-type recommendations and process them, that is, you accept, reject, or overwrite the recommendations. Afterwards, you commit these changes to the SAP database.

Creating a Process License Recommendations Report

Ensure that you have imported the recommendations from FlexNet Manager Suite into the SAP Admin module before running this report. For more information, see Importing Recommendations.

Create a Process License Recommendations report to list and process the license-type recommendations.

To create a Process License Recommendations report:

1. In the Main menu of the SAP Admin module, click **Reporting** and select **Process Recommendations**.

   The **Process Recommendations** screen provides an overview of all recommendations that have been imported over time into the SAP Admin module.

2. In the **Monitor** section, select the **License Recommendations** option. The following options are available:

   - To create an automated report that contains only recommendations of a specific status, in the **Monitor** section, click the number underneath the respective status. For information on the status types, see License-Type Recommendation Status.

Option	Description
Pending	Returns recommendations that have already been imported but have not yet been processed.
Accepted	Returns recommendations that have been imported previously and were accepted.
Rejected	Returns recommendations that have been imported previously and were rejected.
Overwritten	Returns recommendations that have been imported previously and for which the recommended license type was not accepted but instead changed to a different license type.
Ignored	Returns recommendations that have been imported previously but for which the status Ignore was set.
Total	Returns all available recommendations.

- If you want to create a customized report, specify your selection criteria in the **License Recommendations** section. If you leave a field blank, all values are automatically selected for the report.

Option	Description
RFC Destination	Enter the system ID or range of system IDs that should be included in the report.
User Name	Enter the user ID or range of user IDs that should be included in the report.
Original License Type	Enter the license type or a range of license types that should be included in the report.
Recommended Lic. Type	Enter the recommended license type or a range of recommended license types that should be included in the report.
Pending	Select this check box if you want to include recommendations that have already been imported but have not yet been processed.
Accepted	Select this check box if you want to include recommendations that have the status Accepted.
Rejected	Select this check box if you want to include recommendations that have the status Rejected.
Overwritten	Select this check box if you want to include recommendations that have the status Overwritten.
New License Type ... to ...	This option is available when you select the **Overwritten** check box. You can use it to further limit the report to specific license-type recommendations that were overwritten. To do so, enter the new license type or a range of new license types.
Ignored	Select this check box if you want to include recommendations that have the status Ignored.
Include systems with no RFC	Select this check box if you want to include recommendations that are assigned to a system for which a logical RFC destination has not been set in the system landscape. These recommendations can be displayed, but they can not be processed because the corresponding system can not be accessed via RFC.

3. Click **Execute** to execute the report.

The **Process License Recommendations** screen opens where you can evaluate the recommendations.

After you evaluated the recommendations, you can accept, reject, overwrite, and reset the recommended license type for each user. For information, see Processing License-Type Recommendations.

Information in the Process License Recommendations Report

Review the following information in the **Process License Recommendations** screen to decide how to process the recommendations.

Column Name	Description
System	The system (uniquely identified by its RFC destination) on which the user is active.

Column Name	Description
System ID	The three-character ID of the system on which the user was identified.
Client	The client ID of the system on which the user was identified.
S/4HANA	Displays a check mark if this is an SAP S/4HANA system. No check mark indicates that the system is a classic SAP Business Suite system.
User Name	The user ID of the user for whom a change of license type is recommended.
First Name	The first name of the user for whom a change of license type is recommended.
Last Name	The last name of the user for whom a change of license type is recommended.
Status	The status of the license-type recommendation. The following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Ignored** For information on status values, see License-Type Recommendation Status.
Original License Type	The license type in the SAP system.
Description	A description of the original license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.
Recommended License Type	The license type that was calculated by FlexNet Manager for SAP Applications based on the current optimization rules (all active license rules, the Duplicate User rules, and the user consolidation), and taking any contractual obligations (such as a license ratio or spare superior licenses) into account. For information about license ratios, see Managing SAP License Ratios. For information about consuming spare superior licenses, see Handling Over-Consumption of License Types.
Description	A description of the recommended license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.
Optimal License Type	The new license type that was calculated by FlexNet Manager for SAP Applications based on the current optimization rules (all active license rules, the Duplicate User rules, and the user consolidation). This value shows the best possible scenario. However, it does not take into account any contractual obligations that your organization might need to consider with regard to its SAP licenses, such as a license ratio or spare superior licenses.
Description	A description of the optimal license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.

Column Name	Description
Processed License Type	If the license recommendation has the status Overwritten because the recommendation was not accepted, the new license type that was assigned to the user instead of the recommended license type will be shown here. The value `--` indicates that the user has been retired (the user's Valid To date has been changed).
Description	A description of the processed license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`. If the **Processed License Type** value is `--`, the description shows the text `User retired`. This indicates that the user's Valid To date has been changed.
Ignore date	This column displays the active Ignore dates that have been set for recommendations. You can set an Ignore date when you reject or overwrite a recommendation. Double-click this field to add, remove or edit an Ignore date.
Note	When you reject or overwrite a recommendation, you can enter a reason. The text that you enter will be displayed here.
License Rule Set	The name of the license rule set that contains the rule that produced the recommendation.
Rule	The name of the license rule that produced the recommendation.
Rule Explanation	Provides information what criterion was met to produce the recommendation.

Processing License-Type Recommendations

Syntax:
Review the license-type recommendations in the Process License Recommendations report. Decide whether to accept, reject, or overwrite recommendations, and commit license-type changes to the database to make them permanent.

License-Type Recommendation Status

When you process the recommendations in a Process License Recommendations report, you change the status of the recommendation.

The status of a recommendation is also influenced by the checks that are performed during the import process; that is, recommendations are set to a certain status automatically when specific conditions are fulfilled.

Recommendations can have one of the following status values:

Status	Description
Pending	This status is assigned automatically during import to recommendations that have already been imported, but that have not been processed (no status was assigned). When an updated recommendation is imported for the same user, the status of the existing pending recommendation is automatically set to Unprocessed so that the new recommendation can be taken into account.

Status	Description
Accepted	Recommendations that have been accepted (the license type was updated according to the recommendation) have the status Accepted.
Rejected	Recommendations that have been rejected (the license type was not changed) have the status Rejected. When you reject a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.
Overwritten	Recommendations that had their license type changed to a value that is different to the recommended value have the status Overwritten. When you overwrite a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.
Ignored	The status of recommendations for users who have an active Ignore date will automatically be set to Ignored during import. When you reject or overwrite a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.
Unprocessed	Recommendations that have the status Pending at the time when a new recommendation is imported are automatically set to the status Unprocessed. This alerts you that the recommendation is obsolete. Recommendations with the status Unprocessed only appear in the Recommendations History report, and their status can not be changed.

Color-Coding of Recommendations

The recommendations are color-coded to indicate their processing status:

- Orange indicates that recommendations have been processed (accepted/rejected/overwritten), but they have not been committed to the database.
- Green indicates that recommendations have been committed to the database.
- Red indicates that recommendations failed to be committed to the database.
- Gray indicates that recommendations are read-only. This could have a number of reasons, such as the target system has no logical RFC destination, the target system may be unavailable, the user may not have sufficient rights for the system, or the recommendation may be blocked by another user.

Note: *If the RFC destinations are not correctly defined, or if the CUA settings are incorrect, the color-coding might not work correctly. For example, a line might be green even though the license type was not changed. Review the log to see the correct processing status.*

Log

You can display additional information on the processing of the data in the target system by clicking the **Log** button. The log contains a standard error message that is returned by an SAP function. The same error message should be expected if the license type was manually changed using the transaction SU01.

Accepting License-Type Recommendations

Accepting recommendations changes the license type only in the report. The user primary data remain unchanged

until you commit your changes.

Accepted recommendations that have not been committed to the database are orange.

To accept a license-type recommendation:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and select for which user, or users, you want to accept the recommendations.
2. Click **Accept**. The license type in the report is changed to the recommended value.
3. If you accept recommendations to assign the new license type 04 (Substitute) or 11 (Multi-Client/System) and click **OK**, you are prompted to enter the following additional information.
   - License Type 04 (Substitute)

From	The start date of the period when this user acts as a substitute.
To	The end date of the period when this user acts as a substitute.
User Name	The name of the user who acts as a substitute.

   - License Type 11 (Multi-Client/System)

SAP System	The SAP system on which the user is defined.
Client	The client on which the user is defined.
User Name	The user name of the user who is assigned license type 11.

4. When you are finished, click **OK**.

Rejecting License-Type Recommendations

When you reject a license-type recommendation, you can specify that future recommendations for this user should be ignored.

Rejected recommendations that have not been committed to the database are orange.

To reject a license-type recommendation:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and select the user or users whose license type should be left unchanged.
2. Click **Reject**.
3. The **Ignore Recommendation** dialog displays. In the **Reason** field, enter a reason for the rejection.
4. Select from the following options to specify whether future recommendations for this user should be ignored:
   - **Ignore indefinitely** — This is the default setting. All future recommendations will be ignored indefinitely.
   - **Ignore until** — Enter a date to indicate until when recommendations should be ignored.
   - **Do not ignore** — Select this option if recommendations should not be ignored in the future.

5. Click **OK** to confirm the rejection.

Overwriting License-Type Recommendations

Instead of accepting or rejecting a recommendation, you can overwrite it and assign a different license type than the one that is recommended.

In addition to changing the license type to one of the "usual" values, you can retire users. When you retire a user, the user's Valid To date is changed so that the user is no longer valid, and does not require a license.

Overwritten recommendations that have not been committed to the database are orange.

To overwrite a license-type recommendation:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and select the user or users whose license type should be changed to a value of your choice.
2. Click **Overwrite**.
3. The **Process License Recommendations** dialog displays. The following options are available:
   - To assign a new license type:
     a. In the **New License Type** field, enter the new license type you want to assign. The description of the new license type displays next to the value.
     b. In the **Reason** field, enter a reason why the recommendation is overwritten (optional).
     c. Select whether future recommendations for this user should be ignored. For more information, see Ignoring License-Type Recommendations.
     d. If in step 3.a you assign the new license type 04 (Substitute) or 11 (Multi-Client/System) and you click **OK**, you are prompted to enter additional information. For more information, see step 3 in Accepting License-Type Recommendations.
   - To retire the user:
     a. Select the **Retire User** check box to retire the user.
     b. Enter a date in the **Valid to** field to define when the user should be retired. If the field is blank, the current date is used. When retiring a user, the **New License Type** field is set to `--` in the report. This value only serves as a placeholder in the report; that is, when you commit the change to the user primary data, only the user's Valid To date is modified. If you specify a Valid To date that lies before the last logon date, the Valid To date is automatically set to the last logon date. It is impossible to retire a user who was active after the date that the user was supposed to be retired.
4. Select from the following options to specify whether future recommendations for this user should be ignored:
5. Click **OK** to confirm the overwrite action.

The license type in the report is changed to the value you specified.

Ignoring License-Type Recommendations

When you reject or overwrite a license-type recommendation in the Process License Recommendations report, you can select to ignore the recommendations.

To ignore a license-type recommendation:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and select the user or users for whom you want to ignore recommendations.
2. Click **Reject** or **Overwrite**. For more information on these options, see Rejecting License-Type Recommendations and Overwriting License-Type Recommendations, respectively.

   Depending on your selection, the **Ignore Recommendation** or **Overwrite Recommendation** dialog displays.
3. In the **Reason** field, enter a reason for rejection or overwriting the recommendation. If you selected **Overwrite** in step 2, enter a new license type.
4. Select from the following options to specify whether future recommendations for this user should be ignored:
   - **Ignore indefinitely** — This is the default setting. All future recommendations will be ignored indefinitely.
   - **Ignore until** — Enter a date to indicate until when recommendations should be ignored.
   - **Do not ignore** — Select this option if recommendations should not be ignored in the future.
5. Click **OK**.

Resetting License-Type Recommendations

The **Reset** button enables you to change a license recommendation to the status that is currently saved in the database.

To reset a license-type recommendation:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and select the license-type recommendation that you want to reset.
2. Click **Reset**.

The recommendation is reset to the status that is currently saved in the SAP database.

> You run a report, and the license recommendation for user JSmith has the status Pending. You accept the recommendation and its status changes to Accepted. By clicking **Reset**, the status in the report is returned to its previous status, which is Pending.
>
> You then decide to accept the recommendation and commit it to the database. A subsequent recommendation for user JSmith is processed later, which you reject, but you do not commit. If you click **Reset** at this point, the status is returned to the value that was saved to the database, which is Accepted.

Committing License-Type Changes

When you accept or overwrite license recommendations, the license type and the recommendation status in the FlexNet Manager for SAP Applications report is changed accordingly. To make these changes permanent, you need to commit this data to the user primary records in the SAP database.

To commit license type changes to the user primary records in SAP:

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report), and process the license-type recommendations.
2. Select the user or users whose primary records should be updated. To do this, you have the following options:
   - Click **Select** to quickly select all users that have been processed.
   - Manually select individual users (press the **Ctrl** key to select multiple users).
3. Click **Commit**.

The user primary data in the SAP database is changed accordingly.

Recommendation History Report

The Recommendation History report contains all recommendations. You cannot delete recommendations from this table.

You can either view the history for only one user, or create a Recommendations History report for several users. The Recommendations History report is read-only.

The Recommendations History report is available from the **Reporting** menu and from the Process License Recommendations report, where it can be run by clicking the **History** button.

Creating a Recommendation History Report

You can create a Recommendation History report to see the history of license-type recommendations.

To create a Recommendation History report:

1. Do one of the following:
   - In the Main menu of the SAP Admin module, open the **Reporting** menu and click **Recommendations History**.
   - In the SAP Admin module, run a Process License Recommendations report by following the steps described in Creating a Process License Recommendations Report. In the Process License Recommendations report, click **History**.
2. Specify your selection criteria. If you leave a field blank, all values are automatically selected for the report.

Option	Description
System ID	Enter the system ID or range of system IDs that should be contained in the report. If you select a user in the Process License Recommendations report and click **History**, this field is already populated.
Client	Enter the client ID or range of client IDs that should be contained in the report. If you select a user in the Process License Recommendations report and click **History**, this field is already populated.
User Name	Enter the user ID or range of user IDs that should be contained in the report. If you select a user in the Process License Recommendations report and click **History**, this field is already populated.
Original License Type	Enter the original license type or a range of license types that should be contained in the report.
Recommended License Type	Enter the recommended license type or a range of recommended license types that should be contained in the report.
Recommendation Status	Enter the status of the recommendations that should be contained in the report. Possible values: • P—Pending • A—Accepted • R—Rejected • O—Overwritten • I—Ignored • U—Unprocessed For information about status values, see License-Type Recommendation Status.

3. Click **Execute**.

Information in the Recommendations History Report

The Information in the Recommendations History Report is read-only.

Column Name	Description
Set name	The name of the recommendation set that was processed.
Creation date	The date when the recommendation set that was created.
System ID	The three-character ID of the system on which the user was identified.
Client	The client ID of the system on which the user was identified.

Column Name	Description
S/4HANA	Displays a check mark if this is an SAP S/4HANA system. No check mark indicates that the system is a classic SAP Business Suite system.
User Name	The user ID of the user for whom a change of license type is recommended.
First Name	The first name of the user for whom a change of license type is recommended.
Last Name	The last name of the user for whom a change of license type is recommended.
Active	A ticked check box indicates that the recommendation can be processed. If a recommendation is not active, this could mean that there is a newer recommendation available for this user.
Status	The status of the license-type recommendation. The following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Unprocessed** • **Ignored** For information on status values, see License-Type Recommendation Status.
Original License Type	The license type in the SAP system.
Recommended License Type	The new license type that is recommended by FlexNet Manager for SAP Applications based on the current optimization rules.
Optimal License Type	The new license type that was calculated by FlexNet Manager for SAP Applications based on the current optimization rules (all active license rules, the Duplicate User rules, and the user consolidation). This value shows the best possible scenario. However, it does not take into account any contractual obligations that your organization might need to consider with regard to its SAP licenses, such as a license ratio or spare superior licenses.
Processed License Type	If the license recommendation has the status Overwritten because the recommendation was not accepted, the new license type that was assigned to the user instead of the recommended license type will be shown here.
Note	When you reject or overwrite a recommendation, you can enter a reason. The text that you enter is displayed here.
License Rule Set	The name of the license rule set that contains the rule that produced the recommendation.
Rule	The name of the license rule that produced the recommendation.
Rule Explanation	Provides information what criterion was met to produce the recommendation.

