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for SAP® Applications

FlexNet Manager for SAP Applications 2015 R2 SP4
User Guide

Legal Information

Book Name: FlexNet Manager for SAP Applications 2015 R2 SP4 User Guide

Part Number: FNMS-2015R2SP4-UG01

Product Release Date: March 2016

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Introduction to FlexNet Manager for SAP Applications

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.

How to Use This Guide

The structure of this guide mimics the workflow of how you typically would use the features of FlexNet Manager for SAP Applications.

Note • For this user guide, it is assumed that you are familiar with SAP administrative tasks.

Table 1-1 • *FlexNet Manager for SAP Applications User Guide* chapters

Topic	Content
Components for FlexNet Manager for SAP Applications	An overview of the product's main structural components.
Activating FlexNet Manager Suite	Before you start using FlexNet Manager Suite, you must activate your license (applicable only if you are using an on-premise installation).
Using SAP Functionality in FlexNet Manager Suite	Introduces the FlexNet Manager for SAP Applications features that are available in SAP mode in FlexNet Manager Suite.
Using the SAP Admin Module	Describes the main elements of the SAP Admin module and how to use them.
Initial Setup of FlexNet Manager Suite	Offers guidance on how to set up FlexNet Manager Suite for the first time.

Table 1-1 • *FlexNet Manager for SAP Applications User Guide* chapters

Topic	Content
Setting up the SAP Admin Module	Explains how to use the system landscape, maintain SAP license contract information, configure IdM-related features, and use the Duplicates Rules Editor. Informs you about how to connect customer reports.
Access Rights to SAP Functionality in FlexNet Manager Suite	Describes the security model of FlexNet Manager Suite and functionality in SAP mode.
SAP License Position	Explains the features that are available to display your company's license position.
Initial Optimization	Helps you to perform the steps necessary for an initial optimization of your company's license position.
Regular Optimization of the License Position in FlexNet Manager Suite	Informs you about the features that you can use on a regular basis to optimize your company's license position.
Regular Optimization and Remediation in the SAP Admin Module	Describes how to process license-type recommendations in the SAP Admin module, and explains the features of license optimization reports that are available in the SAP Admin module.
SAP Package Licensing in FlexNet Manager Suite	Offers guidance on analyzing the SAP package consumption in FlexNet Manager Suite.
Working with Offline Systems	Explains what offline systems are in the context of FlexNet Manager for SAP Applications and how to use FlexNet Manager for SAP Applications to analyze data residing on these systems.
Performing an SAP Package Analysis	Describes how to measure SAP package data.
Running Activity Checks	Contains information on how to execute activity checks and view the activity check results.
Executing the LAW Measurement	Provides guidance on running LAW measurements using the SAP Admin module.
Statistics in the SAP Admin Module	Introduces the statistical features that are available in the SAP Admin module.
SAP Enterprise Portal Access using the SAP Admin Module	Explains how to load user master data and statistical data from an SAP enterprise portal and display the data using the SAP Admin module.
User Exits in the SAP Admin Module	Shows you how to add functionality to FlexNet Manager for SAP Applications using user exits in the SAP Admin module.

Table 1-1 • *FlexNet Manager for SAP Applications User Guide* chapters

Topic	Content
Troubleshooting Web Service Errors	Lists standard SAP error messages that might be triggered during the execution of web services, and provides possible resolution suggestions.

What's New in This Release

The FlexNet Manager for SAP Applications 2015 R2 SP4 Release Notes list the new features that are available in this release. You can find the release notes in the following locations:

- Installed with the product as `FlexNet Manager Suite Release Notes`.pdf in the root directory of the product installation on your compliance server (by default, `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform`).

- Downloadable from the Flexera Software 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 top-right corner of each page.

The *FlexNet Manager for SAP Applications Installation Guide* 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.

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 Software 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.

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Components for FlexNet Manager for SAP Applications

FlexNet Manager for SAP Applications is designed for use with SAP® 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

Workflow Summary

FlexNet Manager Suite runs the SAP Inventory Agent, which remotely connects to all of your enterprise's SAP systems. The agent extracts user data, including CPU consumption times. (For SAP systems that are inaccessible from FlexNet Manager Suite, the SAP Inventory Agent can be copied to other machines with direct access to the inaccessible systems.) After the agent collects the usage data, 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 can be imported into the SAP Admin module. In the SAP Admin module, the SAP administrator can review the recommended changes and decide which recommendations they want to accept and set the license types as suggested. When the SAP administrator updates the license types, the SAP Admin module then accesses the user master records on the SAP systems (these are also referred to as satellite systems) and updates them accordingly.

FlexNet Manager Suite

FlexNet Manager Suite, which is including FlexNet Manager Platform, 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 high-level 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 company's system landscape, reflecting your company's structure or your company's SAP contracts. The systems that you include in the system landscape are inventoried by the SAP Inventory Agent and provide data such as user master 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 Using SAP Functionality in FlexNet Manager Suite on page 13, 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. It 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.

You use the SAP Admin module to update the user master records 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 master data to optimize the quality of the user records (for example, the Logon Evaluation report—see Logon Evaluation Report on page 126). This helps to improve the results of the license optimization. You can specify the relevant criteria on the SAP Admin module according to your company's requirements.

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 in chapter Using the SAP Admin Module on page 27.

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

FlexNet Manager for SAP Applications satellite transports (RFC-enabled function modules and the required data structures) enable you to collect SAP package data and run activity checks. Transports must be installed on all systems with SAP packages, if you want to optimize the relevant package licenses. They also need to be installed on systems for which you want to run activity checks.

The Satellite transport must also be installed to retrieve the module hierarchy. The Module Usage report analyzes the module information, and the resulting data can be used to create transaction profiles. For more information, see Module Usage Report on page 144.

For each 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 7.4.

SAP Inventory Agent

The SAP Inventory Agent (SAPReader.exe) accesses and collects the user master record information from SAP systems via Remote Function Call (RFC). The data 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. In SAP mode, you use the System Landscape Editor to specify the SAP systems from which you want to collect data for analysis. This data is cached in the FlexNet Manager Suite database and can be used to optimize your license position.

In on-premise implementations, the SAP Inventory Agent is run using the Windows scheduled 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 on-premise 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.

In cloud-based implementations, the SAP Inventory Agent is executed using a schedule on an inventory beacon. For more information on inventory beacons, see Inventory Beacons on page 49. For information on scheduling tasks on inventory beacons, see *Scheduling Page* in the section *Inventory Beacons* in the FlexNet Manager Suite online help.

SAP Inventory Agent Options

You can use the following options for the SAP Inventory Agent.

Table 2-1 • 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.
-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>*/*<ClientID>*,*<ServerName>*/*<SystemNumber>*/*<ClientID>* This option supports any string matching.
-t	Reads SAP information in a single thread.
-a	Tests the connection to all 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.
-m *<months>*	Specifies the number of months that SAP consumption data should be read, ending today or as specified by the -p option. Example: "SAPReader.exe -p 201505 -m 2"
-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.

The SAP Inventory Agent also enables you to analyze data that is located on offline systems. For more information, see

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 Software\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 Software\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 will be kept for 30 days; log files that are older than that are automatically deleted.

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Activating FlexNet Manager Suite

Note • The information in this chapter is relevant only if you are using FlexNet Manager Suite in an on-premise installation.

This chapter describes how to apply your license to activate FlexNet Manager Platform using the **Product Activation** wizard. After you have activated FlexNet Manager Platform, you can use the **Product Activation** wizard to view details about your license.

Starting the Product Activation Wizard

There are two ways to start the **Product Activation** wizard:

- After installing FlexNet Manager Platform, the first time you start it from the Windows Start menu, the **Product Activation** wizard starts automatically.

- You can start the wizard manually by navigating to the installed executable, and running it from Windows. By default, this executable file is installed at `C:\Program Files (x86)\Flexera Software\DotNet\bin\ManageSoft.Activation.Wizard.exe`.

When the **Product Activation** wizard starts, the **License Details** page is displayed.

License Details Page

This page shows the license associated with your installation.
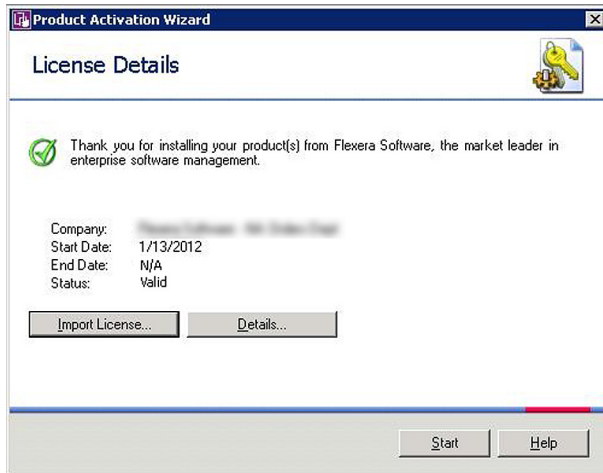
Figure 3-1: The **License Details** page shows your FlexNet Manager Platform license

From this page, you can do the following:

● Start FlexNet Manager Platform with a current license. To start FlexNet Manager Platform, click **OK**.

● Import a license file that you have received from Flexera Software (see Importing a License on page 11).

● View the terms of a license (see Viewing the License Details on page 12).