Duplicate User Recommendations Report

The Duplicate User rules help you identify potential duplicate users across one or more systems. These users might fail to be consolidated during user consolidation, which could result in a user consuming more than one license.

The Duplicate User Recommendations report is based on the settings of the Duplicate User rules that you configure in the **Duplicate Users** section (under **Optimization**) in SAP mode in FlexNet Manager Suite. For more information, see Duplicate User Rule.

After FlexNet Manager Suite has identified potential duplicate users and generated the duplicate user recommendations, you can release these recommendations (bundled with the license-type recommendations) to the SAP Admin module.

You use the Duplicate User Recommendations report to review the duplicate user recommendations in the SAP Admin module, modify the user data in the report, and commit the changes to the SAP database to update the user primary data.

The report shows the duplicate users bundled in duplicate groups, marked by alternating colors. Each group is a collection of users who have been identified by FlexNet Manager Suite as being the same user on different systems (or one user with several accounts on one system).

Creating a Duplicate User Recommendations Report

Ensure that you have imported the recommendations from FlexNet Manager Suite into the SAP Admin module before running this report. For more information, see Importing Recommendations.

To create a Duplicate Users Recommendations report:

1. In the Main menu of the SAP Admin module, click **Reporting** and select **Process Recommendations**.

   The **Process Recommendations** screen provides an overview of all recommendations that have been imported over time into the SAP Admin module.

2. In the **Monitor** section, select the **Duplicate Users** option. The following options are available:

   - To create an automated report that contains only recommendations of a specific status, in the **Monitor** section, click the number underneath the respective status.

Option	Description
Pending	Returns recommendations that have already been imported but have not yet been processed.
Completed	Returns recommendations for which user data has been changed.
Ignored	Returns recommendations that have been imported previously but for which the status Ignore was set.
Total	Returns all available recommendations.

   - If you want to create a customized report, specify your selection criteria in the **Duplicate Users** section. If you leave a field blank, all values are automatically selected for the report. Click **Execute** to run the report.

Option	Description
RFC Destination	Enter the system ID or range of system IDs that should be contained in the report.
Duplicate Group	Enter the user ID or range of user IDs that should be contained in the report.
User Name	Enter the user name or a range of user names that should be contained in the report.
Status	Enter the status or range of status values that should be contained in the report. The following values are available: • P (Pending): The recommendation has not yet been processed. • C (Completed): User data has been changed to accommodate the recommendation. • I (Ignored): The recommendation was ignored.

The **Process Duplicate Users** screen opens where you can review and process the recommendations.

Duplicate User Recommendation Status

Each recommendation for a duplicates group is assigned a status. The status helps you to select the unprocessed recommendations (status Pending) for future runs of the report. The status is always valid for all users in a duplicates group.

Recommendations can have one of the following status values:

- **Pending**—This status is assigned automatically to recommendations during import. Pending recommendations have not yet been processed.
- **Completed**—You can mark recommendations as Completed to indicate that a recommendation has been processed. However, this does not indicate that the corresponding user data has been changed. The status can be changed at any time.
- **Ignored**—You can mark recommendations as Ignored if you want to indicate that recommendations should be ignored. This has no effect on the corresponding user data. The status can be changed at any time.

Duplicate User Recommendations Review

Verify the information in the Duplicate User Recommendations report, and process the recommendations.

After you reviewed the recommendations in the Duplicate User Recommendations report, you can change the user data of one or more duplicate users, so that they will be identified as the same user during consolidation. For example, you might need to modify a user's email address or their last name to enable consolidation. This procedure is also referred to as *processing*.

You can also ignore the recommendation. Depending on your choice, the recommendations for duplicates groups are assigned a *status*. The status helps you track your progress when you process the recommendations.

Note that FlexNet Manager for SAP Applications identifies the duplicates, but does not make any recommendations regarding which user details need to be changed so that the duplicate users can be consolidated.

The processing of duplicate user recommendations usually comprises the following steps:

1. Modifying the user data in the grid. See Modifying User Data in the Grid.
2. Changing the recommendations status in the grid. See Changing the Recommendation Status in the Grid.
3. Committing the changes to the database to update the user primary data. See Committing Duplicate User Data Changes to the Dependent SAP Systems.

Recommendations that are gray are read-only and cannot be processed. This could have a number of reasons, such as the target system has no logical RFC destination, the target system may be unavailable, the user may not have sufficient rights for the system, or the recommendation may be blocked by another user.

Modifying User Data in the Grid

To modify the user data in the grid:

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report).
2. On the **Process Duplicate Users** screen, select the user, or users (using **Ctrl** + click), whose data you want to modify and click **Change User Data**.
3. In the **Selection** dialog, select the check boxes for the user primary data fields that you want to change. Click **Continue** or press **Enter**.
4. In the **Enter values** dialog, enter the new values. Click **Continue** or press **Enter**.

The values you entered are copied to the corresponding lines in the grid. The color orange indicates that the cell content has been changed.

The changes are not committed to the SAP systems. You can access them at a later date, if required, or commit them (see Committing Duplicate User Data Changes to the Dependent SAP Systems.

Changing the Recommendation Status in the Grid

You can change the status of duplicate user recommendations. However, changing the status only helps you to categorize recommendations for the **Process Recommendations** screen; the underlying data is not changed. The status can be changed at any time.

- You can mark recommendations as **Pending** to indicate that the recommendation has not been processed.
- You can mark recommendations as **Completed** to indicate that the recommendation has been processed.
- You can mark recommendations as **Ignored** if you want to indicate that a recommendations should be ignored.

Recommendations that are gray are read-only and cannot be processed. This could have a number of reasons, such as the target system has no logical RFC destination, the target system may be unavailable, the user may not have sufficient rights for the system, or the recommendation may be blocked by another user.

To modify the recommendation status in the grid:

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report.

2. On the **Process Duplicate Users** screen, select the user, or users (using **Ctrl** + click), whose recommendation status you want to modify and click the corresponding status button (**Completed**, **Ignored**, or **Pending**).
3. Click **Yes** in the dialog.

   The **Status** column displays the new status.

The status of all users in a duplicate group will be changed.

Committing Duplicate User Data Changes to the Dependent SAP Systems

To make the changes permanent, you need to commit them to the user primary records in the SAP database. There are two ways to commit the changes:

- Using the **Update User Data** button.
- Using the **User Maintenance** button (transaction SU01).

Important: *If the SAP Admin module is connected to IdM, it is recommended to make changes to user data using the* ***Update User Data*** *button, and NOT using the* ***User Maintenance*** *button.*

Recommendations that are gray are read-only and cannot be processed. This could have a number of reasons, such as the dependent SAP system has no logical RFC destination, the dependent SAP system may be unavailable, the user may not have sufficient rights for the system, or the recommendation may be blocked by another user.

To commit duplicate user data changes to the dependent SAP systems:

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report.
2. On the **Process Duplicate Users** screen, select for which user, or users (using **Ctrl** + click), you want to accept the recommendations. Follow one of the following procedures:
   - Click **Update User Data** to update the user data using FlexNet Manager for SAP Applications features.
     a. In the **Update** dialog, select the check boxes for the user primary data fields that you want to update. Usually, these will be the fields that you modified earlier. Click **Continue** or press **Enter**.
     b. Click **Yes** in the dialog.
     c. If the update was successful, the cell that contains the updated value is highlighted in green. If the update was not successful, the cell is red. If multiple fields were selected for the update, but only one field returns an error, all selected fields are highlighted in red.
   - Click **User Maintenance** to access the user data directly on the dependent SAP system. This will open the transaction SU01 on the dependent SAP system. This requires that the Dialog RFC destination has been set up for the system that you want to access. Perform the usual steps for user maintenance in SAP to change the user data.

     Important: *Any changes that are made using the* ***User Maintenance*** *button (transaction SU01) will not be reflected in the Duplicate User Recommendations report.*

You can display additional information on the processing of the data in the dependent SAP system by clicking the **Log**

button. The log contains a standard error message that is returned by an SAP function. The same error message appears if the license type was manually changed using the transaction SU01.

14

SAP Package Analysis in the SAP Admin Module

You can measure and analyze the consumption of SAP packages across your organization.

An SAP package (also called simply *package*) is an optional piece of software for which you can purchase a separate license from SAP. The licensed units of the packages are determined in accordance with sizes, such as the number of orders, contracts, and contract accounts. A named user license is required for users who access packages.

If you do not use the Staging Database Monitor to remotely launch the USMM and collect package measurement data, you *must* use the Package Analysis feature if you want to import and measure package data from dependent SAP systems. As a prerequisite to importing data using the Package Analysis feature, the Satellite transport must be installed on the corresponding SAP systems. The package measurement data that is generated using the Package Analysis feature (by importing source data and measuring it) is automatically added to the staging database on the SAP Admin module. The SAP Inventory Agent can connect to this staging database and load the data into the FlexNet Manager Suite database.

SAP packages were formerly known as SAP Engines. This terminology may be more familiar to long-time SAP users.

The SAP package analysis workflow in the SAP Admin module usually includes the following steps:

- Importing the source data of packages
- Displaying all packages of the system landscape
- Measuring all installed packages
- Setting package usage alerts.

Importing Source Data of Packages

Package data can be collected only from dependent systems that have the Satellite transport installed. If the Satellite transport is not installed, use the Staging Database Monitor with the **Launch USMM remotely** option to collect package measurement data. For more information, see Collecting Data from Dependent SAP Systems.

You must import the source/primary data of the packages to the SAP Admin module to display the packages that are available. When you import the source data, an RFC connection is automatically established and relevant data is imported.

To import the source data of packages to the SAP Admin module:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the systems from which you want to import source data, and then click the **Execute** button or press **F8**.
4. Click **Import Master Data**.
5. In the **Restrict Value Range** dialog, double-click the system from which you want to import source data. If you double-click a system that was not selected in the initial **Package Analysis** screen (see step 3), the packages of this system will be added to the list in the following **Package Analysis** screen.

The source data is imported. You can now measure the packages to determine your package usage.

Deleting Primary Data

You can delete the primary data for packages from the SAP Admin module.

To delete the primary data of packages from the SAP Admin module:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the systems for which you want to delete primary data and then click the **Execute** button or press **F8**.
4. Select the row of the package for which you want to delete the primary data and click **Delete Master Data**.

The relevant package and its primary data is removed from the list. This package can no longer be measured.

Displaying Packages of Installed Systems

You can display the packages only after you have imported the primary data of the packages to the SAP Admin module. For more information, see Importing Source Data of Packages.

You can display an overview of selected systems to show all assigned packages which you could theoretically use. Here you can decide which packages should be measured.

To display the packages of installed systems:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the systems for which you want to display packages. Then click the **Execute** button or press **F8**.

SAP Package Measurement

Measuring packages in the SAP Admin module and analyzing the package data in FlexNet Manager Suite enables you to determine the total license consumption of each SAP package across your organization.

The measurement program contains counting modules to automatically determine the packages used. This measurement runs in the background; the results are listed in the measurement log.

To ensure that the overall license position is as accurate as possible, it is recommended to measure all SAP systems at a similar time.

Executing a Package Measurement

Before you execute a package measurement, you must have imported the primary data of the packages and displayed the packages that are available for you to use. For more information, see Importing Source Data of Packages and Displaying Packages of Installed Systems, respectively.

With FlexNet Manager for SAP Applications, you can continually run (simulate) the measurement of the packages without triggering the USMM itself.

Simulating the package measurement enables you to keep an overview of the current load of your used packages. FlexNet Manager for SAP Applications can measure all of the packages that SAP can measure.

To execute a package measurement:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the desired systems and click the **Execute** button or press **F8**.
4. In the **Package Analysis – Display** screen, select the packages you want to measure. The check box in the **Measure** column (long name: **Measure Package**) shows a check mark if the package has been selected for measurement. You have the following options:
   - To select or deselect individual packages, select or clear the check box of a package in the **Measure** column.
   - To select or deselect multiple packages, select the corresponding rows, then click **Check Selections** or **Uncheck Selections**.
5. Click **Save** to save your selection.
6. Click **Start Measurement**.

The measurement status is color-coded:

- **Green** — Measurement results are available.
- **Yellow** — The package is currently being measured.
- **Red** — The package measurement was not completed due to errors during the measuring process. If the status is red, the **Error Message** column contains information about the issue.
- **Gray** — The package has not been measured, or the measurement result was zero.

After the measurement you can display the measurement results and set package usage alerts, if desired.

The package measurement results are automatically added to the staging database on the SAP Admin module. The SAP Inventory Agent can connect to this staging database and load the data into the FlexNet Manager Suite database.

Displaying Package Measurement Results

Before performing the following procedure, you must have executed a package measurement. For more information, see Executing a Package Measurement.

You can display measurement results for packages that show a green status.

To display package measurement results:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the desired systems and click the **Execute** button or press **F8**.

   Note: *You might need to refresh the* ***Package Analysis*** *screen by clicking* ***Refresh Measurement Results****.*
4. In the **Package Analysis – Display** screen, select the package for which you want to display detailed information and click **Display Measurement Results**.

The **Display Results** screen displays a list with information on all package units.

The **Number** column shows how many objects (primary records, contracts, and so on) were counted for a particular unit.

If the **Info** column shows a **Details** icon , you can click it to display further information about the counted objects.

Setting Package Usage Alerts

You can only set an alarm for packages that you have measured. For more information, see Executing a Package Measurement.

An email alert can be triggered when usage occurs on a package unit or when the usage on a package unit is higher than during previous periods.

When a usage alert is triggered, an email containing the appropriate information is sent to the email address that was specified. This enables you to detect at an early stage when a measurement-relevant package is used. You can deactivate the alert at any time by using the option **Deactivate Alert**.

To set up alerts for package units:

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.
2. Click **Packages**, then select **Package Analysis** from the menu.
3. In the **Package Analysis** screen, select the desired systems and click the **Execute** button or press **F8**.

4. In the **Package Analysis – Display** screen, select the packages for which you want to set up an alert, and click **Display Measurement Results**.
5. In the **Display Results** screen, select the units for which you want to set an alert and click **Activate Alert**.
6. In the **Email** dialog that opens, enter the email address to which alerts should be sent. Confirm with **Enter**.

In the **Display Results** screen, a check mark in the **Email** column and the email address indicate that an alert has been set.

After you set up an alert, you need to do the following:

- Specify the parameters for the alert.
- Schedule a regular report.

Setting Parameters for Package Usage Alerts

Specify when an alert should be triggered for usage of package units.

To set the parameters for email alerts:

1. In the Main menu of the SAP Admin module, click **Packages**, then select **Packages Usage Alert** from the menu.
2. In the **Packages Usage Alert** screen, select the desired systems in the **System** field.
3. Under **Options**, select when an alert should be triggered. The following options are available:
   - **Email: Consumption > 0** — An alert should be triggered when usage occurs on a package.
   - **Email: Consumption > Older Consumption** — An alert should be triggered when the usage is higher than during previous periods.
4. Select the **Simulation** check box if you want to simulate an alert situation. A log displays when you activate this feature, however no email is sent when an alert is triggered.
5. Click **Execute** or press **F8** to confirm and to display the log.

Displaying All Packages of the System Landscape

As a precondition for this report, the relevant packages have to be measured beforehand using the Package Analysis report in FlexNet Manager for SAP Applications. For detailed information about measuring packages, see Executing a Package Measurement. If the Package Analysis report produced a yellow status (package is currently being measured) or red status (measurement failed), the status displays in the Package Analysis Overview report will be gray.

The Package Analysis Overview report from the **Packages** menu enables you to display a list of all packages in the system landscape (or a subset of systems that you specify) that were previously measured.

The list shows all packages with their measurement status. The measurement status can be either green — indicating that measurement results are available — or gray, indicating that no measurement results are available (the measurement result was zero).

To display a list of measured packages in the system landscape or a subset of systems and detailed measurement results:

1. In the Main menu of the SAP Admin module, select the system landscape or a subset of systems for which you want to display available packages. For example, you could select one or more system groups or several individual systems by holding the **Ctrl** button and clicking the desired system names.
2. Click **Packages**, then select **Package Analysis Overview** from the menu.

   The **Package Analysis Overview** screen displays. The **System** field has automatically been populated with the system names that you selected in the previous step.
3. Run the report by clicking **Execute** or pressing **F8**.

   The **Package Analysis Overview – Applications** screen displays a list of all packages of the selected systems that have previously been measured. The list shows the application ID, the application name, and the status.
4. For each package with a green status, you can display detailed measurement results by selecting the package and clicking the **Details** button. This will open the **Package Analysis Overview – Units** screen which contains the following information.

Column Name	Description
Application	The package ID.
Unit	The unit ID.
Start Date	The date when usage started.
End Date	The date when usage ended.
Number	The number indicating how often this unit was counted.
Unit Name	The name of the unit.
Application Name	The name of the package.

5. You can display details for each package unit; for example, on which systems usage occurred for the unit. Select the unit and click **Details** to open the **Package Analysis Overview – Details** screen which contains the following information.

Column Name	Description
Installation Number	The installation number of the system on which the package was used.
System ID	The ID of the system on which the package was used.
Client	The client on which the package was used.
Application	The package ID.
Unit	The unit ID.
Unit Name	The name of the unit.
Start Date	The date when usage started.

Column Name	Description
End Date	The date when usage ended.
Measurement Date	The date of the current measurement.
Number	The number indicating how often this unit was counted.
Unit Name	The name of the unit.
Period Type	Indicates the type of period for the system measurement. The F4 Help opens a list of the period type abbreviations and corresponding short descriptions.

XI Adapter Data Volume Report

To be able to use this feature, the XI system must be integrated into the system landscape.

The XI Adapter Data Volume report is relevant for system landscapes that use an SAP XI (SAP Exchange Infrastructure) component.

The SAP XI software facilitates the exchange of information between SAP and non-SAP systems. For more information about SAP XI, refer to the SAP documentation.

License fees for an SAP XI system are charged based on the data volume that passes through it. The XI Adapter Data Volume report enables you to monitor the data volume at regular intervals. When viewed in combination with the relevant SAP license contract, the volume figure enables you to keep track of the amount of licensing charges that is to be expected when an SAP system measurement is run.

In addition to providing the overall amount of data volume that passed through the XI system in a specified time period, the XI Adapter Data Volume report also provides detailed information about when data was sent or received, and who sent or received the data.

To execute the XI Adapter Data Volume report:

1. In the Main menu of the SAP Admin module, select the XI system from the system landscape. This step is optional.
2. Click **Packages**, then select **XI Adapter Data Volume** from the menu.
3. Enter the details for the report.

Option	Description
System	Select the XI system. If you selected the system in step 1, this field has already been populated. (F4 Help opens a list with the systems that are recorded in the FlexNet Manager for SAP Applications system data.)
From... To...	Enter the date range of the period for which data should be evaluated. If you enter a single day, data will be evaluated for a 24-hour period. The default setting is the current date.
Measuring Unit Data Volume	Select the measuring unit. The available values are KB, GB, and MB. The default value is MB. (F4 Help opens a list with available values.)

Option	Description
Layout	If you want to use a specific layout, enter the name of the saved layout in the **Layout** field.
Communication Party (Sender)	Use this field to filter the report to specific sender communication parties (optional).
Service (Sender)	Use this field to filter the report to specific sender services (optional).
Interface Name (Sender)	Use this field to filter the report to specific sender interface names (optional).
Interface Namespace (Sender)	Use this field to filter the report to specific sender interface namespaces (optional).
Communication Party (Receiver)	Use this field to filter the report to specific receiver communication parties (optional).
Service (Receiver)	Use this field to filter the report to specific receiver services (optional).
Interface Name (Receiver)	Use this field to filter the report to specific receiver interface names (optional).
Interface Namespace (Receiver)	Use this field to filter the report to specific receiver interface namespaces (optional).

4. Click **Execute** (or press **F8**) to start the evaluation .

The resulting report displays detailed information about the data that passed through the XI system. You can convert the measuring unit to display all volume information in KB, MB, or GB, by clicking the relevant **Convert into** *unit* button.

15

System Measurement in the SAP Admin Module

You can measure the SAP systems in your SAP landscape using features of the SAP Admin module.

SAP requires their customers to regularly perform a system measurement. This is executed using the transaction USMM and the LAW (License Administration Workbench). While FlexNet Manager for SAP Applications is not necessary to run a system measurement, it gives you the tools to store and analyze valuable licensing and usage data of your systems.

The system measurement workflow in FlexNet Manager for SAP Applications usually comprises the following steps:

1. Optimizing the license types. For more information, see Optimization in the SAP Admin Module, Regular Optimization of the SAP License Position in FlexNet Manager Suite, and Remediation in the SAP Admin Module.
2. Running the measurement program (standard SAP transaction USMM). For more information, see Performing a System Measurement.
3. Consolidating the USMM results in the LAW and sending the output to SAP, if desired. For more information, see Consolidating Measurement Results in the LAW.
4. Uploading the LAW results into FlexNet Manager for SAP Applications for evaluation. For more information, see Loading the LAW Measurement Results.

Performing a System Measurement

When you run a system measurement in the SAP Admin module, FlexNet Manager for SAP Applications triggers the transaction USMM.

The transaction USMM is the SAP standard transaction for the measurement program. The USMM determines the number of users and chargeable objects of the packages of the SAP software for each system. The measurement is run in the background by executing the report RSUVM001, and results are written in a measurement log. Each time you run a measurement in SAP using the transaction USMM, the results of the previous measurement are overwritten. The results can also be output as a printable fax in SAP.

Using the SAP Admin module of FlexNet Manager for SAP Applications, you can measure systems remotely via an RFC connection without the need to login to each system individually. After running the measurement, you can download the measurement data to a local file on your PC. This file will be used for processing on the LAW system. It can be read

directly in the LAW or it can be exported from FlexNet Manager for SAP Applications into the LAW. By saving measurement results locally, FlexNet Manager for SAP Applications enables you to create a history of previous measurements and keep track of all changes.

Before executing the system measurement, it is recommended that you verify the user classification using the User Data Validation report in the SAP Admin module (see User Data Validation Report). Also, you can view the clients that are included in the measurement, as well as the active price lists and license types for the selected systems. You can create variants in order to simplify and standardize repeated analyses.

You can only measure SAP systems that have a valid RFC destination and that have a system status of **Active**. Excluded systems cannot be measured.

Note: *To include or exclude a system from measurement, right-click the system or system group in the system landscape in the SAP Admin module and select* ***Include System*** *or* ***Exclude System*** *from the context menu.*

During the SAP measurement, a number of activity checks are run to find potential fraudulent activities. See Activity Checks for more information.

To perform a system measurement using FlexNet Manager for SAP Applications:

1. In the SAP Admin module, select an active system in the system landscape. Click **Measurement/LAW**, then select **System Measurement** from the menu.
2. In the next screen, select the systems that you want to measure and click **Execute**.

   You can select to view specific system data:

   - To display the license types of the selected systems, click **License Types**.
   - To display all clients of the selected systems, click **Clients**.

     Note: *If the* ***Note*** *column contains the text* `Excluded`*, the client has been excluded from the system measurement.*

   - To display the price lists of the selected systems, click **Prices**.
3. Select the systems that you want to measure from the list and click **Start Measurement** to start the measurement. This triggers the transaction USMM.
4. To save the measurement data locally, click **Download Measurement Data** and browse to the folder where the file should be saved using the suggested file name.

Consolidating Measurement Results in the LAW

After you have performed the system measurement (transaction USMM), you can upload the measurement logs via FlexNet Manager for SAP Applications into the LAW (transaction LICENSE_ADMIN) to combine users and consolidate the measurement results.

To invoke the LAW using FlexNet Manager for SAP Applications for consolidating measurement results:

1. In the SAP Admin module, click **Measurement/LAW**, then select **LAW Result Lists** from the menu.
2. On the **LAW Measurements** tab, click the icon on the right side of the **FlexNet Manager** button and select **Execute LAW**.
3. Select a destination. The transaction LICENSE_ADMIN is called automatically. Perform the required steps. (Refer to the SAP documentation for further information.)

Loading the LAW Measurement Results

Loading the LAW measurement results into FlexNet Manager for SAP Applications enables you to display the results, build a history of results, and use the Statistics features in the SAP Admin module.

After the system measurement results have been consolidated in the LAW, you can load them into FlexNet Manager for SAP Applications. The LAW Result Lists feature enables you to access the result lists of the LAW and provides a number of tabs to display them. The **LAW Measurements** tab contains a list of all saved measurements and enables you to build a history. You can evaluate the measurement results using the other tabs in the **LAW Measurement History** screen. The results will give you insight into the distribution of your license types across systems and could potentially be used for internal chargeback, for example. You can download the data from each tab in various file formats by clicking **Export**.

Note: *In order to be able to use the features of the* ***Statistics*** *menu for evaluating the system measurement results, you need to load the measurement results into FlexNet Manager for SAP Applications.*

To load the measurement results into FlexNet Manager for SAP Applications:

1. In the SAP Admin module, click **Measurement/LAW**, then select **LAW Result Lists** from the menu.
2. On the **LAW Measurements** tab, click the icon on the right side of the **FlexNet Manager** button and select **Load Current LAW Measurement** to open the **Load Current Measurement** dialog.
3. In the **Destination** field, enter the RFC destination of the LAW system. **F4 Help** displays all newly set up RFC connections. Use the transaction SM59 to set up a new RFC connection, if desired.
4. In the **Description** field, enter the name that should be used to save the results of the LAW for further evaluation in FlexNet Manager for SAP Applications.
5. Click **Continue** .

16

Statistics in the SAP Admin Module

With FlexNet Manager for SAP Applications, you can create various statistical reports, to provide you at a glance with valuable information on your licensing situation.

You can see the distribution of licenses across the entire system landscape. Also, if evaluations are run on a regular basis, they can help you to see developments in your licensing situation and recognize trends so that you can make provisions for the future, if necessary.

All statistics are based on centrally collected LAW measurement data, as well as the SAP license contract information. Therefore, before running any of the statistics reports, you need to ensure that the relevant LAW measurement data has been uploaded into FlexNet Manager for SAP Applications (for more information, see Loading the LAW Measurement Results). Also, verify that the corresponding contract information has been properly maintained (see SAP License Contract Information in the SAP Admin Module for more information on how to add and maintain license contract information).

All statistics can be displayed as ALV grid lists or as graphical representations.

Management Summary

The Management Summary report shows the utilization of the SAP license contracts.

Using this report, you can quickly identify the number of licenses that are included in the license contract and compare this to the actual number of used licenses, broken down by individual license types. If you are using more licenses than stated in your contract, the report will list these licenses in a separate row. The color-coded status indicator enables you to check the licensing status for individual license types at a glance.

Creating a Management Summary Report

Before you can create a Management Summary report, you must do the following:

- Provide the relevant license contract information in the Customizing section.
- Upload the LAW measurement data that is to be analyzed into FlexNet Manager for SAP Applications. (See SAP License Contract Information in the SAP Admin Module for more information.)

To create a Management Summary report:

1. In the Main menu of the SAP Admin module, click **Statistics**, then select **Management Summary** from the menu.
2. Under **Selection for License Evaluation**, select the LAW measurement data that the report should be based on. (The relevant names were specified at the measurement.)
3. In the **Thresholds for Status Indicator** section, set the thresholds for the status indicator:
   - A green status typically indicates that the number of used licenses lies within the number specified in the license contract.
   - A yellow status indicates that the number of used licenses is close to the number of licenses specified in the contract.
4. Click **Execute** or press **F8** to run the analysis.

Data in the Management Summary Report

Column	Description
Measurement Date	Date of the measurement on which the statistical evaluation is based. This column is visible only if the evaluation is based on more than one LAW measurement.
Status	The threshold for the status colors are determined by your selection under **Thresholds for Status Indicator** in the **Contract Utilization** screen: • A green status typically indicates that the number of used licenses lies within the number specified in the license contract. • A yellow status indicates that the number of used licenses is close to the number of licenses specified in the contract. • A red status indicates that the number of used licenses is higher than the number of licenses available, according to the license contract.
Contract No.	Shows the number of the SAP license contract.
Description / Informational Text	Shows the name of the license type, for example `Professional User`.
License Type	Shows the number of the license type, for example `52`.
Assignm. to Spec. Version	Indicates if the license type has been assigned a special version.
Country Surcharge	Indicates if the license type has been assigned a country surcharge.
Valid from	Shows the start date of the license contract.
Valid to	Shows the end date of the license contract.
No. Lic. in Contract	Shows the total number of licenses of a particular type, per the license contract.

Column	Description
Number	Shows the total number of licenses of a particular type that are currently in use.
Percent	Shows the percentage of used licenses versus the number of licenses included in the SAP license contract.

License Analysis

The License Analysis report analyzes the usage of SAP licenses.

You can evaluate the usage of licenses over a fixed period of time or compare the license usage across different systems, for example.

The report can be displayed as an ALV grid list or as a graphic by SAP Business Graphics.

Creating a License Analysis Report

Before you can create a License Analysis report, you must do the following:

- Provide the relevant license contract information in the Customizing section.
- Upload the LAW measurement data that is to be analyzed into FlexNet Manager for SAP Applications. (See SAP License Contract Information in the SAP Admin Module for more information.)

To create a License Analysis report:

1. In the Main menu of the SAP Admin module, click **Statistics**, then select **License Analysis** from the menu.
2. Under **Selection for License Evaluation**, specify the parameters for the report. If you leave a field blank, all relevant available data will be evaluated.
   - **Description/Info** — Select the LAW measurement data on which the report should be based. (The relevant names were specified at the measurement.)
   - **System** — Enter the name of the system that should be analyzed. If no data is provided, all systems are analyzed that were included in the LAW measurement selected above.
   - **License Type** — Limit the evaluation to specific license types. (The relevant names were specified at the measurement.)
3. Select your output options:
   - Select **Output as Graph** if the data should be passed to the SAP Business Graphics.
   - Select **Output as ALV Grid List** if the data should be displayed in an ALV grid list.
   - Select the **Display in Percent** check box to display license data by percentage.
4. The SAP Business Graphics can display a maximum of three dimensions. Under **Selection Criteria for Graphic**, select which of the four criteria should be evaluated.
5. Click **Execute** or press **F8**.

Data in the License Analysis Report

If you chose to display the results of a License Analysis report in an ALV grid list, the table can contain the following columns. The columns that are displayed depend on your selection under **Selection for License Evaluation**.

Column	Description
License Type	Shows the number of the license type, for example 52, including the special version or country surcharge, if applicable.
Systems	Shows the system that was evaluated.
Clients	Shows the client that was evaluated.
Measurement Date	Shows the date of the measurement on which the statistical evaluation is based.
Number of Licenses	Shows the total number of licenses of a particular type as specified in the license contract.
Percent	Shows the number of licenses of a particular type as a percentage of the total number of licenses in the analysis.

SAP Business Graphics provides a variety of different design options. The layout can be saved in the graphic or you can load a saved layout.

Contract Utilization Analysis

The Contract Utilization Analysis report, which is similar to the Management Summary report, evaluates the utilization of the SAP license contracts and provides options for a more differentiated approach.