Importing a License

The process of identifying a file on your compliance server that contains license terms and an activation key is referred to as *importing* a license.

Task: **_To import a license:_**

1. You received a file from Flexera Software that contains the license terms and an activation key. Copy this file to a location on your compliance server such as `C:\Program Files\ManageSoft`.

2. From the first page of the **Product Activation** wizard, click **Import License...**.

   An **Open** dialog is displayed.

3. Enter (or browse for) the name and location of the file you copied to your compliance server in step 1.

4. Click **Open**.

   If the file you specified contains valid license data, the license is activated, and the license details are updated. (This update message appears at the bottom of the **License Details** page).

5. Click **Start** to close the **Product Activation** wizard and start using FlexNet Manager Platform.

Viewing the License Details

A single license can enable and/or disable multiple features within the product(s) you have purchased. Each product may contribute multiple terms to your license. To see which product features your license enables, you can view the license details.

Task: ***To view license details:***

1. On the first page of the **Product Activation** wizard, select the license.

2. Click **Details...**.

   The **License Details** page shows the details of the selected product license.
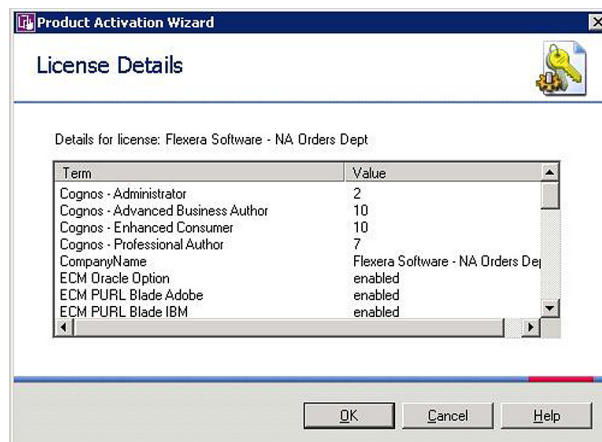
Figure 3-2: License details for the selected license

3. Review license terms. You cannot change these terms. (If you have any questions about the license terms, contact your Flexera Software representative.)

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Using SAP Functionality in FlexNet Manager Suite

In this chapter you will learn about:

- Using general SAP functionality of FlexNet Manager Suite.

- The **SAP Overview** page (also called the *dashboard*).

Accessing the SAP Features

Task: **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. On the FlexNet Manager Suite web interface, click **SAP**.

The **SAP Overview** page is displayed.

If your setup contains more than one system landscape, the **Choose a SAP System Landscape** page is displayed. 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 breadcrumbs (below the main navigation bar).

Selecting the System Landscape

If your setup contains more than one landscape, you are prompted to select the system landscape in which you want to work each time 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.

Task: ***To select a system landscape when prompted:***

If the **Choose a 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

There are a number of common elements that you will 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 *status indicator for system tasks* shows the status of monitored tasks (displayed only if you have appropriate access rights).

- 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.
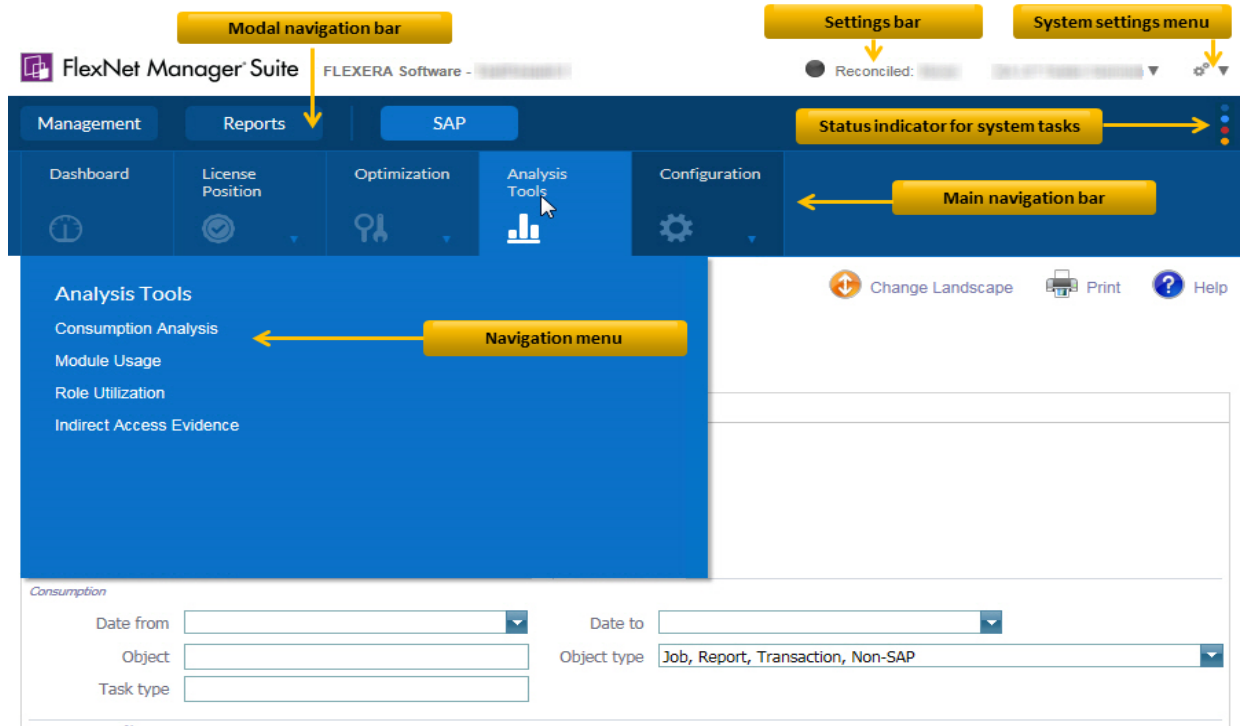
Figure 4-1: Navigation elements of a page in FlexNet Manager Suite

Using 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 (see Exporting a Grid on page 22 for details). The following sections describe the techniques you can use.

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.

When You First Access a Grid

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.

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.

Task: ***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**.

Changing the Order of Columns in a Grid

Task: ***To change the order of columns in a grid:***

1.   Click the heading of the column you wish to move, and drag the column across (left or right) to the position in the grid where you want the column to appear.

2.   While still holding down the mouse button, hold the column in position for a few seconds, until two arrows indicate the column's new position. Then release the mouse button.

Sorting Columns

All grids enable you to sort the items into a different order. The sort order persists: That is, the next time you view a page, it is sorted in the way you last left it.

Task: *To sort a grid:*

Click the column header you want to sort by.

The sorted column displays a small black arrow to the right of the column header that indicates the sort order (ascending, or increasing, order as you read the grid displays an up arrow).

After changing the column that controls the sort order, you may see completely different items in the grid. This is because the sort is applied to all the data in the database, and not just to the currently displayed page.

Each time you click the header of the same column, the sort order reverses.

Sorting Multiple Columns

You can create a sort order based on the most important column, and then apply a secondary sort within that on another column. You can repeat this for as many columns as needed.

Task: *To sort on multiple columns:*

1. Click the header at the top of the first column you want to sort by.

2. Hold down the **Shift** key, and click the title of the secondary sort column.

To reverse the order of any sorted column, hold down the **Shift** key and click the sorted column header.

Grouping

For all grids, you can group items together based on the values in any visible column. You can also have multiple groups within groups. If you navigate away to another page and return, this page displays groups as you last left them.

Task: *To group grid items by the values in one column:*

1. At the top of the grid, click **Advanced**.

2. In the displayed menu, click **Show Grouping**. (A check mark appears next to this menu item.)

   A new area appears between the button bar and the column headers. It displays the text **Drag a column header here to group by that column**.

3. Select your chosen column header, and drag it up and to the left of this newly-displayed area. When two small arrows appear, drop the column header in the grouping area.

The grid display changes. Each row now displays an expander control, the column name, and the column value for this group. It also displays the count of items in this group.

4. To see the members of a group, click the expander control on the left of the group header row. Click a second time to collapse the group so that only its heading shows.

You can sort the groups (ascending or descending) by clicking the control in the grouping area. Within all groups, the member items can be sorted by clicking on any remaining column header.

Task: ***To create groups within groups:***

1. Group the grid items by the first column, as described in the previous section.

2. Drag the next column header into the grouping area, to the right of the first one.

3. Repeat for as many columns as you want to use to create groups.

As you expand and contract groups, items may move to other pages in a multi-page grid, depending on the pagination settings (see Pagination on page 18).

You can change the order of the column names in the grouping area by dragging the labels into your desired order, still keeping them within the grouping area. This changes which group is the parent and which the child (or children).

Task: ***To remove grouping from a grid:***

1. Drag a column label out of the grouping area to the position in the grid header row where you want this column to reappear. Indicator arrows appear to show where the column header will be inserted when you release the mouse button.

2. If you have multiple groups within groups, repeat this action for each column header until all are cleared.

3. Click **Show Grouping** in the **Advanced** menu to remove the grouping area. (Clicking this menu item hides or shows the grouping area above the grid, but on its own does not remove the groups within the grid itself.)

Pagination

Grids are divided into pages. You can navigate between these to see a complete list of items. You can also control how many items appear in each page.