Creating a Contract Utilization Analysis Report

Before you can create a Contract Utilization Analysis report, you must do the following:

- Provide the relevant license contract information in the Customizing section.
- Upload the LAW measurement data that is to be analyzed into FlexNet Manager for SAP Applications. (See SAP License Contract Information in the SAP Admin Module for more information.)

To create a Contract Utilization Analysis report:

1. In the Main menu of the SAP Admin module, click **Statistics**, then select **Contract Utilization Analysis** from the menu.
2. Under **Selection for License Evaluation**, specify the parameters for the report. If you leave a field blank, all relevant available data will be evaluated.
   - **Description/Info** — Select the LAW measurement data on which the report should be based. (The relevant names were specified at the measurement.)
   - **License Type** — Limit the evaluation to specific license types.

3. Select your output options:
   - Select **Output as Graph** if the data should be passed to the SAP Business Graphics.
   - Select **Output as ALV Grid List** if the data should be displayed in an ALV grid list.
4. Select the evaluation type:
   - Select **License Analysis (Variance)** to compare the actual number of used licenses against the target number of available licenses in the contract.
   - Select **License Usage Contracts Total** to display the number of used and unused licenses.
   - Select **Contract Utilization** to only show the number of used licenses.
5. Click **Execute** or press **F8**.

Data in the Contract Utilization Analysis Report—License Analysis (Variance)

The License Analysis (Variance) evaluation type compares the actual number of used licenses against the target number of available licenses in the contract.

Column	Description
Tar/Act. (Target/ Actual)	Shows whether the row contains the number of licenses stated in the corresponding contract (value: `Tar.`) or the number of licenses that are in use (value: `Act`).
Lic. Type	Shows the number of the license type, for example 52.
Measurement Date	Shows the date of the measurement on which the statistical evaluation is based.
Amount	Shows the number of licenses of a specific license type in the corresponding contract (value: `Tar.`) or the number of licenses that are in use (value: `Act`).

Data in the Contract Utilization Analysis Report—License Usage Contract Total

The License Usage Contract Total evaluation type displays the number of used and unused licenses.

Column	Description
Utiliz. (Utilization)	Shows whether the row contains the number of used (value: `Used`) or unused licenses (value: `Unused`) or whether the number of used licenses exceeds the number of licenses agreed in the license contract (value: `Over`).
Measurement Date	Shows the date of the measurement on which the statistical evaluation is based.
Lic. Type	Shows the number of the license type, for example `52`.
Amount	Shows the number of licenses of a specific license type that are used or unused.

Data in the Contract Utilization Analysis Report—Contract Utilization

The Contract Utilization evaluation type shows only the number of used licenses.

Column	Description
SAP Contr.	Shows the name of the relevant SAP contract.
Measurement Date	Shows the date of the measurement on which the statistical evaluation is based.
Lic. Type	Shows the number of the license type, for example 52.
Amount	Shows the number of licenses of a specific license type that are in use.

17

Working with Independent Systems

You can use the analytic functions of FlexNet Manager for SAP Applications for systems that are not connected to an SAP Admin module. These systems are referred to as *independent SAP systems*.

Activity checks data from independent SAP systems cannot be analyzed in FlexNet Manager Suite.

Workflow for independent SAP systems

1. Configure the independent SAP system. See *Setup of Independent SAP Systems* in the *FlexNet Manager for SAP Applications Installation Guide* PDF.
2. If you want to analyze and optimize package consumption, measure the packages on the independent SAP system. See Measuring Packages on Independent SAP Systems.
3. Execute the SAP Inventory Agent (SAPReader.exe) on the independent SAP system to collect user and consumption data (and package consumption data, if required). See SAP Inventory Agent. The SAP Inventory Agent transfers this data to the FlexNet Manager Suite database.
4. Analyze the user and consumption data to identify the optimal license type for each user on the independent SAP system. See Regular Optimization of the SAP License Position in FlexNet Manager Suite.
5. Generate a file that contains all recommendations. See Exporting Recommendations for Independent SAP Systems.
6. Import the recommendations file into the independent SAP system. See Importing License-Type Recommendations.
7. Process the recommendations on the independent SAP system and commit the changes to the SAP tables. See Recommendation Processing on Independent SAP Systems.

Data Collection from Independent SAP Systems

The collection of user data and package measurement results from an independent SAP system is facilitated by the SAP Inventory Agent. Because you are using an on-premises implementation of FlexNet Manager Suite, using an inventory beacon is optional.

Package measurement data can be collected only after a package measurement has been executed. For more

information, see Measuring Packages on Independent SAP Systems.

For information on collecting data using the SAP Inventory Agent, see SAP Inventory Agent.

Data Collection Using an Inventory Beacon

You can collect user data and package measurement results from an independent SAP system using an inventory beacon.

When an inventory beacon is used to collect SAP data from an independent SAP system, you need to define a connection to the independent SAP system on the beacon.

To define a connection to an independent SAP system:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.
3. Click **New...**.

   The **SAP Connection** dialog window displays.

4. In the **System landscape details** section, complete the following fields:

   a. The **System landscape** field displays your system landscape(s). Choose the landscape that contains the SAP Admin module or independent SAP system that you want to connect to.

   b. From the **SAP suite type** drop-down list, choose the type of SAP suite for this connection. Available options are:

      - **Classic Business Suite**
      - **S/4HANA**

   c. From the **SAP system type** drop-down list, select the type of system to which you want to connect from the drop-down list. Available options are:

      - **Admin Module** — Your primary or root system that collects data from its dependent SAP systems. This option does not support S/4HANA.
      - **Independent SAP System** — An SAP system that is not connected to an SAP Admin module.
      - **Dependent SAP system** — An SAP system that is connected to an SAP Admin module. This option only displays when a connection to an SAP Admin module has already been established.

   d. Choose the **Master SAP system** from the drop-down list. If you are creating a beacon connection to a dependent SAP system, select the SAP Admin module to which the dependent system is connected.

5. Click **Test Connection** to test whether a connection could be established.
6. Click **Save**.

After you set up the connection to the independent SAP system, you can execute the connection to trigger the data

collection through the SAP Inventory Agent.

Executing Connections

Inventory collection can be triggered automatically or manually.

Any SAP connection (and resulting imports) configured to run on an inventory beacon will be executed each time an appropriate data gathering schedule triggers the collection of SAP inventory data on the inventory beacon. For information on creating a schedule, see Creating a Data Gathering Schedule.For information on creating a schedule, see *Creating a Data Gathering Schedule* in the FlexNet Manager Suite online help.

It is also possible to execute a connection manually, by clicking a button in the FlexNet Beacon interface.

To manually execute a specific SAP connection and collect inventory data:

1. On the inventory beacon, from the Windows **Start** menu, run **FlexNet Beacon**.

   Note: *To run FlexNet Beacon, you must have system administrator rights.*

2. In the **Data collection** section, click **SAP systems**.
3. Select the connection you would like to execute, and click **Execute now**.

Measuring Packages on Independent SAP Systems

The following preconditions apply for creating and executing package measurements:

- A user who wants to define package measurement jobs on an independent SAP system requires an account of type Dialog and should be assigned the role /LICMAN/ADMIN_MODULE.
- The Satellite transport and the Roles transport must be installed on the independent SAP system. See *Setup of Independent SAP Systems* in the *FlexNet Manager for SAP Applications Installation Guide* PDF.

You can schedule package measurements on independent SAP systems to be executed at a future time and date. If the measurement should be executed periodically, you can set the recurrence. You can also create ad-hoc measurements.

FlexNet Manager for SAP Applications creates a separate job for each package that should be measured. When you change the package measurement schedule, any old measurement jobs are deleted. There can be only one active set of measurement jobs at a time.

To schedule and execute a package measurement on an independent SAP system:

1. On the independent SAP system, execute the transaction /n/LICMAN/OFFLINE.
2. In the **Recommendation Processing and Package Measurements** screen, under **Package Measurements**, click **Select Packages**.
3. In the **Offline Package Measurement** screen, select the packages that you want to measure.

4. When you are done, click **Save** . Return to the previous screen by clicking the **Back** button or pressing **F3**.
5. Click **Run Package Measurement**.
6. In the **Offline Package Measurement** dialog, specify when the packages should be measured.
   - To start the measurement immediately, select **Start immediately**.
   - To schedule the measurement for a specific date and time, select **Start at**, and set the start date and time in the **Date** and **Time** fields.
   - To set the recurrence of the measurement, select the **Repeat** check box and set the recurrence pattern (daily, weekly, or monthly).
7. Click **OK** or press **F5**.

FlexNet Manager for SAP Applications automatically saves the measurement results in a dedicated table. This table is updated every time a package measurement is executed. Any previous measurement results are overwritten with the new results. This means that at any time, the table contains only one active set of package measurement results.

After the package measurement, the measurement results are collected by running the SAP Inventory Agent.

Previous Package Measurements

The entry screen for executing package measurements on independent SAP systems displays information on previous package measurements for this independent SAP system.

Field	Description
Last Measured	The date on which the last package measurement was executed on this independent SAP system.
Succeeded	The number of successful package measurements that were executed for this independent SAP system.
Failed	The number of failed package measurements that were executed for this independent SAP system.
Schedule	The package measurement can be run daily, weekly, or monthly.
Next Job	The date and time of the next scheduled package measurement for this independent SAP system.
Scope	The number of packages that are to be measured in the next measurement.

Exporting Recommendations for Independent SAP Systems

Before you can process license-type recommendations on independent SAP systems, you need to do the following:

1. Calculate the current license position. For more information, see Recalculating the Optimal License Position.
2. Create a recommendation set and release it to the SAP Admin module. For more information, see Releasing Recommendations to the SAP Admin Module.

3. Review and accept the recommendations of the recommendation set you created in step 2. For more information, see Reviewing and Processing Released Recommendations.

You export license-type recommendations in SAP mode in FlexNet Manager Suite into an XML file. You then use this XML file to import the recommendations into an independent SAP system.

After you have performed the previously described prerequisite steps, the **License Position** page (available in SAP mode in FlexNet Manager Suite) shows the option **Export recommendations sent to SAP** in the **Tasks** section. You can export the released recommendations into an XML file.

To export license-type recommendations for independent SAP systems:

1. In FlexNet Manager Suite, click **SAP**, point to **License Position** and click **Current Position**.
2. On the **License Position** page, in the **Tasks** section, click **Export recommendations sent to SAP**.

   Depending on your browser, a dialog displays asking whether you want to open or save this file. Select the option to save, and click **OK** or **Save**.
3. Depending on your browser, the file may automatically download to your default location, or a **Save As** dialog may display. If there is a **Save As** dialog, browse to a folder to store the exported grid, and enter an appropriate file name. Click **Save**.

The XML file that you saved contains all current recommendations that have been released to the SAP Admin module. Use this file to import the recommendations into the corresponding independent SAP system. The file can contain recommendations for several systems. During import, the independent SAP system will import only the recommendations that are appropriate for that system.

Importing License-Type Recommendations

After you exported the license-type recommendations from FlexNet Manager Suite into an XML file, you can import the recommendations into an independent SAP system for processing.

The transaction /LICMAN/OFFLINE starts the required functionality. The entry screen provides information about the independent SAP system, as well as high-level details about the previous set of license-type recommendations that have been imported and processed on the system.

To import license-type recommendations into an independent SAP system:

1. On the independent SAP system, execute the transaction /n/LICMAN/OFFLINE.
2. In the **Recommendation Processing and Package Measurements** screen, under **License Recommendations**, click **Process Recommendations**.
3. In the **Process Recommendations Offline** screen, click **Import from file**.
4. Browse to the file with the recommendations, and click **Continue** to import the recommendations.

The recommendations are imported and are ready to process.

Recommendation Processing on

Independent SAP Systems

The Process Recommendations Offline report lists the license-type recommendations for an independent SAP system and enables you to process the recommendations to optimize your organization's SAP license position.

Like the Process License Recommendations report for dependent SAP systems, the Process Recommendations Offline report is based on the active license-type optimization rules that you configure and manage in FlexNet Manager Suite. The report lists the license-type recommendations, filtered, if required, by specific criteria.

Creating a Process Recommendations Offline Report

Ensure that you have imported the recommendations from FlexNet Manager Suite into an independent SAP system using an XML file. For more information, see Importing License-Type Recommendations.

To create a Process License Recommendations Offline report:

1. On the independent SAP system, execute the transaction /n/LICMAN/OFFLINE.
2. In the **Recommendation Processing and Package Measurements** screen, under **License Recommendations**, click **Process Recommendations**.

   The **Process Recommendations Offline** screen provides an overview of all recommendations that have been imported into the independent SAP system.
3. Select from the following options:
   - To create an automated report that contains only recommendations of a specific status, in the **Monitor** section, click the number underneath the respective status. For status information, see Recommendation Status Values for Independent SAP Systems.
   - To create a report with all recommendations, click **Total**.
   - If you want to create a customized report, specify your selection criteria in the area below the **Monitor** section. If you leave a field blank, all values are automatically selected for the report. After you made your selections, click **Execute** to run the report.

Option	Description
User Name	Enter the user ID or range of user IDs that should be included in the report.
Original License Type	Enter the license type or a range of license types that should be included in the report.
Recommended Lic. Type	Enter the recommended license type or a range of recommended license types that should be included in the report.
Pending	Select this check box if you want to include recommendations that have already been imported but have not yet been processed.

Option	Description
Accepted	Select this check box if you want to include recommendations that have the status Accepted.
Rejected	Select this check box if you want to include recommendations that have the status Rejected.
Overwritten	Select this check box if you want to include recommendations that have the status Overwritten.
New License Type ... to ...	This option is available when you select the **Overwritten** check box. You can use it to further filter the report for specific license-type recommendations that were overwritten. To do so, enter the new license type or a range of new license types.
Ignored	Select this check box if you want to include recommendations that have the status Ignored.

The **Process Recommendations Offline** screen opens where you can process the recommendations.

Recommendation Status Values for Independent SAP Systems

When you process the recommendations in a Process Recommendations Offline report on an independent SAP system, you have the choice to accept, reject, or overwrite the recommendations. By doing so, you change the *status* of the recommendation.

The status of a recommendation is also influenced by the checks that are performed during the import process; that is, recommendations are set to a specified status automatically when conditions are fulfilled.
Recommendations can have one of the following status values.

Status	Description
Pending	This status is assigned automatically during import to recommendations that have already been imported, but that have not been processed (no status was assigned). When an updated recommendation is imported for the same user, the status of the existing pending recommendation is automatically set to Unprocessed so that the new recommendation can be taken into account.
Accepted	Recommendations that have been accepted (the license type was updated according to the recommendation) have the status Accepted.
Rejected	Recommendations that have been rejected (the license type was not changed) have the status Rejected. When you reject a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.
Overwritten	Recommendations that had their license type changed to a value that is different to the recommended value have the status Overwritten. When you overwrite a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.

Status	Description
Ignored	The status of recommendations for users who have an active Ignore date will automatically be set to Ignored during import. When you reject or overwrite a recommendation, you can select whether recommendations for that user should be ignored indefinitely or until a date that you specify.
Unprocessed	Recommendations that have the status Pending at the time when a new recommendation is imported are automatically set to the status Unprocessed. This alerts you that the recommendation is obsolete. Recommendations with the status Unprocessed only appear in the Recommendations History report, and their status can not be changed.

Information in the Process Recommendations Offline Report

The Process Recommendations Offline report shows detailed information on the license-type recommendations for individual users, such as, for example, the original and optimal license type, and the rule that produced the recommendation.

The following information is available in the Process Recommendations Offline report.

Column Name	Description
System ID	The three-character ID of the system on which the user was identified.
Client	The client ID of the system on which the user was identified.
User Name	The user ID of the user for whom a change of license type is recommended.
First Name	The first name of the user for whom a change of license type is recommended.
Last Name	The last name of the user for whom a change of license type is recommended.
Status	The status of the license-type recommendation. The following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Unprocessed** • **Ignored** For information on status values, see Recommendation Status Values for Independent SAP Systems.
Original License Type	The license type in the SAP system.
Description	A description of the license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.

Column Name	Description
Recommended License Type	The new license type that is recommended for this user. The license type was calculated by FlexNet Manager for SAP Applications based on the current optimization rules (all active license rules, the Duplicate User rules, and the user consolidation), and taking any contractual obligations (such as a license ratio or spare superior licenses) into account.
Description	A description of the license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.
Optimal License Type	The optimal license type that was calculated by FlexNet Manager for SAP Applications based on the current optimization rules (all active license rules, the Duplicate User rules, and the user consolidation). This value shows the best possible scenario. However, it does not take into account any contractual obligations that your organization might need to consider with regard to its SAP licenses, such as a license ratio or spare superior licenses.
Description	A description of the license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`.
Processed License Type	If the license recommendation has the status Overwritten because the recommendation was not accepted, the new license type that was assigned to the user instead of the recommended license type will be shown here. The value `--` indicates that the user has been retired (the user's Valid To date has been changed.)
Description	A description of the license type, for example, `Test` or `mySAP Limited Prof. (CAT III)`. If the **Processed License Type** value is `--`, the description shows the text `User retired`. This indicates that the user's Valid To date has been changed.
Ignore Date	This column displays the active Ignore dates that have been set for recommendations. You can set an Ignore date when you reject or overwrite a recommendation. Double click this field to add, remove, or edit an Ignore date.
Note	When you reject or overwrite a recommendation, you can enter a reason. The text that you enter is displayed here.
License Rule Set	The name of the license rule set that contains the rule that produced the recommendation.
Rule	The name of the license rule that produced the recommendation.
Rule Explanation	Provides information what criterion was met to produce the recommendation.

The recommendations are color-coded to indicate their processing status:

- Orange indicates that the recommendation was processed (accepted/rejected/overwritten), but has not been committed to the database.
- Green indicates that the recommendation has been committed to the database.
- Red indicates that the recommendation failed to be committed to the database.
- Gray indicates that a recommendation is read-only. This could have a number of reasons, such as the target system has no logical RFC destination, the target system may be unavailable, the user may not have sufficient rights for the

system, or the recommendation may be blocked by another user.

You can display additional information on the processing of the data in the target system by clicking the **Log** button. The log contains a standard error message that is returned by an SAP function. The same error message should be expected if the license type was manually changed using the transaction SU01.

Accepting Recommendations

Accept a recommendation if you want to implement the recommendation from FlexNet Manager for SAP Applications.

Accepting recommendations changes the license type only in the report. The user primary data remain unchanged until you commit your changes.

To accept a license-type recommendation:

1. Run a Process Recommendations Offline report, and select for which user, or users, you want to accept the recommendations.
2. Click **Accept**. The license type in the report is changed to the recommended value.
3. If you accept recommendations to assign the new license type 04 (Substitute) or 11 (Multi-Client/System) and click **OK**, you are prompted to enter the following additional information.
   - License Type 04 (Substitute)

From	The start date of the period when this user acts as a substitute.
To	The end date of the period when this user acts as a substitute.
User Name	The name of the user who acts as a substitute.

   - License Type 11 (Multi-Client/System)

SAP System	The SAP system on which the user is defined.
Client	The client on which the user is defined.
User Name	The user name of the user who is assigned license type 11.

4. When you are finished, click **OK**.

Accepted recommendations are highlighted in orange.

You need to commit the changes to the SAP database for the changes to take effect. See Committing License-Type Changes.

Rejecting Recommendations

Reject a recommendation if you do not want to implement the recommendation from FlexNet Manager for SAP Applications.

To reject a license-type recommendation:

1. Run a Process Recommendations Offline report, and select the user or users whose license type should be left unchanged.
2. Click **Reject**.

   The **Ignore Recommendation** dialog displays.
3. In the **Reason** field, enter a reason for the rejection.
4. Select from the following options to specify whether future recommendations for this user should be ignored:
   - **Ignore indefinitely** — This is the default setting. All future recommendations will be ignored indefinitely.
   - **Ignore until** — Enter a date to indicate until when recommendations should be ignored.
   - **Do not ignore** — Select this option if recommendations should not be ignored in the future.
5. Click **OK** to confirm the rejection.

Rejected recommendations are highlighted in orange.

Overwriting Recommendations

Instead of accepting or rejecting a recommendation from FlexNet Manager for SAP Applications, you can overwrite it and assign a different license type than the one that is recommended. In addition to changing the license type to one of the "usual" values, you can retire users. When you retire a user, the user's Valid To date is changed so that the user is no longer valid, and does not require a license.

To overwrite a license-type recommendation:

1. Run a Process Recommendations Offline report, and select the user or users whose license type should be changed to a value of your choice.
2. Click **Overwrite**.

   The **Overwrite Recommendations** dialog displays.
3. You now have the following options:
   - To assign a new license type, do the following:
     a. In the **New License Type** field, enter the new license type you want to assign.

        The description of the new license type displays next to the value.
     b. In the **Reason** field, enter a reason why the recommendation is overwritten (optional).
     c. Select whether future recommendations for this user should be ignored. For more information, see Ignoring License-Type Recommendations.
     d. If in step 3.a you assign the new license type 04 (Substitute) or 11 (Multi-Client/System) and you click **OK**, you are prompted to enter additional information. For more information, see step 3 in Accepting Recommendations.

- To retire the user, do the following:
  a. Select the **Retire User** check box to retire the user.
  b. Enter a date in the **Valid to** field to define when the user should be retired. If the field is blank, the current date is used. When retiring a user, the **New License Type** field is set to -- in the report. This value only serves as a placeholder in the report; that is, when you commit the change to the user primary data, only the user's Valid To date is modified. If you specify a Valid To date that lies before the last logon date, the Valid To date is automatically set to the last logon date. It is impossible to retire a user who was active after the date that the user was supposed to be retired.

4. Click **OK** to confirm the overwrite action.

The license type in the report changes to the value you specified. Overwritten recommendations are highlighted in orange.

You need to commit the changes to the SAP database for the changes to take effect. See Committing License-Type Changes.

Resetting Recommendations

You can undo any processing action that was not committed to the SAP database.

When you reset a license-type recommendation, you change a license recommendation to the status that is currently saved in the database.

To reset a license-type recommendation:

1. Run a Process Recommendations Offline report, and select the license-type recommendation that you want to reset.
2. Click **Reset**.

The recommendation is reset to the status that is currently saved in the SAP database.

Example

You run a report, and the license recommendation for user JSmith has the status Pending. You accept the recommendation and its status changes to Accepted. By clicking **Reset**, the status in the report is returned to its previous status, which is Pending.

You then decide to accept the recommendation and commit it to the database. A subsequent recommendation for user JSmith is processed later, which you reject, but you do not commit. If you click **Reset** at this point, the status is returned to the value that was saved to the database, which is Accepted.

Committing License-Type Changes

When you accept or overwrite license recommendations, the license type and the recommendation status in the FlexNet Manager for SAP Applications report is changed accordingly. To make these changes permanent, you need to commit this data to the user primary records in the SAP database.

To commit license type changes to the user primary records in SAP:

1. Run a Process Recommendations Offline report, and process the license-type recommendations.
2. Select the user or users whose primary records should be updated. You have the following options:
   - Click **Select** to select all users that have been processed.
   - Manually select individual users (press the **Ctrl** key to select multiple users).
3. Click **Commit**.

The user primary data in the SAP database changes accordingly.

18

User Exits in the SAP Admin Module

With FlexNet Manager for SAP Applications, you can add functionality via user exits. This enables you to provide your own data-check conditions, connect an LDAP system, or integrate packages. For information on user exits, refer to the SAP documentation.

User Exits: Data Check

The user exit for the data check enables you to maintain your own conditions for the validation of the user primary data.

If you select an ID of the user exit or create a new one, a list containing the fields of the user primary data is displayed in which you can enter your own conditions for deactivating the users. Conditions are added using function modules.

For more information on the user data check, see User Data Validation Report.

Creating a User Exit ID for the User Data Check

To create a user exit ID for the user data check:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits User Data Check** from the menu.
2. Click **Create**. In the **Description** dialog, enter a description. Click **Continue**.
3. Assign the user exit to a system, a system group, or to the system landscape and click **Continue**.
4. Select the row that you want to modify. You have the following options:
   - Change an existing function module: Click **Change** and enter a function module and a description.
   - Insert a new function module: Click **Insert** and enter a function module and a description.
   - Delete a function module: Click **Delete**.
5. Click **Assignment** to assign the user exit to a different system or to add an assignment.
6. When you have finished, click **Save**.

Modifying a User Exit ID for the User Data Check

To modify a user exit ID for the user data check:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits User Data Check** from the menu.
2. Select the user exit that you want to modify and click **Change/Display**.
3. Select the row that you want to modify. You have the following options:
   - Change an existing function module: Click **Change** and enter a function module and a description.
   - Insert a new function module: Click **Insert** and enter a function module and a description.
   - Delete a function module: Click **Delete**.
4. Click **Assignment** to assign the user exit to a different system or to add an assignment.
5. Click **Save**.

Copying a User Exit ID for the User Data Check

To copy a user exit ID for the user data check:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits User Data Check** from the menu.
2. Select the user exit that you want to copy and click **Copy**.
3. In the **Description** dialog, enter a description. Click **Continue**.
4. Assign the user exit to a system, a system group, or to the system landscape and click **Continue**.
5. Click **Save**.

Changing the Description of a User Exit ID for the User Data Check

To change the description of a user exit ID for the user data check:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits User Data Check** from the menu.
2. Select the user exit whose description you want to change and click **Description**.
3. Change the description and click **Continue**.

Deleting a User Exit ID for the User Data Check

To delete a user exit ID for the user data check:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits User Data Check** from the menu.
2. Select the user exit that you want to delete and click **Delete**.

User Exits for LDAP Connections

The LDAP field in the user data can be populated via a user exit.

FlexNet Manager for SAP Applications includes the function module /LICMAN/MS_LDAP which allows the connection to an LDAP system. If at this point you want to integrate a custom function module, you need to ensure that the interface of the function module /LICMAN/ MS_LDAP is used and that the ldap_value field in the t_user return table is populated.

In addition, you can enter the LDAP server and an RFC destination for a system in which the LDAP connection was set up via the transaction LDAP (see SAP documentation).

Creating a User Exit ID for an LDAP Connection

To create user exit IDs for an LDAP connection:

1. Ensure that you have established a connection between the SAP system and the LDAP server (using the transaction LDAP).
2. In SAP, create a custom function module based on the template /LICMAN/MS_LDAP.
3. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits LDAP Connection** from the menu.
4. Click **Insert** to add a new LDAP connection. In the **Details** dialog, define the LDAP server for the connection that you established in step 1. Provide the following information:

System Assignment	The system destination. The user exit will be executed only for the system that is assigned to this destination.
Function Module	The name of the function module that you created based on the template /LICMAN/ MS_LDAP in step 3.
Description	The description of the user exit that you are creating.
Destination	The RFC destination to the function module that you created in step 3.
LDAP Server	The ID of the LDAP connection.

5. Click **Continue**.

User Exits for Packages

The user exit for packages integrates customer-specific counting routines in FlexNet Manager for SAP Applications. The function module /LICMAN/MS_ENGINE_CUSTTEMPLATE should be used as a template.

Here, the interface to custom modules needs to be adopted without any modifications.

In addition, the module must be implemented on the system on which objects are to be counted. From there it will be called through the RFC destination that is maintained in the Customizing section (see Dialog RFC Destinations in the SAP Admin Module).

In the function module, ensure that data is output for the following fields: **Unit**, **Unitname**, and **Counter**.

Creating a User Exit for Packages

To create a user exit ID for packages:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits Packages** from the menu.
2. Click **Insert** to add a new user exit.
3. Provide the following information:

System Assignment	The system on which the user exit should be implemented.
Function Module	The customer-specific function module (that is based on the template /LICMAN/MS_ENGINE_CUSTTEMPLATE).
Description	A meaningful description of the user exit.

4. Click **Continue**.

Modifying a User Exit for Packages

To modify a user exit for packages:

1. In the Main menu of the SAP Admin module, click **Administration**, then select **User Exits Packages** from the menu.
2. Select a row in the list and click **Change**.
3. You can change the description of the user exit.

19

Properties and Methods

FlexNet Manager for SAP Applications provides an editable set of rules that let you control how it calculates an optimal SAP license position for your enterprise.

Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules

Use these properties to define Custom rules, Duplicate User rules, and the User Consolidation.

Property	Type	Example Value	Example Condition
UserName	FirstName	LastName	EmailAddress
UserName	string	"PatLewis"	UserName.ToLower() = "plewis"
FirstName	string	"Pat"	FirstName.ToLower() = "pat"
LastName	string	"Lewis"	LastName.ToLower() = "lewis"
EmailAddress	string	"plewis@company.com"	EmailAddress.ToLower().EndsWith("@company.com")
SystemID	string	"ABC-001"	SystemID.ToUpper().StartsWith("ABC")
ClientID	string	"001"	ClientID = "001"
CurrentLicenseType	string	"52"	CurrentLicenseType = "52" OR CurrentLicenseType = "53"
AccountID	string	"1234567890"	AccountID = "1234567890"
TelephoneNumber	string	"+441234567890"	TelephoneNumber = "+441234567890"
TelephoneExtension	string	"890"	TelephoneExtension = "890"
IsDeveloper	bool	true	IsDeveloper = true

Property	Type	Example Value	Example Condition
UserLockStatus	int	96	(UserLockStatus & 32) > 0 Possible values: • 0: Not locked • 32: Locked by CUA administrator • 64: Locked by administrator • 128: Locked after failed logon
DaysSinceLastLogon	int?	NULL 365	DaysSinceLastLogon != null AND DaysSinceLastLogon > 365 The value is relative to the inventory date.
LastLogonDate	DateTime?	NULL "20190628"	LastLogonDate != null AND LastLogonDate.Value.Date == DateTime.Parse("06/28/2019")
LastLogonDateLocal	DateTime?	NULL "20190628"	LastLogonDateLocal != null AND LastLogonDateLocal.Date == DateTime.Parse("06/28/2019")
UserCreationDate	DateTime?	NULL "20190628"	UserCreationDate != null AND UserCreationDate.Value.Date == DateTime.Parse("06/28/2019")
UserCreationDateLocal	DateTime?	NULL "20190628"	UserCreationDateLocal != null AND UserCreationDateLocal.Date == DateTime.Parse("06/28/2019")
InventoryDate	DateTime?	NULL "20190628"	InventoryDate != null AND InventoryDate.Value.Date == DateTime.Parse("06/28/2019")
InventoryDateLocal	DateTime?	NULL "20190628"	InventoryDateLocal != null AND InventoryDateLocal.Date == DateTime.Parse("06/28/2019")
UserGroup	string	"QA"	UserGroup = "QA"

Property	Type	Example Value	Example Condition
UserType	string	"A"	UserType = "A" OR UserType = "B" Possible values: • A: Dialog • B: System • C: Communication Data • D: BDC • L: Reference • S: Service
IsProductionUser	bool	true	IsProductionUser IsProductionUser = true
SystemDefaultLicenseType	string	“91”	SystemDefaultLicenseType = "91"
TotalCPUTime	double	1.500	TotalCPUTime > 10 CPU time is stated in seconds.
IsUserLocked	bool	false	NOT IsUserLocked IsUserLocked = false
TotalAccessCount	double	10	TotalAccessCount > 10 Retrieves the total object access count for a user.
SystemSuiteType	string	ClassicBusinessSuite S4HANA "" (for a non-SAP system)	SystemSuiteType = "S4Hana" SystemSuiteType.ToLower() = "s4hana" SystemSuiteType = ""

Custom Rule Methods

Use these methods to define custom rules.