Every row in the grid counts as one item for pagination. A group header counts as one item, as does each member of the group. This means that if you expand and collapse groups within a grid (see Grouping on page 17), the total number of items visible in the grid changes, and a particular item on a grid may be displayed on a different page.

Your preferred number of items per page persists for each grid: that is, each grid independently remembers the setting that you most recently specified.

Task: ***To navigate between pages of a grid:***

1. If necessary, scroll to the bottom of the displayed grid section.

    The pagination control appears at the lower-left corner of the grid. The control displays the current page number and the total number of pages that make up the entire grid as displayed. In brackets, it also displays the total number of items contained in the grid.

2. To move to the previous or next page of the grid, click the appropriate (left or right) arrow in the pagination control.

    Between these arrows there is a set of page numbers within the current grid. If there are many pages, part of this set may be replaced by an ellipsis (three dots). The current page number is set between square brackets.

3. Click any other page number in the set displayed to navigate directly to that page. (There is no direct navigation to pages whose numbers are not displayed.)

Task: ***To change the number of grid items displayed on each page:***

1. At the top of the grid, click **Advanced**.

2. Hover over, or click, **Change Page Size**.

3. In the menu, click the number of items to display on each page.

    Increasing the number of items per page may increase the time to load each page. Remember that you can also use the search facility to reduce the number of items in the grid, which may improve performance.

Filtering

Task: ***To filter a grid:***

1. Make sure the filter bar is displayed at the top and the bottom of the grid. If it is not displayed, open the **Advanced** menu and select **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.

If you set filter values and conditions for multiple columns, they are combined in a logical-AND. This means that grid items will only be displayed when they match all of the conditions and values. However, sometime you need more advanced filtering. 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**.

Task: ***To create an advanced filter:***

1. Do one of the following:

   - Click **Advanced** and select **Show Filter**.

   - Continue on to create the first step of your filter in the usual way (see).

   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**.

2. Click the hyperlinked summary statement.

   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".

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

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.

Option	Description
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.

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.

Turning a Filter Off And On

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.

Task: ***To temporarily disable a filter:***

1. Click the check box to clear it.

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

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

Hiding a Filter's Column

You can create a filter only on the columns that are currently displayed in a grid. However, after the filter is enabled, you can hide the column(s) that control the display, using the **Choose Fields** option in the **Advanced** menu. The filter row at the top of the grid and the filter summary at the bottom of the page both remain visible.

Logging out or clearing **Show Filter** in the **Advanced** menu will clear the filter. To recreate a filter that had a hidden column, you must first add that column back to the grid using the **Choose Fields** command.

Filtering vs. Searching

Filtering a grid is similar to searching. The entire set of data for this grid is filtered. 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.

Searching

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 using the search toolbar at the top of the page (**Search columns...**).

Task: ***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 [icon] to the right of the search field.

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 (see Changing the Columns Displayed in a Grid on page 16). The search is case insensitive.

You can combine searching and filtering, in either order. For more information, see Filtering on page 19.

Task: ***To restore the original grid after a search:***

Click the clear search button [icon] to clear the search field and refresh the data in the grid.

Printing a Grid

Task: ***To print a grid:***

1. Click the **Print** icon in the top-right corner of the page.

2. In the **Print** dialog, select the appropriate printer, and click **Print**.

Exporting a Grid

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.

Task: ***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 is displayed 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.

The Dashboard ("SAP Overview" Page)

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

To read about the features on this page, see:

- Compliance Position on page 24

- Named User Licenses on page 24

- Current vs. Optimal on page 24

- License Utilization on page 24

- License Ratios on page 25

Task: ***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 the http://*Your-portal-server*/SAPOptimization/SAP/SAPHome.aspx page.

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 in breach 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 orders 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 on page 63), 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 on page 25.

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 on page 63).

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 on page 25.

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 on page 69.

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 on page 63).

Changing the Period for the SAP Overview Page

You can change the period covered by the **Named User Licenses** or **License Utilization** graph on the **SAP Overview** page.

Task: ***To change the period for a graph:***

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

   The dialog *gadget name* – **Change period** is displayed.

2. In the **Interval** period, 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 2012`, the first quarter of data shown in the graph would cover the period January-March, 2012.

- **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 2012`, the first year of data shown in the graph would cover the period April 2011 to March 2012.

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

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

5

Using 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. Here you can display and maintain your company'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 Using the System Landscape in the SAP Admin Module on page 74.

Table 5-1 • 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 on page 126. ● Identify potential duplicate users across several systems. See Duplicates Search on page 130. ● Optimize the quality of your user data using the User Data Validation report. See User Data Validation on page 122. ● Import and process recommendations made by FlexNet Manager Suite. See Processing License-Type Recommendations in the SAP Admin Module on page 214.
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 Executing the LAW Measurement on page 278.
Statistics	Current contracts and measurement data can be evaluated using graphics and tables. For more information, see Statistics in the SAP Admin Module on page 282.
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 Performing an SAP Package Analysis on page 267.
Portal	Provides access to user data and statistical data from SAP enterprise portals and from all SAP systems running a Java stack. For more information, see SAP Enterprise Portal Access using the SAP Admin Module on page 287.
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 Running Activity Checks on page 275.
Administration	Enables customization of FlexNet Manager for SAP Applications, such as: ● Manage your license contracts. See Maintaining SAP License Contract Information in the SAP Admin Module on page 87. ● 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 Working with Customer Reports on page 96.

Table 5-1 • Menu items in the Main menu of the SAP Admin module

Menu	Description
Extras	Enables the display of client-specific reports, if applicable.
	For more information, see Working with Customer Reports on page 96.

Changing User Data or License Data

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 IdM, see Using SAP IdM on page 89. For more information on the functionality of the individual buttons, see the corresponding sections below.

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

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. For more information, see Configuring IdM Settings in Customizing on page 91. If IdM is not used, the changes are directly sent to the SAP systems.

Task: **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**.

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

Changing User Data Using the Transaction SU01

Instead of using the procedure described in the section Changing User Data Directly in FlexNet Manager for SAP Applications on page 29, 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. For more information on IdM, see Using SAP IdM on page 89.*

Task: ***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

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. For more information, see Configuring IdM Settings in Customizing on page 91. If IdM is not used, the changes are directly sent to the SAP systems.

Task: ***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 on page 29.

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

Task: ***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**.

7. An entry screen with the corresponding selected fields is displayed. 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**.

💡

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

Changing License Data Using the Transaction SU01

Instead of using the procedure described in the section Changing License Data Directly in FlexNet Manager for SAP Applications on page 31, you can make required changes to the license 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**.

SU01, transaction

Task: ***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 ✏️.

5. Make your changes (refer to the SAP documentation for more information).

Initializing License Data Fields

Task: ***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 on page 31.

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**.

Notes for Modifications of User and License Data

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 master data from within the report screen, you can view a log (SAP transaction SLG1).

Task: ***To view a log of user data modifications:***

1. Perform one or more of the tasks described in the section Changing User Data or License Data on page 29.

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

The report results are displayed 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.

Task: ***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.

6

Initial Setup of FlexNet Manager Suite

Typically, you would set up FlexNet Manager Suite before configuring the SAP Admin module. This chapter describes the different steps that are involved in the process.

Setting up the System Landscape Using the System Landscape Editor

In SAP mode of FlexNet Manager Suite, you use the System Landscape Editor to represent 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 company'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.

In an on-premise implementation, you use the System Landscape Editor to add systems to a landscape and to configure the RFC connection details for all systems. It also enables you to edit existing systems and to remove systems from the landscape.

In a cloud-based implementation, or if you are using inventory beacons in an on-premise implementation, 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. After the import of data from the systems is executed on the inventory beacon, the information for each SAP system is automatically imported from the inventory beacon into the system landscape in FlexNet Manager Suite.

For information about defining an SAP system on an inventory beacon, see Creating Connections on page 52.

Accessing the System Landscape Editor

You access the System Landscape Editor in FlexNet Manager Suite by clicking **SAP** and then **Configuration** in the navigation bar and selecting **System Landscapes**. The **SAP System Landscapes** page is the main page of the editor and contains a list of the system landscapes together with the following data (use the **Advanced** > **Choose Fields** option to display all fields you require):

- **Name**—The name of the system landscape that was provided when the landscape was created.

- **Description**—The description of the system landscape that was provided when the landscape was created.

- **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.

- **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.

You can 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.

Details Section

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

Table 6-1 • Information in the **Details** section of the **System Landscape:** *name* page

Option	Description
Name	The name of the system landscape that was provided when the landscape was created.
Description	The description of the system landscape that was provided when the landscape was created.

Table 6-1 • Information in the **Details** section of the **System Landscape:** *name* page

Option	Description
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.
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 goes in breach)**—Spare superior licenses are not used to cover licenses in breach. Instead, the over-consumed license goes in breach, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types on page 65.
Location	The location to which the landscape is allocated.
Cost Center	The cost center to which the landscape is allocated.
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

The **System Landscape:** *name* page contains the check box **Show outline view of landscape**. This check box enables you 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 details (use the **Advanced** > **Choose Fields** option to display all fields you require).