Method	Type	Example Condition
HasMatch(string originalString, params string[] matches)	bool	HasMatch(UserName,"plewis") HasMatch(UserName, "plewis", "mshepherd", "rwilliams") HasMatch(EmailAddress, "*@company.com")
HasUserNameMatch(params string[] matches)	bool	HasUserNameMatch("plewis", "mshepherd", "rwilliams")
HasEmailAddressMatch(params string[] matches)	bool	HasEmailAddressMatch("*@company.com")

Method	Type	Example Condition
HasOnlyRolesWithin(bool usedRolesOnly, params string[] matches)	bool	HasOnlyRolesWithin(false, "Dev*", "Manager") Valid values for usedRolesOnly: • `true` — Only user's roles that have consumption are returned. • `false` — All roles assigned to a user are returned (regardless of consumption of a role). Example Scenario: • User1 roles: Dev1, Manager, Tester • User2 roles: Dev2, Manager • User3 roles: Dev3 Any set of roles that contain only elements within the (Dev*, Manager) superset is considered valid. In this example, the following roles are considered within the (Dev*, Manager) superset: • User2 roles: Dev2, Manager • User3 roles: Dev3 User1 (Dev1, Manager, Tester) does not contain only roles within the (Dev*, Manager) superset because the Tester role is not included in the superset. ***Note:*** *HasOnlyRolesWithin supports composite roles.*
HasRoleMatch(bool usedRolesOnly, params string[] matches)	bool	HasRoleMatch(true, "MyRole1") Valid values for usedRolesOnly: • `true` — Only user's roles that have consumption are returned. • `false` — All roles assigned to a user are returned (regardless of consumption of a role).
HasUserGroupMatch(params string[] matches)	bool	HasEmailAddressMatch("*@company.com")
HasUserTypeMatch(params string[] matches)	bool	HasEmailAddressMatch("*@company.com")
HasCurrentLicenseTypeMatch(params string[] matches)	bool	HasEmailAddressMatch("*@company.com")
GetTransactionProfilePercentage(string profileName)	double	GetTransactionProfilePercentage("ProfessionalProfile") > 0.9

Method	Type	Example Condition
HasTransactionProfileLimitMatch(string mandatoryTransactionProfileName, string allowedTransactionProfileName, string prohibitedTransactionProfileName)	bool	HasTransactionProfileLimitMatch("MandatoryProfile", "AllowedProfile", "ProhibitedProfile")
GetTransactionProfileNumberObjectsUsed(string sapTransactionProfileName)	integer	GetTransactionProfileNumberObjectsUsed ("ProfessionalProfile") > 50
GetTransactionProfileNumberTransactionsUsed (string sapTransactionProfileName)	integer	GetTransactionProfileNumberTransactionsUsed ("ProfessionalProfile") > 30
GetTransactionProfileNumberReportsUsed(string sapTransactionProfileName)	integer	GetTransactionProfileNumberReportsUsed ("ProfessionalProfile") > 15
GetTransactionProfileNumberJobsUsed(string sapTransactionProfileName)	integer	GetTransactionProfileNumberJobsUsed ("ProfessionalProfile") > 5
HasTransactionProfileMaxObjectTypesMatch (string sapTransactionProfileName, int maxTransaction, int maxReport, int maxJob)	bool	HasTransactionProfileMaxObjectTypesMatch ("ProfessionalProfile", 30, 15, 5)
TotalConsumptionInRange(string p_ConsumptionType, double p_fromCPUTime, double p_toCPUTime, double p_fromAccessCount, double p_toAccessCount)	bool	TotalConsumptionInRange("CPUTime", 0, 100, 0, 0) Options for p_ConsumptionType: • CPUTime • AccessCount
GetRoles(bool usedRolesOnly)	string[]	GetRoles(false) Parameters for usedRolesOnly: • `true` — Only user's roles that have consumption are returned. • `false` — All roles assigned to a user are returned (regardless of consumption of a role).
GetRoles(bool usedRolesOnly, bool withoutCompositeRole = false))	string[]	GetRoles(false) Parameters for usedRolesOnly: • `true` — Only user's roles that have consumption are returned. • `false` — All roles assigned to a user are returned (regardless of consumption of a role).
IsLowConsumption(string p_ConsumptionType, double p_maxCPU, double p_maxAccessCount)	bool	IsLowConsumption("CPUTime", 1000, 0) Options for p_ConsumptionType: • CPUTime • AccessCount

Package Rule Properties and Methods

The following properties and methods enable you to define custom package formulas. All properties and methods are case sensitive. If a number is the result of the formula, then this number is the consumption value. If a string is returned, then there is no consumption value available and a message is returned instead. If a result `Consumption(...)` is returned, then both a consumption value and a message are returned.

Properties for custom package formulas

Property	Type	Example Value
SystemID	string	"T7A-001"
ClientID	string	"001"

Methods for custom package formulas

Method	Type	Example Condition	Note
HasMetric(int metricID)	bool	HasMetric(1000)	Determines whether a specific metric has a value from any measurement
HasMetric(int metricID, int numMonths)	bool	HasMetric(1000, 12)	Determines whether a specific metric has a value that is relevant within the specified period of time
HasMetric(int metricID, int numMonths, string periodType)	bool	HasMetric(1100, 12, "C")	Determines whether a specific metric has a value that is relevant within the specified period of time and where the period of the value has the specified type. Allowed period values: • Y: The metric is for the last 12 months (relative to the date of measurement). • C: The metric is for the last full calendar year. • T: The metric is for the current calendar year (year to date). • M: The metric is measured monthly and each measurement returns 12 values. • Q: The metric is measured quarterly and each measurement returns 4 values. • 6: The metric is measured half yearly and each measurement returns 2 values. • U: No period is specified, meaning that the metric holds the "current value".

Method	Type	Example Condition	Note
Metric(int metricID)	integer	Metric(1000)	Returns the value of the specified metric. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, the value is the sum of all values. When used in a global context (within the TotalConsumption method), the value is the sum of all values across all SAP systems.
Metric(int metricID, int numMonths)	integer	Metric(1000, 12)	Returns the value of the specified metric for the specified period of time. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, the value is the sum of all values. When used in a global context (within the TotalConsumption method), the value is the sum of all values across all SAP systems.

Method	Type	Example Condition	Note
Metric(int metricID, int numMonths, string periodType)	integer	Metric(1000, 12, "C")	Returns the value of the specified metric for the specified period of time and where the period of the value has the specified type. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, the value is the sum of all values. When used in a global context (within the TotalConsumption method), the value is the sum of all values across all SAP systems. Allowed period values: • Y: The metric is for the last 12 months (relative to the date of measurement). • C: The metric is for the last full calendar year. • T: The metric is for the current calendar year (year to date). • M: The metric is measured monthly and each measurement returns 12 values. • Q: The metric is measured quarterly and each measurement returns 4 values. • 6: The metric is measured half yearly and each measurement returns 2 values. • U: No period is specified, meaning that the metric holds the "current value".
Metric(int metricID)	IEnumerable <int>	Metrics(1000) Metrics(1000).Max()	Returns a collection of all distinct values for the specified metric. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, multiple values are returned. When used in a global context (within the TotalConsumption method), values for all distinct periods but summed up across all SAP systems are returned.

Method	Type	Example Condition	Note
Metrics(int metricID, int numMonths)	IEnumerable <int>	Metrics(1000, 12)	Returns a collection of all distinct values for the specified metric for the specified period of time. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, multiple values are returned. When used in a global context (within the TotalConsumption method), values for all distinct periods but summed up across all SAP systems are returned.
Metrics(int metricID, int numMonths, string periodType)	IEnumerable <int>	Metrics(1000, 12, "C")	Returns a collection of all distinct values for the specified metric for the specified period of time and where the period of the value has the specified type. Where a single measurement returns multiple values (distinct periods) for a single metric on a single SAP system, multiple values are returned. When used in a global context (within the TotalConsumption method), values for all distinct periods but summed up across all SAP systems are returned. Allowed period values: • Y: The metric is for the last 12 months (relative to the date of measurement). • C: The metric is for the last full calendar year. • T: The metric is for the current calendar year (year to date). • M: The metric is measured monthly and each measurement returns 12 values. • Q: The metric is measured quarterly and each measurement returns 4 values. • 6: The metric is measured half yearly and each measurement returns 2 values. • U: No period is specified, meaning that the metric holds the "current value".
Active(bool condition)	string	Active(Metric(1000) > 0)	Returns "Active" if the specified condition is evaluated as true, otherwise returns "Inactive".
If(bool condition, int trueResult, int falseResult)	integer	If(Metric(1000) > 0, Metric(1000), 0)	`If` executes a different formula depending on whether the specified condition is true.

Method	Type	Example Condition	Note
If(bool condition, string trueResult, string falseResult)	string	If(Metric(1000) > 0, "Active", "Inactive")	This example is equivalent to "Active(Metric(1000) > 0)"
If(bool condition, object trueResult, object falseResult)	object	If(Metric(1000) > 0, Metric(1000), "Inactive")	`If` executes a different formula depending on whether the specified condition is true.
TotalConsumption(object totalConsumed)	n/a	TotalConsumption (Metric(1000)) TotalConsumption (Active(Metric(1000) > 0))	Runs the formula once for the entire organization, rather than once per system.
TotalConsumption(object totalConsumed, object systemConsumed)	n/a	TotalConsumption (Metric(1000), Metric(1000))	Runs the first formula once for the entire organization, and the second formula once per system.

20

Scheduled Tasks

This appendixThis section describes the scheduled tasks associated with FlexNet Manager for SAP Applications, as well as the command-line ndcrproc.exe.

Throughout this section, the placeholder *Prog-Drive:* is used for the disk drive where your executables are installed (typically C:).

Common Task Utility

The tool ndcrproc.exe is a command-line tool that is used in FlexNet Manager Suite to execute all scheduled tasks. It enables you to closely manage child tasks, including:

- Suppressing appearance of any window in the user interface
- Preventing simultaneous execution of multiple instances.

To schedule execution of

```
c:\path\sample.exe -d
```

without displaying an interactive user interface window, enter the following command line into the Windows Task Scheduler:

```
ndcrproc.exe -e c:\path\sample.exe -l c:\path\sample.exe -o CREATE_NO_WINDOW=True -- -d
```

There are further examples of the use of this tool in the default command lines for the scheduled tasks in the following sections.

Parameters for ndcrproc.exe

You can use the following parameters for the command-line tool ndcrproc.exe.

Table 14: Parameters for ndcrproc.exe

Parameter	Description
`--`	A double minus sign indicates the end of parameters for ndcrproc.exe. Any parameters which follow this symbol are passed directly to the child process.
`-c "string"`	A string enclosed in double quotation marks, combining multiple command-line arguments that are passed to the child process. Example: `-c "-d c:\temp -o "c:\w w\myoutfile.txt""`
`-C filename`	Pointer to a file containing multiple command-line arguments, separated by newline characters, that are passed to the child process. The semi-colon character (;) indicates a comment within the file, and the remainder of that line is ignored.
`-e name`	Specifies the name of the executable that should be run in this scheduled task.
`-l filepath`	Specifies a random name of a semaphore to hold, so that any other task with the same semaphore name cannot be run at the same time. While the semaphore can be any ASCII string value, the convention is to pass the file path and the name of the executable that is running. This makes it easy for a human operator to check that another instance of the same executable will not run at the same time.
`-o option`	An optional parameter passed to ndcrproc.exe in the form of a name/value pair (separated with an equal sign). Boolean values may be entered as `TRUE` or `FALSE`, `T` or `F`, or `Y` or `N`. To specify multiple options, precede each one with the -o flag. Unrecognized options are silently ignored. The most common option to specify is: `-o CREATE_NO_WINDOW=True` This option suppresses the appearance of any interactive window for the child process. ***Note:*** *When UI windows are suppressed, it is not possible to see any results that the child process may otherwise display. The child process returns success or failure to ndcrproc.exe, which passes that result upward to the task scheduler. If you need to examine detailed output even when the display window is suppressed, enable tracing on the child process.*

Import SAP Inventories

The information in this section is relevant only if your setup of FlexNet Manager Suite uses inventory beacons.

The **Import SAP inventories** scheduled task resolves the intermediate data packages that were uploaded from an inventory beacon into the FlexNet Manager Suite database. This information can then be used to calculate the optimized license position.

Customers who use an on-premises implementation of FlexNet Manager Suite can use the Windows Scheduled Tasks

system tool to modify the timing of the scheduled task or to modify the command-line options used with the import tool (SAPReader.exe).

Run by: Microsoft Task Scheduler.

Default schedule: activated by default, and set to run daily at 22:00:00 (24-hour format).

Default command line:

```
"Installation-directory\DotNet\bin\SAPReader.exe" -b
```

Import SAP Package License

The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premises installation.

The **Import SAP package license** scheduled task downloads SAP-related updates to the product use rights library (PURL) in FlexNet Manager Suite from the Flexera website.

You can use the Windows Scheduled Tasks system tool to modify the timing of the scheduled task or to modify the command-line options used with the import tool (ImportPurl.exe).

Note: *If you want to manage SAP licenses only in SAP mode of FlexNet Manager Suite, it is recommended to activate the* ***Import SAP package license*** *task. If you want to use SAP mode and the FlexNet Manager Suite console to manage your SAP licenses or a wide range of licenses, it is recommended that you activate the* ***Recognition data import*** *task instead.*

Run by: Microsoft Task Scheduler.

Default schedule: disabled by default, but set to run weekly at 6:00:00 (24-hour format) each Sunday if enabled. If you are happy for updates to occur weekly, enable this task. If you prefer to control when updates occur, leave it disabled and execute it manually at times convenient to you.

Default command line:

```
"Prog-Drive:\Program Files\ManageSoft\Common\ndcrproc.exe"

-e "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\ImportPurl.exe"

-l "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\ImportPurl.exe" -o
CREATE_NO_WINDOW=True -- -l SAPPackages
```

Import SAP User and Activity Information

The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premises installation.

The **Import SAP user and activity information** scheduled task collects user data and activity data from SAP Admin module systems that were defined in SAP mode using the System Landscape Editor (for more information, see Adding an SAP Admin Module System). The collected data usually comprises the following: user names, user roles, the transaction codes that are included in user roles, user consumption (CPU time), module names, transaction codes of the system, the license-type hierarchy and evidence of indirect access.

You can use the Windows Scheduled Tasks system tool to modify the timing of the scheduled task or to modify the

command-line options used with the import tool (SAPReader.exe).

Run by: Microsoft Task Scheduler.

Default schedule: activated by default, and set to run weekly at 12:00:00 (24-hour format) each Sunday.

Default command line:

```
"Prog-Drive:\Program Files\ManageSoft\Common\ndcrproc.exe"

-e "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\SAPReader.exe"

-l "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\SAPReader.exe" -o
CREATE_NO_WINDOW=True -- -l
```

To change the collection period, use the following commands.

Table 15: Commands for customizing the collection period (end date and duration) for consumption data

Parameter	Description
`-p` *`consumption-enddate`*	Specifies the end date of the consumption period, using the format yyyymm. If this parameter is not set, the default end date is used, which is the last day of the previous month.
`-m` *`m-months`*	Specifies for how many months SAP consumption data should be read, ending today or as specified by the `-p` option. If this parameter is not set, consumption data is collected for three months.

Recognition Data Import

The **Recognition data import** scheduled task runs the application recognition and SKU library update tool. This tool downloads updates to the Application Recognition Library (ARL), Stock Keeping Unit library, and Product Use Rights Library (PURL) from the Flexera website into FlexNet Manager Suite.

You can use the Windows Scheduled Tasks system tool to modify the timing of the scheduled task or to modify the command-line options used with the update tool (MgsImportRecognition.exe). For more information, see the *Downloading the FlexNet Manager Suite Content libraries manually* article, located in the Flexera Community Knowledge Base.

Run by: Microsoft Task Scheduler.

Default schedule: Disabled by default, but set to run weekly at 1:00:00 (24-hour format) each Sunday if enabled. If you are happy for updates to occur weekly, enable this task. If you prefer to control when updates occur, leave it disabled and execute it manually at times convenient to you.

Default command line:

```
"Prog-Drive:\Program Files\ManageSoft\Common\ndcrproc.exe"

-e "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\MgsImportRecognition.exe"

-l "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\MgsImportRecognition.exe" -o
CREATE_NO_WINDOW=True
```

Upload Third-Party Inventory Data

The **Upload third-party inventory data** scheduled task executes the ComplianceUpload.exe tool to upload any intermediate data packages that are currently sitting in the IntermediateData folder on the inventory beacon.

When each adapter (inventory or business information) is run, the system attempts an immediate upload to the application server. Therefore this scheduled task should most often check and find an empty folder: it is designed as a catch-up to automatically retry any uploads that previously failed.

You can use the Windows Scheduled Tasks system tool to modify the timing of the scheduled task or to modify the command-line options used with the upload tool (ComplianceUpload.exe).

Run by: Microsoft Task Scheduler.

Default schedule: activated by default, and set to run daily at 12:00:00 (24-hour format), repeated every 10 minutes.

Default command line:

```
"Prog-Drive:\Program Files\ManageSoft\Common\ndcrproc.exe"

-e "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\ComplianceUpload.exe"

-l "Prog-Drive:\Program Files\ManageSoft\DotNet\bin\ComplianceUpload.exe" -o
CREATE_NO_WINDOW=True
```

Special Characters

/LICMAN/BS_READ_TABLE 126
/LICMAN/START, transaction 106

A

Accepted
  processing status of duplicate-user recommendation 98
  processing status of license-type recommendation 96
  recommendation status for independent systems 283
  status in Process License Recommendations report 247
  status in Recommendations History report 253
  status of license-type recommendation 244
accepting
  license-type recommendations 248
  license-type recommendations in Check for License Type 11 report 147
  recommendations on independent systems 286
  released recommendation sets 102
access *see*
  indirect access
access levels
  for license rule sets 54
  for system landscapes 50
  for systems 52
access rights
  account-specific 49
  in SAP mode 49
  managing for license assignment rule sets 53
  managing for system landscapes 50
  managing for systems 51
accessing
  History page 103
  license position history 103
  SAP Overview page 88
  System Landscape Editor 30
  system task information 86
  Transaction Profile Editor 196
accounts
  access rights in SAP mode 49
  account-specific access rights in SAP mode 49
activating, license ratio 69
activity checks 152
  defining 153
  executing 153
  list of 153
  user accounts evidence 174
  viewing results 154
Activity Checks menu 106
Administration menu 106
Advanced Role Utilization 163
alerts
  for package usage, parameters 264
  for package usage, setting 263
ALV Count column 124
ALV grids, sorting 123
analyzing
  package consumption in SAP Admin module 260
  roles 162,163
Application Recognition Library 233
Archived, recommendation set status 103
archiving the license position 103
ARL *see*
  Application Recognition Library
assigning
  license rule set to system 208,209
  packages to systems 238
  rules to system 208,209

B

beacon *see*
  inventory beacon

C

calculating, baseline 204
Central User Administration 114
  clearing CUA settings 116
  introduction 114
  specifying CUA central system 116
Change License Data button 119
Change User Data button 119
changing
  license data in FlexNet Manager for SAP Applications 121
  license data using transaction SU01 122
  user data using transaction SU01 120
Check for License Type 11 report
  accepting license-type recommendations 147
  creating 145
  introduction 145
  troubleshooting 147
collecting
  data from dependent SAP systems 127
  data from independent SAP systems 277
  data from independent systems using beacon 278
  evidence for indirect access 171
  user details and consumption data from SAP systems 48
columns
  changing in FlexNet Manager Suite grids 27
  layout of import files 201
committing
  license-type changes 252
  recommendations on independent systems 288

user data changes 258
communication, between inventory beacon and SAP Admin module 74
comparison types in User Consolidation 193
Compliance Position graph 88
components of FlexNet Manager for SAP Applications 15
configuring
access rights in SAP mode 49
data collection from SAP systems 126
default license rules 212
inventory beacon 70
User Consolidation 194
connections 75
deleting on inventory beacon 80
executing on inventory beacon 80,279
for inventory beacons 75
modifying on inventory beacon 79
to SAP systems on inventory beacon 75
consolidating 192
system measurement results 269
see also
User Consolidation
consolidation 192
see also
User Consolidation
consumption
examples for using spare licenses 63
handling of specific licenses 65
importing into non-SAP system 184
landscape-wide handling of spare licenses 64
of Named User licenses 94
of packages, previewing 240
of spare superior licenses 62
overview of SAP and non-SAP systems 190
reviewing in SAP Consumption Analysis Details dialog 158,164,169
viewing in Consumption Analysis report 159
viewing in License Position section 93
viewing in Module Usage report 169
viewing in Role Utilization report 165
Consumption Analysis report 155
creating 156
reading results 157
viewing consumption details 159
consumption data
collecting 48
identifying users with 144
contact 12
Contract Utilization Analysis report
Contract Utilization, evaluation type 276
creating 274
Licence Analysis (Variance), evaluation type 275
License Usage Contract Total, evaluation type 275
statistics 274
Contract Utilization, evaluation type 276
Cost Center tab, in License Distribution by Cost Center report 149
counting rows in reports in SAP Admin module 124
covering over-consumed licenses 62
CPU time 163
Create RFC Destination button 111
criteria
custom, in User Consolidation 193
general, in User Consolidation 193
CUA *see*
Central User Administration
CUA central system
definition 114
specifying 116
Current vs. Optimal graph 89
custom
license rule properties 294
Custom
license rule 223
custom package formulas, properties and methods 299
custom rule methods 296
customer reports
adding 152
deleting 152
introduction 151
modifying 152
cycle in license-type hierarchy 54

D

dashboard *see*
SAP Overview page
defining
activity checks 153
custom package formula 239
duplicate user rule 230
HR system for individual SAP systems 117
HR system for SAP system groups 117
HR system globally 116
HR system in SAP Admin module 116
Deleted Users, activity check 153
deleting
data in users list 186
Dialog RFC destinations in SAP Admin module 119
license contract information in SAP Admin module 126

license rule set 206
license rule set simulation 226
license types 60,61
non-SAP system 187
packages 240
primary data of packages 261
recommendation sets 105
SAP connections on inventory beacon 80
SAP system from FlexNet Manager Suite 45
SAP system group from FlexNet Manager Suite 48
system landscape in FlexNet Manager Suite 36
dependent SAP systems
adding 38
editing in FlexNet Manager Suite 44
Developer, license rule 213
Dialog RFC destinations
in SAP Admin module 118
removing in SAP Admin module 119
setting, manually 119
setting, using Wizard option 118
displaying
details of rule set 207
duplicate user recommendations 98
license assignment recommendations 95
license contract information in SAP Admin module 125
license-type hierarchy 56
package details 236
package measurement results 263
packages 261
packages in FlexNet Manager Suite 234
SAP Overview page 88
SAP system users in FlexNet Manager Suite 46
system landscape details 31
system task information 83
users of non-SAP system 183
documentation 11
downloading, templates 233
drilldown into license-type hierarchy 57
duplicate user recommendations
details 98
viewing 98
Duplicate User Recommendations report 255
changing recommendation status 257
committing user data changes 258
creating 255
introduction 255
modifying user data 257
reviewing 256
status values 256
Duplicate User Recommendations tab 98
Duplicate User rule 228
custom criteria 229
defining 230
example 230
general criteria 229
previewing 231
duplicates rules, properties 294

E

editing
dependent SAP system in FlexNet Manager Suite 44
independent SAP system in FlexNet Manager Suite 43
license types 61
package information 238
SAP system group in FlexNet Manager Suite 48
system landscape in FlexNet Manager Suite 35
transaction profiles 203
Email Addresses, license rule 213
Engines *see*
packages
evidence
for indirect access 171,174
hiding and showing remote systems 172
hiding and showing user accounts 175
linking to non-SAP system 187
managing 177
multiple logons 176
remote system details 173
unlinking 189
user accounts details 176
viewing for remote systems 171
viewing for user accounts 174
work time 176
excluding users from license position 213
executing
activity checks 153
package measurement 262
SAP connections on inventory beacon 80,279
system measurement 268
Expired Users, activity check 153
exporting
license-type recommendations for independent SAP systems 280
exporting, grids in FlexNet Manager Suite 27
Extras menu 106

F

features by release 11
Field Chooser 27
Filter Builder

options 25
using 24
filtering
advanced options 24
basic options 24
compared to search function 26
Filter Builder options 25
grids in FlexNet Manager Suite 24
system tasks 86
turning on and off 26
using the Filter Builder 24
FlexNet Beacon 70
FlexNet Manager Suite
initial setup 29
introduction 16
formulas
custom, for packages 239
packages 233
function modules
LICMAN/MS_ENGINE_CUSTTEMPLATE 293
LICMAN/MS_LDAP 292
Future Users, activity check 153

G

graphs
changing period 90
Compliance Position 88
Current vs. Optimal 89
License Ratios 89
License Utilization 89
Named User Licenses 88
grids
advanced filtering 24
changing columns in FlexNet Manager Suite 27
exporting in FlexNet Manager Suite 27
introduction 23
restoring after search 27
searching 26
searching in FlexNet Manager Suite 26
simple filtering in FlexNet Manager Suite 24

H

Handling over-consumption of license types, option 31,64
Handling over-consumption of this license type, option 65
help 11
hiding
remote system evidence 172
user accounts evidence 175
hierarchy *see*
license-type hierarchy
history
license rule set simulation 227
license rule set simulation details 226
of license-type recommendations 252
History page *see*
license position history
HR system
defining for individual SAP systems 117
defining for SAP system groups 117
defining globally 116
defining in SAP Admin module 116
removing 117

I

identifying
duplicate users in FlexNet Manager Suite 228
inactive users 144
objects in transaction profiles 202
users with consumption data 144
users with multiple logons 144
users without logon 144
IdM
User Maintenance button functionality 120
Ignored
recommendation status for independent systems 283
status in Process License Recommendations report 247
status in Recommendations History report 253
status of license-type recommendation 244
ignoring license-type recommendations 251
Import SAP inventories, scheduled task 305
Import SAP package license, scheduled task 233,306
Import SAP user and activity information, scheduled task 306
importing
column layout for files 201
data into non-SAP system 182
data into users list 183
objects into transaction profile 199
recommendations for independent SAP systems 281
recommendations into SAP Admin module 243
source data of packages 260
system landscape from FlexNet Manager Suite 110
inactive users, identifying 144
independent SAP systems
adding 41
data collection from 277
data collection using beacon 278
editing in FlexNet Manager Suite 43
exporting license-type recommendations for 280
importing license-type recommendations 281
measuring packages 279

independent systems
optimization 277
indirect access 170
collecting evidence 171
creating a non-SAP system 180
creating a non-SAP system via Indirect Access page 181
hiding and showing remote system evidence 172
hiding and showing user accounts evidence 175
license consumption overview 190
linking evidence 187
linking evidence to existing system via Indirect Access page 188
linking evidence to new system via Indirect Access page 188
linking remote-system evidence using Details page 188
linking user-account evidence using Details page 189
managing evidence 177
remote system evidence 171
report 190
types 170
unlinking evidence 189
user accounts evidence 174
using pre-defined non-SAP system 178
viewing evidence for remote systems 171
viewing evidence for user accounts 174
viewing non-SAP system details 178
viewing remote system evidence 173
viewing user accounts evidence 176
workflow 170
Indirect Access Evidence report
creating 191
introduction 190
reading 191
Indirect Access page, accessing 174
initializing
license data fields 122
user data fields 121
installing, inventory beacon 70
inventory beacon 70
collecting data from independent system 278
communication with SAP Admin module 74
configuring 70
creating SAP connections 75
deleting SAP connections 80
executing SAP connections 80,279
installing 70
introduction 70
managing connections 75
modifying SAP connections 79
workflow 70

L

landscape *see*
system landscape
Last Logon, license rule 214
LAW
invoking 269
loading results into FlexNet Manager for SAP Applications 270
LAW result lists 270
layout of import files 201
LDAP connections, user exit 292
Licence Analysis (Variance), evaluation type 275
License Analysis report
creating 273
data 274
statistics 273
license assignment recommendations *see*
license-type recommendations
License Assignment Recommendations tab 95
license assignment rule sets *see*
license rule sets
License Chargeback report *see*
License Distribution by Cost Center report
license contract information 124
deleting in SAP Admin module 126
displaying in SAP Admin module 125
maintaining in SAP Admin module 124
modifying in SAP Admin module 126
specifying in SAP Admin module 125
license data
changing in FlexNet Manager for SAP Applications 121
changing using transaction SU01 122
initializing fields 122
modifying 123
License Distribution by Cost Center report 148
Cost Center tab 149
creating 148
introduction 148
License Type tab 151
reading 149
User tab 150
license hierarchy *see*
license-type hierarchy
license position
archiving 103
current 91
detailed package consumption 100
displaying duplicate user recommendations 98

displaying license assignment recommendations 95
excluding users 213
history 103
including license ratio 66
influence of non-SAP systems 190
introduction 91
license consumption 93
Named User licenses 94
optimization 155
packages 99
recalculating 101
User License Summary tab 94
license position history 103
accessing 103
deleting recommendation sets 105
viewing 105
License Position page
Duplicate User Recommendations tab 98
License Assignment Recommendations tab 95
Named User licenses 94
license ratio 66
examples 66
in over-consumption scenarios 63
introduction 66
specifying 69
License Ratios graph 89
license rule sets 53
access levels 54
adding rules 207
assigning to system 208,209
changing order 209
copying 207
creating 206
delete simulation 226
deleting 206
displaying details 207
introduction 205
list of simulations 227
managing access rights 53
order 209
run simulation 225
S/4HANA 209
simulation history 227
simulation history details 226
simulations 225
view simulation 226
license rules 204,228
adding to license rule set 207
assigning to system 208,209
calculating the baseline 204
changing order 210
configuring 212
Custom 223
default 212
Developer 213
Duplicate User 228
Email Addresses 213
excluding users from license position 213
introduction 204
Last Logon 214
License Type 214
Locked User 215
Low Consumption 216
Non-Production SAP System 216
order 209
previewing 210
retiring users 212
Roles 217
S/4HANA 209
Total Consumption 218
Transaction Profile by Maximum Object Types Used 218
Transaction Profile by Maximum Objects Used 219
Transaction Profile by Percentage 220
Transaction Profile Limit 221
User Groups 221
User Names 222
User Types 223
license type 11, report 145
License Type tab, in License Distribution by Cost Center report 151
License Type, license rule 214
license types
adding 60
consuming spare 62
deleting 60,61
details 57
editing 61
handling over-consumption for specific licenses 65
handling over-consumption, landscape-wide 64
license ratio 66
recommended 58
License Usage Contract Total, evaluation type 275
License Utilization graph 89
LICENSE_ADMIN, transaction 269
license-type hierarchy 54
adding license types 60
deleting license types 60,61
details 56

drilling into 57
editing license types 61
introduction 54
loading information 55
unit price 61
viewing 56
license-type recommendations 96,247
accepting in Check for License Type 11 report 147
accepting in SAP Admin module 248
committing changes in SAP Admin module 252
details 96
exporting for independent SAP systems 280
history in SAP Admin module 252
ignoring in SAP Admin module 251
importing for independent systems 281
overwriting in SAP Admin module 250
processing for independent systems 282
rejecting in SAP Admin module 249
resetting in SAP Admin module 251
reviewing in SAP Admin module 247
status 96
status in SAP Admin module 247
viewing 95
licenses, handling when in breach 62
licensing packages 232
LICMAN/MS_ENGINE_CUSTTEMPLATE, function module 293
LICMAN/MS_LDAP, function module 292
linking evidence
for remote systems via Details page 188
for user-accounts via Details page 189
to non-SAP system 187
via Indirect Access page to existing system 188
via Indirect Access page to new system 188
list view of system landscape 108
loading, license-type hierarchy 55
Locked User, license rule 215
log files
for SAP Inventory Agent 19
for staging database 135
for task type "SAP import" 83
for user primary data modifications 142
Logon after Expiration, activity check 153
Logon Evaluation report 141
creating 142
reading 144
logon, users without 144
Low Consumption, license rule 216