Table 6-2 • Information in the **SAP Systems** section of the **System Landscape:** *name* page

Column	Description
Server	The name of the SAP server.
System ID	Three-character identifier that identifies the SAP system.
System Number	The system number of the SAP system.
Client ID	The client ID of the SAP system.
System Type	Specifies whether the system is an SAP system or a non-SAP system.
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, offline systems, 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.
Offline System	Indicates whether a system is online or offline. Systems that are not connected to FlexNet Manager for SAP Applications are marked as offline systems.
Parent Group	Indicates 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.)
Group Path	Contains the path of the system within the landscape. (This column is available only in grid view.)
Inventory Date	Indicates the date when the SAP system inventory was collected.
Inventoried By	Shows the server (the application server or inventory beacon) that was used to collect the SAP inventory. If a beacon collected the data, the name of the inventory beacon server is displayed. If a server collected the data, the text `Application server` is displayed.
Active Price List	The active price list is imported from the relevant SAP system (via the USMM transaction).
Database System	Indicates the database technology that the SAP server is using.

Table 6-2 • Information in the **SAP Systems** section of the **System Landscape:** *name* page

Column	Description
Default License Type	Indicates 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.
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.
Last Changed On	The date when the system was last changed. This data is automatically imported when the system is created. For offline systems, this field is blank.
LAW Version	Shows the version of the SAP LAW. This data is automatically imported when the system is created. For offline systems, this field is blank.
Portal System	For SAP enterprise portal systems, the portal port address. This data is automatically imported when the system is created.
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.
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/Eduction ● SAP Reference

Managing Your System Landscape

Managing your system landscape will usually involve the following tasks:

● Editing a system landscape—see Editing a System Landscape on page 40

● Adding a system landscape—see Adding a System Landscape on page 40

● Deleting a system landscape—see Deleting a System Landscape on page 41

● Adding an SAP system—see Adding an SAP System on page 42 (applicable only to on-premise implementations)

- Editing an SAP system—see Editing an SAP System on page 44 (applicable only to on-premise implementations)

- Deleting an SAP system—see Deleting an SAP System on page 45 (applicable only to on-premise implementations)

- Adding an SAP system group—see Adding an SAP System Group on page 48

- Editing an SAP system group—see Editing an SAP System Group on page 48

- Deleting an SAP system group—see Deleting an SAP System Group on page 48

- Handling over-consumption of license types—see Handling Over-Consumption of License Types on page 65.

For information on non-SAP systems, see Managing Evidence Using Non-SAP Systems on page 157.

For information about defining, editing, and deleting SAP systems on an inventory beacon, see Managing Inventory Beacon Connections on page 52.

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*. The following steps explain how to change the details of a system landscape.

Task: ***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**.

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

4. Make your changes. Some fields can be populated by clicking the ellipsis button [...] . This requires that the corresponding values have been added in FlexNet Manager Suite beforehand (using the options under **Management** > **Enterprise**).

5. Click **Save**.

Adding a System Landscape

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 on license-type hierarchies, see Maintaining the License-Type Hierarchy on page 57. For more information on user consolidation, see User Consolidation on page 174.

Task: ***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**.

2. The **SAP System Landscapes** page is displayed. It contains a grid with a list of all existing system landscapes. Click **Add**.

3. On the **Create New System Landscape** page, enter a name, a description (optional), and the status of the new landscape.

   Under **Compliance**, select how over-consumed license types should be handled, and populate the fields under **Ownership**. For information about field values, see Table 6-1 on page 36.

   Some fields can be populated by clicking the ellipsis button [...]. This requires that the corresponding values have been added in FlexNet Manager Suite beforehand (using the options under **Management** > **Enterprise**).

4. Click **Create**.

   The new landscape will be created and the **System Landscape:** *name* page is displayed.

   *Note • 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 in FlexNet Manager Suite on page 97.*

Deleting a System Landscape

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

Task: ***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 System

Note • *The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation. For information on adding an SAP system in a cloud-based implementation, see* Creating Connections *on page 52.*

You can add new systems to the system landscape. These can be SAP systems, non-SAP systems, non-CUA systems, CUA systems, offline systems, or SAP enterprise portal systems.

When you insert an SAP system for the first time, the system data (for example, system type and user master data) is automatically imported.

For information about inserting and operating offline systems, see Working with Offline Systems on page 249.

For information on adding non-SAP systems, see Creating a Non-SAP System on page 160.

Task: **To add 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. 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, under **SAP Systems**, click **Add**.

4. On the **Select system type** dialog, select **SAP** and click **OK**.

5. On the **Create New System** page, provide the system information.

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.
Offline system	Select this check box if the system is an offline system. If this option is selected, all other fields in the **Connectivity** section will be disabled.
Portal system	Select this check box if the system is an SAP enterprise portal system. If this option is selected, all other fields in the **Connectivity** section will be disabled.

Field Name	Description
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. (This field is available only if the **Offline System** check box is cleared.)
System number	The SAP system number. This value will be used by the RFC connection. (This field is available only if the **Offline System** check box is cleared.)
User name	The user name that is to be used when connecting to the SAP system and making RFC calls. (This field is available only if the **Offline System** check box is cleared.)
Password	The password that is to be used when connecting to the SAP system and making RFC calls. (This field is available only if the **Offline System** check box is cleared.) *Important •* On some configurations, a logon error can occur when connecting from an outside application using an RFC connection. 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. (This field is available only if the **Offline System** check box is cleared.)
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.

6. Click **Create** to save the information. The SAP system will be added to the landscape.

Note • It is not possible to configure a destination to an HR system. Use the SAP Admin module to define an HR system for an SAP system. For more information, see *Defining an HR System* on page 85.

Editing an SAP System

Note • *The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation. For information on editing an SAP system in a cloud-based implementation, see* Modifying Connections *on page 52.*

You can change some of the details of existing SAP systems.

Task: **To edit an existing 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 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, 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.
Offline system	Select this check box if the system is an offline system. If this option is selected, all other fields in the **Connectivity** section will be disabled.
Portal system	Select this check box if the system is an SAP enterprise portal system. If this option is selected, all other fields in the **Connectivity** section will be disabled.
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. (This field is available only if the **Offline System** check box is cleared.)
User name	The user name that is to be used when connecting to the SAP system. (This field is available only if the **Offline System** check box is cleared.)
System number	The SAP system number. This value will be used by the RFC connection. (This field is available only if the **Offline System** check box is cleared.)

Field Name	Description
Password	The password that is to be used when connecting to the SAP system. (This field is available only if the **Offline System** check box is cleared.) **Important •** On some configurations, a logon error can occur when connecting from an outside application using an RFC connection. 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. (This field is available only if the **Offline System** check box is cleared.)
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.

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

Deleting an SAP System

Note • The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation. For information on editing an SAP system in a cloud-based implementation, see

You can delete an SAP system from a landscape.

Task: ***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 shows the user data, roles, and consumption data of its users. The users list 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).

Table 6-3 • Information on the users list of an SAP system

Column Name	Description
User Name	The user ID of the system user.
First Name	The first name of the system user.
Last Name	The last name of the system user.
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	**Yes** indicates that the user currently has a developer license.
Created On	The user's creation date.

Table 6-3 • Information on the users list of an SAP system

Column Name	Description
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.
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.
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 are able to 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.

Task: **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

You can change some of the details of an SAP system group.

Task: **To edit an SAP system group:**

1.   Perform steps 1 to 3 as described under

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

You can delete a system group from a landscape.

Note • *Deleting a system group will also delete all the groups and systems it contains.*

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Task: ***To delete a 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 or 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

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Note • *The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation.*

FlexNet Manager for SAP Applications automatically imports inventory data from SAP systems and generates a new optimal license position on a regular basis. 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).

Inventory Beacons

You can collect user data and package measurement results from SAP systems using an inventory beacon. Inventory beacons are small-footprint components that are installed throughout the company network to enable the dynamic collection of inventory data.

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Important • *If you are using a cloud-based implementation of FlexNet Manager Suite, inventory beacons* must *be installed to collect SAP data.*

If you are using FlexNet Manager Suite in an on-premise 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 on page 49.

This section provides a short introduction to inventory beacons for their usage in an SAP context. For detailed information on inventory beacons, including installation and configuration, see the topic *What Is an Inventory Beacon* and its subtopics in the FlexNet Manager Suite online help.

Concept

Inventory beacons act like relay stations. They collect inventory data from 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 install the software FlexNet Beacon on the server that gathers inventory information. For more information, see *Installing an Inventory Beacon* in the FlexNet Manager Suite online help.

2. You register the inventory beacon to enable it to communicate with FlexNet Manager Suite. Refer to the topic *Register an Inventory Beacon* in the FlexNet Manager Suite online help for detailed information.

3. On the inventory beacon, you create a connection to an 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 topic *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 systems.

5. 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 ID><SAP Client ID>*]_*<Inventory Timestamp>*.zip.

6. (Step only visible in on-premise implementations) 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**.

7. (Step only visible in on-premise implementations) 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.

8. After the analysis and optimization of the license data, you release license recommendations to the SAP Admin module. These recommendations are automatically uploaded from FlexNet Manager Suite to the inventory beacon. The SAP Admin module connects to the inventory beacon via a web service to retrieve the recommendations. You can then process the recommendations on the SAP Admin module (that is, change user and/or license data as required and update the user master 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 Tables Read and Data Collected by the SAP Inventory Agent on page 313.

For detailed information about the scheduled tasks, see Scheduled Tasks on page 308.

Important • Package-measurement data can be collected only after a package measurement has been executed on that SAP system. For more information, see Executing Package Measurements on Offline Systems on page 263.

Registering an Inventory Beacon

You need to register the inventory beacon to enable it to communicate with **FlexNet Manager Suite**. Refer to the topic *Register an Inventory Beacon* in the FlexNet Manager Suite online help for detailed information.

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, as follows.

Task: ***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 **Use Basic Authentication** and enter a user name and password.

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 the topic *Local Web Server Page* in the FlexNet Manager Suite online help.

Managing Inventory Beacon Connections

You define connections to SAP systems directly on the inventory beacon, so that connection details are not transmitted across the network.

Creating Connections

Before the SAP Inventory Agent can collect data using 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.

Task: ***To create a new SAP system connection:***

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

2. Select the **SAP Systems** tab.

3. Click **New**.

4. In the **SAP Connection** dialog, select the system landscape and enter the properties for the connection to the SAP system: server name, system ID, client ID, system number, user name, and password.

5. Click **Test Connection** to test whether a connection could be established.

6. Click **OK**.

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

The SAP system connections are saved in `%ALLUSERSPROFILE%\Application Data\Flexera Software\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 Connections

Any modifications that you make to an SAP system connection on an inventory beacon are automatically sent to FlexNet Manager Suite, where the corresponding SAP system details are modified accordingly.

Task: ***To modify an existing SAP system connection:***

1. In the user interface of the **FlexNet Beacon** software, select the **SAP Systems** tab.

2. Select the connection you would like to modify from the list.

3. Click **Edit**.

4. Modify any properties of the SAP system connection that need to be changed.

5. Click **Test Connection** to test whether a connection could be established.

6. Click **OK**.

Deleting Connections

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 section Deleting an SAP System on page 45.

Task: ***To delete an existing SAP system connection:***

1. In the user interface of the **FlexNet Beacon** software, select the **SAP Systems** tab.

2. Select the connection you would like to delete in the list.

3. Click **Delete**.

A warning message is displayed.

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

Executing Connections

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

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

In the FlexNet Beacon interface, under **SAP systems**, select the connection that you want to execute, and click **Execute Now**.

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 correct 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 and the status indicator for system tasks in the navigation bar, you must have appropriate access rights. For more information, see Accessing System Task Information on page 57.

The information in this section describes only the monitoring of the SAP-related task **SAP import** and its steps. For information on other tasks, see the FlexNet Manager Suite online help.

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 in cloud-based implementations, or if beacons are used in on-premise implementations)

- Upload of inventory data to the FlexNet Manager Suite application server

- Import of inventory data into the FlexNet Manager Suite application server

The 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 selected on the **My Preferences** page under **Task monitoring**. For more information on selecting the tasks that should be monitored, see Selecting the Monitored Tasks on page 55.

The status indicator for system tasks is displayed only if you have appropriate access rights. For more information, see Accessing System Task Information on page 57.

The indicator shows the following status:

- Animated—Tasks are running.

- Red—One or more tasks have failed.

- Orange—Tasks completed, but errors have occurred. 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**.

Task: ***To select the tasks that should be monitored:***

1. In the settings bar of FlexNet Manager Suite, navigate to *your account name* and click **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

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** page, you need appropriate access rights. For more information, see Accessing System Task Information on page 57.

Task: ***To display the system tasks, do one of the following:***

●   In FlexNet Manager Suite, at the right of the modal navigation bar, click the status indicator for system tasks.

●   In FlexNet Manager Suite, open the system settings menu, 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 on page 57.

For the task **SAP import**, the following information is available on the **System Tasks** page.

For information on filtering, searching within, or modifying the display of the results, see the relevant section under
Using Grids on page 15.

Table 6-4 • Information in the **System Tasks** grid

Option	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*.
Task type	The type of the task that is monitored. For SAP data, the task type is **SAP import**.
Start date	The date and time when the task or task step started.
End date	The date and time when the task or task step ended.
Status	The outcome of the task or task step.
Summary	A short description of the outcome of the task or task step.
Logs	For tasks of the type **SAP import**, a text file with detailed information is available for the steps "Gathering inventory data" and "Importing into application server". Click **Download log** to download it.
	Use the log file to find out which SAP tables have been read and if the action was successful.

Filtering for SAP-Related System Tasks

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 the **System Tasks** page, you need appropriate access rights. For more information, see Accessing System Task Information on page 57.

Task: ***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, open the system settings menu, 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 dropdown list, select **Task type**.

e. In the last dropdown 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 is displayed only for users with appropriate account properties. You define these account properties on the **Account Properties** page.

Task: ***To configure access to system task information:***

1. In the settings bar of FlexNet Manager Suite, open the system settings menu, and click **Accounts**.

2. On the **All Accounts** tab, click the name of the account for which you want to configure access rights.

3. Click **Administration**.

4. Do the following:

   - Select **Troubleshooting: access to System Tasks page** to enable access to the **System Tasks** page. If this check box is cleared, the status indicator for system tasks in the navigation bar and the **System Tasks** page are 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**.

Maintaining the 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. When you set up FlexNet Manager for SAP Applications for the first time, you can import the relevant license-type hierarchy from any SAP system—typically from the SAP system on which the LAW is run. You should ensure that the license data is maintained accurately in the LAW.
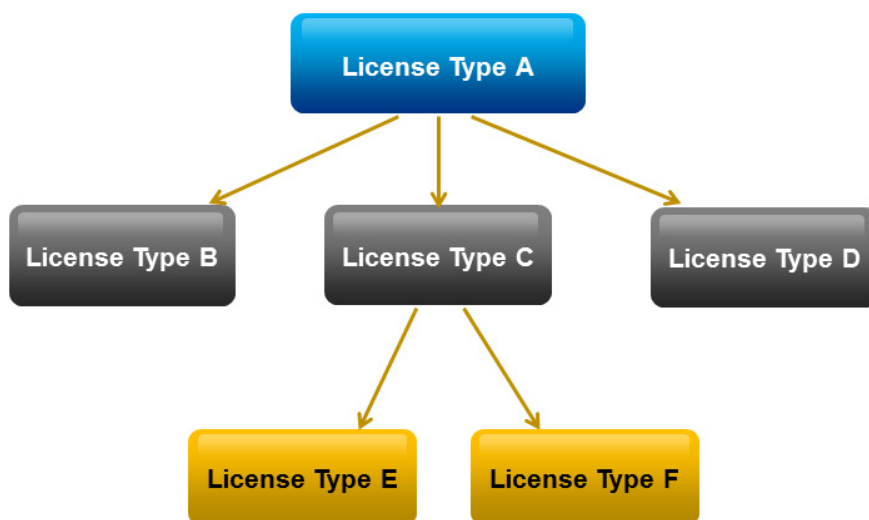
Figure 6-1: Example of a well-formed license-type hierarchy.

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.
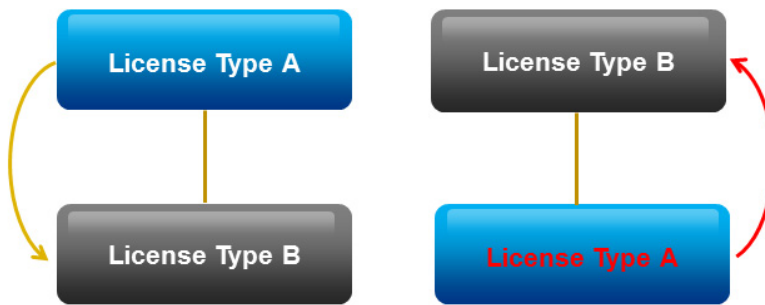
Figure 6-2: Example for a cycle in the license-type hierarchy. To remove the cycle, the sub-license type A (red) needs to be removed from license type B.

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

Unit Price per License Type

As an additional feature, the license-type hierarchy enables you to 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. For more information, see The Dashboard ("SAP Overview" Page) on page 23 and SAP License Position on page 104.

Importing License Hierarchy Information from the LAW

Task: ***To import data from the LAW:***

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.

Viewing the License-Type Hierarchy

After you imported the license-type hierarchy from an SAP system, you can view its details and edit it, if necessary. The **License Types:** *system landscape name* page contains the following information:

- 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 a grid with the following information:

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.
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/breach**—Spare superior licenses are not used to cover licenses in breach. Instead, the over-consumed license goes into breach, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types on page 65.
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.

You can double-click a license type in the grid to see its license sub-types. For more information, see Drilling into the License-Type Hierarchy on page 61.

📝

Task: ***To view 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.

For information on how to edit the license type information, see Adding License Types to the Hierarchy on page 62.

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.

📝

Task: ***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.

4. The **License Type:** *name* page displays the following information:

    -   **Details** section

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	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.

Option	Description
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 goes in breach)**—Spare superior licenses are not used to cover licenses in breach. Instead, the over-consumed license goes into breach, and the resulting license deficit can be viewed on the **License Position** page. For more information, see Handling Over-Consumption of License Types on page 65.
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.

Adding License Types to the Hierarchy

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

Task: ***To add a license type 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.

Task: ***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.