M

Main menu of the SAP Admin module 106
main navigation bar of FlexNet Manager Suite 22
Maintain RFC Assignments grid
adding RFC destination 111
modifying RFC destination 112
reference 113
specifying CUA central system 116
testing RFC destination 112
maintaining
license contract information in SAP Admin module 124
RFC destinations 109
Management Summary report
creating 271
data 272
statistics 271
managing
access rights for license assignment rule sets 53
access rights for system landscapes 50
access rights for systems 51
access rights in SAP mode 49
account-specific access rights in SAP mode 49
data in non-SAP system 182
evidence using non-SAP systems 177
inventory beacon connections 75
system landscape in FlexNet Manager Suite 34
measurement 262,268
see also
package measurement
, system measurement
Measurement/LAW menu 106
Measurement/LAW, menu 268,269,270
methods
for custom package formulas 299
for defining custom rules 296
metrics, for packages 233
Microsoft Internet Information Services (IIS) 74
modal navigation bar of FlexNet Manager Suite 22
modification logs for user data 123
Modify RFC Destination button 112
modifying
license contract information in SAP Admin module 126
license data in FlexNet Manager for SAP Applications 121
license data using transaction SU01 122
user data using transaction SU01 120
module hierarchy 165
Module Usage report 165
creating 165
reading results 166
viewing consumption details 169

monitoring system tasks 82
Multiple Logons
activity check 153
tab 176
multiple logons, identifying users with 144

N

Named User Licenses graph 88
Named User licenses, overview 94
navigation bars of FlexNet Manager Suite 22
ndcrproc.exe
command-line tool 304
parameters 304
new features 11
Non-Production SAP System, license rule 216
non-SAP systems
changing users list 186
creating 180
creating using System Landscape Editor 180
creating via Indirect Access page 181
deleting 187
deleting data in users list 186
importing data 182,183
linking evidence 187
linking evidence to 171,174
managing data 182
managing evidence 177
predefined 178
preparing data for import 184
unlinking evidence 189
users list 183
viewing details 178

O

objects
adding to transaction profile 198
identifying in transaction profiles 202
importing into transaction profile 199
in transaction profiles 197
viewing in transaction profiles 203
optimization
identifying duplicate users 228
initial, in SAP Admin module 137
introduction 155
package licensing 232
using transaction profiles 196
optimization rules *see*
license rules
order
of license rule sets 209
of license rules 209
outline view of system landscape 31
over-consumption
examples 63
handling for specific licenses 65
handling on landscape-wide basis 64
introduction 62
overwriting
recommendations on independent systems 287
overwriting, license-type recommendations 250
Overwritten
recommendation status for independent systems 283
status in Process License Recommendations report 247
status in Recommendations History report 253
status of license-type recommendation 244

P

package analysis
deleting primary data 261
displaying packages 261
importing source data 260
workflow in SAP Admin module 260
Package Analysis Overview report 264
Package Consumption Summary tab 99,100
package measurement 262
displaying results 263
executing 262
introduction 262
package usage alerts 263
parameters 264
setting 263
packages 232
adding manually 235
assigning to systems 238
consumption per system 100
consumption summary 99
defining custom formula 239
deleting 240
deleting primary data 261
details 237
displaying 234,261
displaying all in landscape 264
displaying previous measurements 280
editing 238
formulas 233
importing source data 260
in SAP Admin module 260
license templates 233
licensing 232
measuring 262,263
measuring on independent systems 279

metrics 233
previewing consumption 240
usage alerts 263
usage alerts parameters 264
user exit 293
viewing details 236
workflow 232
Packages menu 106
page elements of FlexNet Manager Suite 22
parameters for package usage alerts 264
Pending
processing status of duplicate-user recommendation 98
processing status of license-type recommendation 96
recommendation status for independent systems 283
status in Process License Recommendations report 247
status in Recommendations History report 253
status of license-type recommendation 244
Portal menu 106
predefined non-SAP system 178
preparing data for import 184
previewing
duplicate user rule 231
license rule results 210
package consumption 240
User Consolidation results 195
primary data
for packages, deleting 261
Process License Recommendations report
accepting recommendation 248
committing license-type changes 252
creating 244
ignoring recommendation 251
introduction 244
overwriting recommendation 250
rejecting recommendation 249
resetting recommendation 251
reviewing 247
status of recommendations 247
status values 244
Process Recommendations Offline report
creating 282
information in 284
introduction 282
status values 283
processing
released recommendation sets 102
product training 12
product use rights 233
Product Use Rights Library 233
Prof./Limited Prof. Users, activity check 153
properties
Custom rules 294
Duplicate User rules 294
for custom package formulas 299
User Consolidation 294
PUR *see*
product use rights
PURL *see*
Product Use Rights Library

R

ratio *see*
license ratio
recalculating, license position 101
Recognition data import, scheduled task 233,307
Recommend promoting users to spare superior licenses, option 31,64,65
Recommendation History report
creating 252
information in 253
introduction 252
recommendation sets
accepting 102
deleting from history 105
history 103
processing 102
rejecting 102
reviewing 102
status 103
viewing last sent to SAP Admin module 102
viewing pending 102
recommendations 247,255
accepting on independent systems 286
changing status in Duplicate User Recommendations report 257
committing on independent systems 288
importing into SAP Admin module 243
overwriting on independent systems 287
rejecting on independent systems 286
releasing to SAP Admin module 101
resetting on independent systems 288
see also
Duplicate User Recommendations report
, license-type recommendations
Rejected
processing status of duplicate-user recommendation 98
processing status of license-type recommendation 96
recommendation status for independent systems 283
status in Process License Recommendations report 247

status in Recommendations History report 253
status of license-type recommendation 244
rejecting
license-type recommendations 249
recommendations on independent systems 286
released recommendation sets 102
release notes 11
released recommendations
accepting 102
processing 102
rejecting 102
reviewing 102
Released, recommendation set status 102
releasing recommendations to SAP Admin module 101
remediation
introduction 242
remote systems
evidence for 171
hiding and showing evidence 172
managing evidence 177
viewing evidence 171
viewing evidence details 173
remote-system evidence 188
removing
Dialog RFC destinations in SAP Admin module 119
HR system setting 117
reports
ALV Count column 124
Check for License Type 11 145
Consumption Analysis 155
Contract Utilization Analysis 274
counting rows 124
Duplicate User Recommendations 255
Indirect Access Evidence 190
License Analysis 273
License Distribution by Cost Center 148
Logon Evaluation 141
Management Summary 271
Module Usage 165
Package Analysis Overview 264
Process License Recommendations 244
Process Recommendations Offline report 282
Recommendation History 252
Role Utilization 159,163
RSUVM001 268
User Activity 163
User Data Validation 137
XI Adapter Data Volume 266
resetting
license-type recommendations 251
recommendations on independent systems 288
system landscape 111
resources 11
retiring users 212
Review pending recommendations, link 102
reviewing
duplicate user recommendations 256
license-type recommendations 247
pending recommendation sets 102
released recommendation sets 102
RFC Connection Details page 173,176
RFC Connections tab
showing and hiding remote system details 172
showing and hiding user accounts details 175
viewing evidence for remote systems 171
viewing evidence for user accounts 174
RFC destinations
adding 111
creating 111
maintaining 113
modifying 112
setup and maintenance 109
shortcut to SM59 111
testing 112
RFC_READ_TABLE 126
Role Utilization report 159
advanced role analysis 162
Advanced Role Utilization analysis 163
creating 160
reading results 160
User Activity analysis 163
viewing consumption details 165
roles
advanced analysis 162
Advanced Role Utilization analysis 163
importing into non-SAP system 184
User Activity analysis 163
Roles, license rule 217
RSUVM001, report 268
rules *see*
license rules

S

S/4HANA 58,61
SAP Admin module
accessing 106
adding in FlexNet Manager Suite 36
communication with inventory beacon 74
communication with inventory beacons 74

initial optimization 137
introduction 17
SAP connections *see*
connections
SAP Consumption Analysis Details dialog 158,164,169
SAP Import, system task 82
SAP Inventory Agent
collecting evidence 171
introduction 18
logging 19
options 18
SAP license contract information *see*
license contract information
SAP mode 21
accessing 21
License Position section 91
SAP Overview page 88
SAP Overview page 21,88
accessing 88
changing period 90
Compliance Position graph 88
Current vs. Optimal 89
displaying 88
License Ratios 89
License Utilization 89
Named User Licenses graph 88
SAP package measurement *see*
package measurement
SAP packages 260
SAP system groups 47
adding in FlexNet Manager Suite 47
deleting from FlexNet Manager Suite 48
editing in FlexNet Manager Suite 48
SAP systems 45
access levels 52
adding dependent in FlexNet Manager Suite 38
adding independent in FlexNet Manager Suite 41
changing independent into dependent 38
collecting data from 48
deleting from FlexNet Manager Suite 45
managing access rights 51
types in SAP Admin module 108
users list in FlexNet Manager Suite 46
SAP Systems section 31
SAP User Account Details page 176
SAPService, web service 74
Satellite transport 18
scheduled tasks
Import SAP inventories 305
Import SAP package license 233,306
Import SAP user and activity information 306
Recognition data import 233,307
Upload third-party inventory data 308
using ndcrproc.exe 304
searching
compared to filtering 26
grids 26
grids in FlexNet Manager Suite 26
security in SAP mode 49
settings bar of FlexNet Manager Suite 22
setup
FlexNet Manager Suite 29
HR system in SAP Admin module 116
of RFC destinations 109
of system landscape in FlexNet Manager Suite 29
Show deficits against assigned license (license appears at risk), option 64
Show deficits against assigned license (license is at risk), option 31
Show deficits against this license (license is at risk), option 65
Show outline view of landscape, check box 31
Show user license summary, link 95,98
showing
remote system evidence 172
user accounts evidence 175
simulations
deleting 226
history 227
history details 226
license rule sets 225
list of, for license rule sets 227
running, of license rule sets 225
viewing, of license rule sets 226
SLG1, transaction 123
SM37, transaction 243
SM59, shortcut to transaction 111,112
source data
for packages, importing 260
spare licenses
consuming 62
examples for consuming 63
handling over-consumption for specific licenses 65
handling over-consumption, landscape-wide 64
Staging Database Monitor
accessing logs 135
best practice 130
data collection status 131

executing 127
introduction 126
log results 136
logs 135
scheduling job 131
statistics
Contract Utilization Analysis report 274
introduction 271
License Analysis report 273
Management Summary report 271
Statistics menu 106
status
of Duplicate User recommendations 256
of duplicate user recommendations, changing 257
of license-type recommendations 247
of system landscape in FlexNet Manager Suite 30
status indicator for system tasks 82
SU01, transaction 120,122
SWNC_COLLECTOR_GET_AGGREGATES 126
synchronizing, system landscape 110
system group *see*
SAP system groups
system landscape 107
access levels 50
adding an SAP system group 47
adding in FlexNet Manager Suite 35
deleting in FlexNet Manager Suite 36
Details section 31
Dialog RFC destinations in SAP Admin module 118
displaying SAP system users 46
editing an SAP system group 48
editing in FlexNet Manager Suite 35
importing in SAP Admin module 110
in SAP Admin module 107
list view in SAP Admin module 108
managing access rights 50
managing in FlexNet Manager Suite 34
resetting 111
selecting 21
setup in FlexNet Manager Suite 29
status 30
synchronizing 110
system types in SAP Admin module 108
System Landscape Editor
accessing 30
adding a dependent SAP system 38
adding a system landscape 35
adding an independent SAP system 41
adding an SAP system group 47
adding SAP Admin module 36
creating a non-SAP system 180
deleting a system landscape 36
deleting an SAP system 45
deleting an SAP system group 48
displaying SAP system users 46
editing a dependent SAP system 44
editing a system landscape 35
editing an independent SAP system 43
editing an SAP system group 48
outline view 31
system measurement 268
consolidating results 269
executing 268
loading LAW results into FlexNet Manager for SAP Applications 270
workflow 268
system tasks
accessing 86
displaying 83
filtering for SAP-related tasks 86
monitoring 82
SAP Import 82
selecting for monitoring 83
status indicator 82
systems *see*
SAP systems

T

task monitoring 82
templates
download 233
for import into non-SAP system 184
packages 233
Test RFC Destination button 112
testing, RFC destinations 112
Total Consumption, license rule 218
transaction
/LICMAN/START 106
SLG1 123
SU01 120,122
Transaction Profile by Maximum Object Types Used, license rule 218
Transaction Profile by Maximum Objects Used, license rule 219
Transaction Profile by Percentage, license rule 220
Transaction Profile Editor
accessing 196
introduction 196
Transaction Profile Limit, license rule 221

transaction profiles
accessing 196
adding objects 198
creating 198
details 197
editing 203
identifying objects 202
importing objects 199
introduction 196
objects 197
populating 198
viewing objects 203
Transaction Profiles page 196
transactions
LICENSE_ADMIN 269
SM37 243
USMM 268
troubleshooting, Check for License Type 11 report 147

U

unit price 61
unlinking evidence 189
Unprocessed
recommendation status for independent systems 283
status in Process License Recommendations report 247
status in Recommendations History report 253
updating, user data in FlexNet Manager for SAP Applications 120
Upload third-party inventory data, scheduled task 308
URL for SAP mode 21
usage alerts *see*
package usage alerts
user accounts
evidence details 176
evidence for 174
hiding and showing evidence 175
managing evidence 177
viewing evidence 174
viewing evidence details 176
User Activity 163
User Consolidation 192
comparison types 193
configuring 194
custom criteria 193
general criteria 193
introduction 192
previewing results 195
properties 294
user data
changing in FlexNet Manager for SAP Applications 120
changing using transaction SU01 120
collecting 48
committing changes 258
importing into non-SAP system 184
initializing fields 121
modification logs 123
modifying 123
modifying in Duplicate User Recommendations report 257
user data check
changing description 291
copying a user exit 291
create user exit 290
deleting ID 292
modifying a user exit 291
setting for User Data Validation report 138
user exit 290
User Data Validation report
creating 139
defining criteria 138
introduction 137
user exits
changing description 291
copying a user data check 291
create for packages 293
create user data check 290
creating for LDAP connections 292
deleting ID 292
for LDAP connections 292
for packages 293
introduction 290
modifying a user data check 291
modifying for packages 293
user data check 290
User Exits LDAP Connection, menu item 292
User Exits Packages, menu item 293
User Exits User Data Check, menu item 290
User Groups, license rule 221
User License Summary tab 94
User Maintenance button 119
User Maintenance button IdM
using IdM 120
using the User Maintenance button 120
User Names, license rule 222
User tab 150
User Types, license rule 223
user-account evidence 189
users
excluding from license position 213

retiring 212
Users grid 46
users list
changing data 186
deleting data 186
import template 184
importing data 183
of non-SAP system 183
of SAP system 46
USMM, transaction 268

V

View recommendations sent to SAP, link 102
viewing
details of remote system evidence 173
details of user accounts evidence 176
license position history 105
non-SAP system details 178
objects in transaction profiles 203
pending recommendation sets 102
recommendation set last sent to SAP Admin module 102
remote system evidence 171
user accounts evidence 174
user data modification logs 123

W

web service
SAPService 74
well-formed license-type hierarchy 54
Wizard, for Dialog RFC destinations 118
Work Time tab 176
Work Time, activity check 153
Workbench Users, activity check 153
workflow
FlexNet Manager for SAP Applications 15
for using inventory beacons 70
indirect access 170
package consumption analysis 232

X

XI Adapter Data Volume report 266
XI system 266