Editing License Types in the License-Type Hierarchy

You might want to edit the license-type hierarchy you imported. For example, you could add unit price information for license types to enable the visual presentation of SAP license utilization in the dashboard. For more information on the dashboard, see The Dashboard ("SAP Overview" Page) on page 23.

Task: ***To edit the license-type hierarchy:***

Perform the steps described under Drilling into the License-Type Hierarchy on page 61.

The **License Type:** *name* page presents the following options:

- Edit the information in the **Details** section:

  a. Click **Edit** to open the page in write-enabled mode.

  b. You can edit the following fields.

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	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.
	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 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 goes in breach)**—Spare superior licenses are not used to cover licenses in breach. Instead, the over-consumed license goes into breach, and the resulting license deficit can be viewed on the **License Position** page.
	For more information, see Handling Over-Consumption of License Types on page 65.

  c. Click **Save**.

- 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). Select or deselect the **Active** check box to indicate that you are entitled to use the license type.

    c. Click **Create**.

- 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. You can either let these licenses go into breach, 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 in breach 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 going in breach. 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 on page 67 and Handling of Over-Consumption of Specific License Types on page 68, 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 in breach.

- No license ratio is active. (For more information on license ratios, see Managing SAP License Ratios on page 69.)

Table 6-5 • Example 1: Spare licenses are available

License Type	Purchased	Consumed (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 in breach.

- No license ratio is active. (For more information on license ratios, see Managing SAP License Ratios on page 69.)

Table 6-6 • Example 2: No spare licenses available

License Type	Purchased	Consumed (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.

Table 6-7 • Calculation of best possible scenario within contractual obligations for example 2

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.

Task: ***To specify how the over-consumption of license types should be handled on a landscape-wide basis:***

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 goes in breach)** if spare superior licenses should not be used to cover licenses in breach.

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 the following section, Handling of Over-Consumption of Specific License Types on page 68.

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 goes in breach)** 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 goes in breach)** 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 licenses in breach on a landscape-wide level.

Task: ***To specify how the over-consumption of specific license types should be handled:***

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 goes in breach)** if spare superior licenses should not be used to cover licenses in breach.

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 Maintaining the License-Type Hierarchy on page 57.

Managing SAP License Ratios

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 on page 104 and License Ratios on page 25, respectively.

License Ratio Examples

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.

- **Consumed (Current)**—Shows the number of licenses of each type that are currently assigned to users.

- **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 on page 65.

    *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) go into breach.

Table 6-8 • Example 1: License ratio inactive

License Type	Purchased	Consumed (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) going into breach.

Table 6-9 • Example 2: Active license ratio of 25% to 75%, spare licenses available

License Type	Purchased	Consumed (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) going into breach.

Table 6-10 • Example 3: Active license ratio of 25% to 75%, not enough spare licenses available

License Type	Purchased	Consumed (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.

Table 6-11 • Calculation of best possible scenario within contractual obligations for example 3

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

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

When you specify the license ratio, you also need to enter the number of licenses that have been purchased, to enable FlexNet Manager for SAP Applications 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.

Task: **To specify the license ratio:**

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 you when you are modeling 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.*

7

Setting up the SAP Admin Module

You must set up the SAP Admin module in order to use SAP-related features, including recommendations processing, Package measurement, activity checks, and LAW measurements. This chapter describes the following tasks:

- Using the System Landscape in the SAP Admin Module

- Setting up Dialog RFC Destinations in the SAP Admin Module

- Maintaining SAP License Contract Information in the SAP Admin Module

Using the System Landscape in the SAP Admin Module

After you install FlexNet Manager for SAP Applications, your first task will be to import a system landscape from FlexNet Manager Suite into the SAP Admin module. A system landscape represents your SAP systems according to your company's individual requirements. For information on how to set up a system landscape in FlexNet Manager Suite, see Setting up the System Landscape Using the System Landscape Editor on page 35.

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.

The icon to the left of a system name indicates the system type, as described in the following table.

Table 7-1 • System type icons

Icon	Description
	Virtual root of the system landscape

Table 7-1 • System type icons

Icon	Description
	System group
	Active system
	System with an incorrect RFC destination
	System without RFC destination
	SAP enterprise portal system

The string to the right of the icon is made up of the system ID and the client number.

The system landscape list view—the table on the right side of the screen—provides more detailed information about each system or system group.

The status of a system is displayed in the table in the **System Status** column; the **Offline System** column indicates whether a system is offline (that is, it has no RFC destination assigned). For more information on offline systems, see chapter Working with Offline Systems on page 249.

The following table lists the main information that is available on the system landscape in the SAP Admin module.

Table 7-2 • Information provided 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 Software 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. For offline systems, this field is blank.

Table 7-2 • Information provided in the system landscape list view

Column	Description
Dialog RFC Destination for Updates	RFC destination that forces a user to log on to the system before making any changes. You can set the dialog RFC destination in the **Administration** menu under **Set up Dialog RFC Destinations**.
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 on page 83. 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 on page 83.
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 on page 83.
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.
System Status	Indicates whether the system is active (A), inactive (I), excluded (E) or offline (O).
Java System	Shows whether a system is an ABAP stack or Java stack. This data is automatically imported when the system is created.
Portal IP	If the system is an SAP enterprise portal system, you can enter its IP address here. This field is only editable for SAP enterprise portal systems.
Portal Port	If the system is an SAP enterprise portal system, you can enter its portal port address here. This field is only editable for SAP enterprise portal systems.
RFC Central Monitoring	If the system is an SAP enterprise portal system, you can enter the RFC destination to the SAP system that is associated with the enterprise portal system here. This field is only editable for SAP enterprise portal systems.

Importing a System Landscape from FlexNet Manager Suite

You need administrator rights 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.

Task: **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**.

    A 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 Table 7-3 on page 77.

4. Verify the system information.

5. Add any missing RFC destinations by following the procedure To add an RFC destination: on page 80.

6. Click **Save RFC Destinations**.

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.

Information in the Maintain RFC Assignments Grid

Table 7-3 • 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 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.

Table 7-3 • SAP system information in the Maintain RFC Assignments grid

Column	Description
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 must have been defined. *Important •* If no RFC destination is provided for a system, the system is treated as an offline system and any 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 informs about the possible cause.
Dialog RFC Destination for Updates	RFC destination that forces a user to log on 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.
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 on page 83. 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 on page 83.
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 on page 83.

Table 7-3 • SAP system information in the Maintain RFC Assignments grid

Column	Description
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.
FNMS User	The user who is used for the communication between FlexNet Manager Suite and the SAP satellite system.
HR System	If you set an HR system, the HR system's RFC destination is displayed here.
Java System	Shows whether a system is an ABAP stack or Java stack. This data is automatically imported when the system is created.
Portal IP	If the system is an SAP enterprise portal system, you can enter its IP address here. This field is only editable for SAP enterprise portal systems.
Portal Port	If the system is an SAP enterprise portal system, you can enter its portal port address here. This field is only editable for SAP enterprise portal systems.
RFC Central Monitoring	If the system is an SAP enterprise portal system, you can enter the RFC destination to the SAP system that is associated with the enterprise portal system here. This field is only editable for SAP enterprise portal systems.
FNM Release	Shows the FlexNet Manager for SAP Applications release that is currently installed. This data is automatically imported when the system is created.

You can manually create an RFC destination for systems that cannot use an existing RFC destination. You can do this directly in SAP using the transaction SM59. FlexNet Manager for SAP Applications offers a shortcut to this transaction—the button **Create RFC Destination** is located directly above the grid that is displayed when you first import a system landscape from FlexNet Manager Suite. After you have created the RFC destinations, you can associate them with systems in FlexNet Manager Suite. For more information on maintaining RFC destinations, see Maintaining RFC Destinations and System Information on page 81.

If you need to make any changes, follow the procedures described under Maintaining RFC Destinations and System Information on page 81. You can also make changes at a later stage.

Adding RFC Destinations

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 (such as, for example, server, system number, and client), which speeds up the creation of RFC destinations.

For information on the **Maintain RFC Assignments** grid, see Table 7-3 on page 77.

Task: ***To add an RFC destination:***

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:

    *   The RFC connection must be of type 3.

    *   The connection must be client-specific. Therefore, you need to specify the target client and the RFC user in the parameter block **Login**.

    *   The recommended type for the RFC user is **Communication**.

    *   The RFC user must exist in the target client on the satellite system.

    *   The RFC user must have the user role /LICMAN/SATELLITE.

    For more information on the properties in this screen, refer to the SAP documentation.

    For more information on the Central User Administration, see Central User Administration on page 83.

6. 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 of 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 on page 82.

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.

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

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

Resetting a System Landscape in the SAP Admin Module

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

In extraordinary cases, you might need to reset 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).

Task: ***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. This will now display the **Import System Landscape** button. To import a system landscape from FlexNet Manager Suite, follow the steps described in section .

Maintaining RFC Destinations and System Information

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 master records in the SAP systems. Systems without RFC destination are treated as offline systems.

In the system landscape, systems with missing RFC destinations have a red icon next to them.

You maintain RFC destination details using the **Maintain RFC Assignments** command. This opens the **Maintain RFC Assignments** grid, which offers the following possibilities:

- Get an overview of all systems and their RFC destinations, as well as additional system information.

- See the status of all RFC destinations and information as to why an RFC destination is not working properly, if applicable

- See the user names that are used to connect to the systems

- Add or modify RFC destination details

- Test all RFC destinations in one step.

For information on the **Maintain RFC Assignments** grid, see Table 7-3 on page 77.

You need administrator rights to add, change, or delete RFC destinations in the SAP Admin module.

Modifying RFC Destination Details

Sometimes you might need to modify RFC destination details for systems, for example when the password for the RFC user was changed in one of the satellite systems. In this case, the **RFC Status** column in the **Maintain RFC Assignments** grid flags the RFC destination that is not working properly so that you can correct the issue.

Task: ***To modify RFC destination details:***

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 of 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 on page 82.

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 ensure that the RFC destinations are working properly, and to correct those that don't. FlexNet Manager for SAP Applications shows a color-coded status for every RFC destination along with a possible error cause for incorrect RFC destinations.

Task: ***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.

Central User Administration

The Central User Administration (CUA) enables you to maintain the user master records centrally in one SAP system. This system is usually referred to as the *CUA central system*. Any changes that are made to the user master records on the CUA central system are automatically distributed to the connected satellite systems.
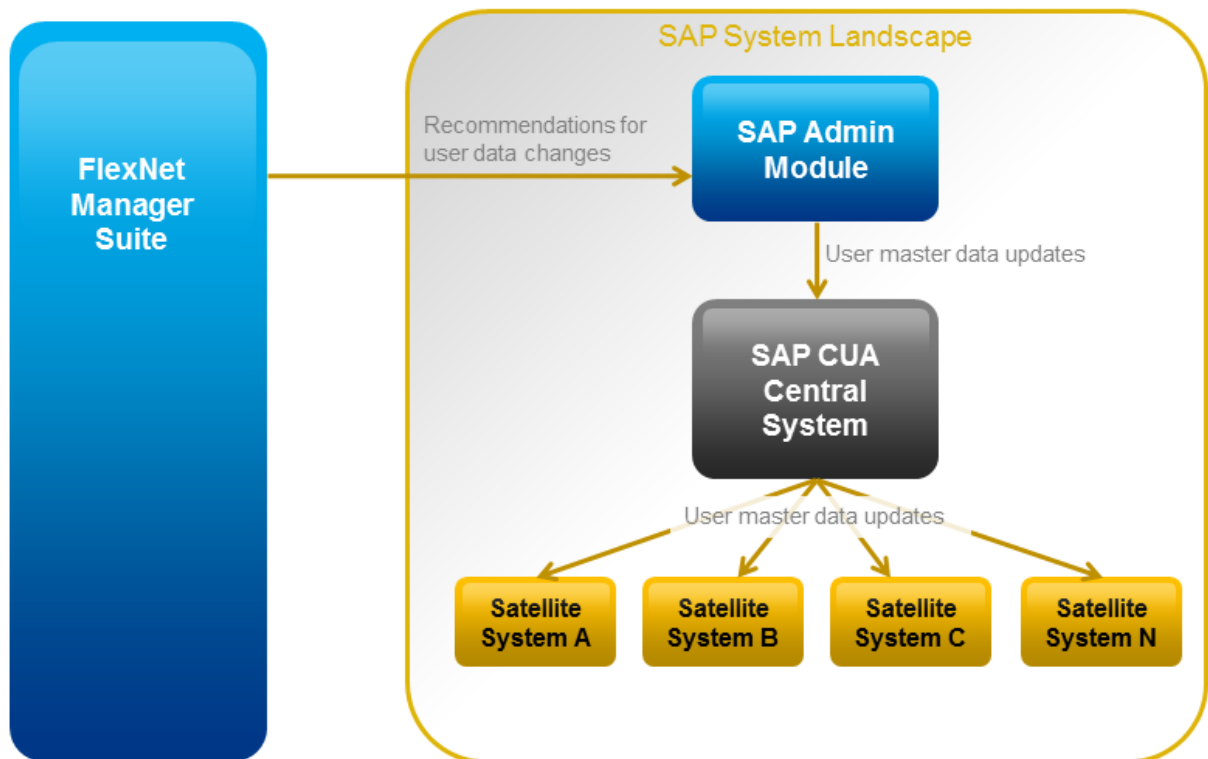
Figure 7-1: Data flow from FlexNet Manager Suite to the SAP systems when using CUA

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 master 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 satellite systems (based on the configurations found on the CUA central system).

As a prerequisite, 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.

Specifying the CUA Central System

If your SAP systems are controlled by CUA, you need to manually specify the CUA central system.

Task: **_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**.

After you have specified the CUA central system, the **Maintain RFC Assignments** 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 Table 7-3, SAP system information in the Maintain RFC Assignments grid, on page 77.

Clearing the CUA Settings

Task: **_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**.

Defining an HR System

For every system connected to FlexNet Manager for SAP Applications via the SAP Admin module, you can define an HR system. The information from this HR system can be used to provide additional information in the Logon Evaluation report (see Logon Evaluation Report on page 126).

It is also possible to set the HR system globally in the **Customizing** screen (see Administrative Information and Technical Settings on page 89). The HR system is then valid for all systems, except for those systems or system groups that have an individual setting.

This feature is available only for systems with a valid RFC destination.

Task: *To set an HR 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 is displayed in the **HR System** column of the system landscape list view.

You can set the HR system in the same way for an entire system group. It is then valid for all systems in the group, except where an HR system has been set explicitly for a single system.

Task: *To remove an HR 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, leave the RFC destination blank and click **Continue**.

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

Setting up Dialog RFC Destinations in the SAP Admin Module

FlexNet Manager for SAP Applications can automatically create or delete logical RFC destinations. They 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 master 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 respective satellite system, ensuring that all changes are recorded for this respective user in the change history.

Task: ***To set up a Dialog RFC destination in the SAP Admin module, perform one of the following procedures:***

- In the Main menu of the SAP Admin module, click **Administration** and select **Set up Dialog RFC Destinations**. Follow steps 1 through 5 described below.

- Alternatively, right-click the system in the system landscape whose Dialog RFC destination you want to set up. Click **Dialog RFC Destinations** and select **Wizard**.

  1. In the **Set up Dialog RFC Destinations** screen, select the systems for which you want to set up Dialog RFC destinations.

  2. Under **Action**, select **Create**.

  3. Under **Create Options**, in the **Description** field, type a description for the connections to be created (default: **DLC GENERATED**). In the **Suffix for Dialog RFC Dest.** field, type a suffix that should be appended to the destination.

  4. If you want to use a specific layout, enter the name of the saved layout in the **Layout** field.

  5. Click **Execute** or press **F8**.

  OR

- In the system landscape of the SAP Admin module, right-click the system whose Dialog RFC destination you want to set up. Click **Dialog RFC Destinations** and select **Manually**.

  1. 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.

  2. Click **Continue** or press **Enter**.

Task: ***To delete a Dialog RFC destination in the SAP Admin module, perform one of the following procedures:***

- In the Main menu of the SAP Admin module, click **Administration** and select **Set up Dialog RFC Destinations**. Follow steps 1 through 3 described below.

- Alternatively, right-click the system in the system landscape whose Dialog RFC destination you want to delete. Click **Dialog RFC Destinations** and select **Wizard**.

  1. In the screen **Set up Dialog RFC Destination**, select the systems whose Dialog RFC destination you want to delete.

  2. Under **Action**, select **Delete**.

  3. Click **Execute** or press **F8**.

Providing Details for SAP Enterprise Portal Systems or Java Systems

Task: ***To provide details for an SAP enterprise portal system or Java system:***

1. Open the SAP Admin module.

2. In the system landscape, right-click the SAP enterprise portal system or Java system, and click **System Details**.

3. In the **Flexera Software FlexNet Manager for SAP Applications** dialog, under **Portal Details**, provide the following information:

   - **Portal Server IP**—Enter the IP address of the SAP enterprise portal server or Java system.

   - **Portal Port**—Enter the port number of the SAP enterprise portal server or Java system.

   - **Central CCMS Monitoring RFC**—Enter the RFC destination of the Central CCMS Monitoring system. Ensure that the RFC destination exists and that the corresponding RFC user has the role /LICMAN/ SATELLITE.

     This RFC destination is used to retrieve data from an SAP system (as opposed to the SAP enterprise portal), which stores statistical information about the SAP enterprise portal.

4. Click **Continue**.

Maintaining SAP License Contract Information in the SAP Admin Module

FlexNet Manager for SAP Applications enables you to 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 chapter Statistics in the SAP Admin Module on page 282. For information about executing LAW measurements, see chapter Executing the LAW Measurement on page 278.

Data about packages is not maintained together with the SAP license contract information because packages are charged based on usage.

Task: ***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 is displayed 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.

Task: ***To view the created data, do one of the following:***

- In the SAP Admin module, 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.

- In the SAP Admin module, 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**.

Task: ***To modify the created 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.

5. Click **Save**.

Task: ***To delete the created 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 🗑 .

Administrative Information and Technical Settings

Under **Administrative Information** (available when you open the **Customizing** menu in the SAP Admin module), you can identify the person who created or last modified a customization setting.

In the **Technical Settings** section, under **RFC Destination of HR System**, you can globally define the RFC destination of the HR system that is used in the extended Logon Evaluation report (see also Defining an HR System on page 85). You can override the global setting by providing an individual setting for each system.

Using SAP IdM

SAP NetWeaver® Identity Management (IdM) is an SAP technology for centrally managing SAP user accounts across multiple SAP software environments.

With IdM, organizations can:

● Centrally create, maintain, and delete user accounts

● Centrally manage global user account attributes (for example, first and last name)

● Centrally manage privileges (technical roles) and business roles

● Synchronize data across several systems

IdM automatically consolidates the data held in user accounts that belong to the same user. The consolidation is usually based on the user name. This means that any user data that is changed in one account of a user will be propagated into all other accounts that this user holds.

By connecting the SAP Admin module (and, via the SAP Admin module, FlexNet Manager Suite) to IdM, you can ensure that changes made to user accounts using FlexNet Manager for SAP Applications are not subsequently overwritten by IdM. In the SAP Admin module, you can configure which changes (made, for example, through the Logon Evaluation report, the Duplicates Search report, or the Process Recommendations report) are sent to IdM and which changes are sent directly to the SAP systems. For more information, see Configuring IdM Settings in Customizing on page 91.

Important • *User license types and Valid To dates must be managed using FlexNet Manager for SAP Applications, and not through IdM. This ensures that the license type and Valid To date are managed individually for each account that a user holds.*

For more information about IdM, refer to the relevant SAP documentation.

SAP Admin Module and IdM – Architecture

The SAP Admin module can be connected to IdM through Virtual Directory Server (VDS). After VDS has been correctly configured, the SAP Admin module can send requests (using the LDAP protocol) to change specific user data to IdM. Depending on its configuration, IdM then sends changes to the SAP target systems.

VDS is used in the context of IdM to provide connectors to various SAP and non-SAP systems. VDS also functions as an entry point to the IdM database (the Identity Center [IC]). The SAP Admin module accesses the IdM database via an LDAP connector. LDAP requests from the SAP Admin module are transformed and a connection to the IdM database is made.

The LDAP requests are executed centrally within IdM according to its configuration. This means, that the settings that are configured in IdM take priority over those configured in the SAP Admin module. After the SAP Admin module has sent a request to IdM, the IdM database is updated with the new values, and the IdM configuration determines, for example, which changes to user details are propagated into which SAP systems.

Connecting the SAP Admin Module to VDS

To connect the SAP Admin module to VDS, perform the procedure described below. For detailed information on the individual steps, refer to the SAP NetWeaver® Enterprise Search product information that is available online.

The LDAP server that is configured in the steps described below needs to be running (in transaction LDAP) when you are using any functionality in the SAP Admin module that sends data to IdM.

Task: ***To connect the SAP Admin module to VDS:***

1. Configure the LDAP connector.

   a. Using transaction SM59, create a new RFC connection of type *T* (TCP/IP).

   b. Use the transaction LDAP to customize the connection to the LDAP directory (VDS).

   For more information on this step, in the SAP NetWeaver® Enterprise Search product information, click Appendix and select the help topic Configuring the LDAP Connector.

2. Define the credentials for the system user that the SAP system uses to log on to the directory server.

   For more information on this step, in the SAP NetWeaver® Enterprise Search product information, click Appendix and select the help topic Defining the System User of the Directory Service.

3. Configure the connection data for the directory service.

For more information on this step, in the SAP NetWeaver® Enterprise Search product information, click Appendix and select the help topic Configuring Connection Data for the Directory Service.

Configuring IdM Settings in Customizing

To enable the interaction between the SAP Admin module and the IdM system, you need to configure the IdM settings and provide connection details (such as the name of the LDAP server). In the **Customizing** section, you can configure the IdM settings for all systems in the SAP Admin module. For information on the IdM settings that are configurable for individual SAP systems, see Configuring IdM Settings for Individual Systems on page 92.

As a prerequisite, VDS must have been set up correctly. For more information, see Connecting the SAP Admin Module to VDS on page 90.

Task: ***To configure the IdM settings in Customizing:***

1. Open the SAP Admin module.

2. Click the **Administration** menu, select **Customizing**, and click **IDM Settings**.

3. On the **Customizing** page, provide the following information:

   - **LDAP Server**—Enter the name of the LDAP server that is configured in SAP.

     Example: `VDS_SERVER`.

   - **LDAP Distinguished Name**—Enter the string that is used by the LDAP function to identify the correct entry point in the LDAP directory of VDS. You must specify '`cn=*`' in this string. The entry point depends on the system that should be accessed.

     Example: `CN=*,O=USERS,OU=ORG_UNIT,O=ORG`.

   - **Values updated through IDM**—Select the check boxes to indicate which of the user details should be managed through IdM, that is, the values of the fields you select here are sent to IdM. The selected fields should match those of the IdM configuration.

     The following fields are available:

     - First Name

     - Last Name

     - User Group

     - User Type

     - Email

     - Phone

     - Accounting Number

     - Cost Centre

     Cleared check boxes indicate those fields whose values are to be sent directly to the SAP systems.

> **Important •** *To ensure that license-type recommendations and recommendations for retiring users are not overwritten by IdM, license types and Valid To dates must be managed through FlexNet Manager for SAP Applications.*

4.   Click **Continue**.

Task: **To delete global IdM settings:**

1.   Open the SAP Admin module.

2.   Click the **Administration** menu, select **Customizing**, and click **IDM Settings**.

3.   On the **Customizing** page, click **Delete IDM Settings**.

4.   Click **Yes** to confirm.

Configuring IdM Settings for Individual Systems

You can indicate for each system whether or not the system is managed by IdM.

As a prerequisite, you must have configured global IdM settings in the Customizing section (see Configuring IdM Settings in Customizing on page 91), otherwise, the IdM settings will not be displayed in the system details. In addition, VDS must have been set up correctly (see Connecting the SAP Admin Module to VDS on page 90).

Task: **To indicate that a system is managed by IdM:**

1.   Open the SAP Admin module.

2.   In the system landscape, right-click the system name that you want to configure and select **System Details**.

3.   In the **FlexNet Manager for SAP Applications** dialog, provide the following information:

  a.   Select the **IDM Controlled** check box to indicate that the system is managed by IdM. The **IDM Account Field** box and the **Update data also directly to SAP systems** check box become available.

  b.   In the **IDM Account Field** box, type the name of the field in the IdM database that holds the user name of the target SAP system.

  The SAP Admin module identifies users based on their SAP user names. The value in the **IDM Account Field** box enables the SAP Admin module to identify the IdM IDs of the users whose user data should be changed.

  If you leave this field blank, the SAP Admin module will use the SAP user name as an ID in IdM.

  c.   Select the **Update data also directly to SAP systems** check box if changes should be sent directly to the SAP target systems (in addition to the IdM database). This check box acts as a safety mechanism.

4.   Click **Continue**.

Duplicates Rules Editor

FlexNet Manager for SAP Applications provides support to identify potential duplicate users (users with non-identical user IDs) across several systems. To identify duplicate users, you can use predefined default rules; or you can configure custom rules to meet your enterprise's requirements. You define and activate rules in the Duplicates Rules Editor, which is available from the **Administration** menu. After you have activated and/or defined duplicates rules, you can select the rule in the Duplicates Search report from the **Reporting** menu. For more information about the options in the Duplicates Search report, see Duplicates Search on page 130.

Default Duplicates Rules

FlexNet Manager for SAP Applications contains the following predefined duplicates rules:

- **Search for Similar User IDs**: This rule finds users whose user IDs differ by only one or two characters, for example *JSmith* and *SmithJ*. This rule is not case sensitive, and only non-initial values are compared.

- **Matching by Email Address**: This rule analyzes the user master data to find user records with the same email address. This rule is not case sensitive, and only non-initial values are compared.

- **Matching by First and Second Name**: This rule analyzes the user master data to find user records with the same first and second name. Example: A user called *John Smith* has two separate user accounts with the user IDs *JSmith* and *SmithJ*, but in his user master records, his first and last name are properly maintained. Therefore, the rule **Matching by First and Second Name** would flag this user as a potential duplicate. This rule is not case sensitive, and only non-initial values are compared.

You can add these predefined duplicates rules and edit them. It is not possible to add individual predefined duplicates rules.

Task: ***To add the default duplicates rules:***

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Duplicates Rules Editor** from the menu.

2. To add the default duplicates rules, click the **Create Default Duplicates Rule** button . The three default rules are added to the list of duplicates rules.

3. If the default duplicates rules are already in the list of duplicates rules, you will be asked whether you want to replace them.

Creating New Duplicates Rules

If you want to create your own duplicates rules, you can do so using the options provided in the **Rule Details** dialog in the Duplicates Rules Editor. Here you can create and link logical expressions.

Task: ***To create a duplicates rule:***

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Duplicates Rules Editor** from the menu.

2. Click the **Create New Duplicates Rule** button to create a new rule.

3. In the **Rule Name** field, enter a meaningful name for your rule. This name will be displayed in the Duplicates Search report where you select a rule.

4. Click the **Append New Row** button to open the **Rule Details** dialog where you can define your logical expression using the options explained in The Rule Details Dialog on page 94. Confirm your configuration with **Accept** or click **Cancel Editing** to discard your changes. The **Append New Row** button always adds a new row to the bottom of the list.

5. To insert a new row above the row that is currently selected, click the **Insert Row** button. This will also open the **Rule Details** dialog.

6. To display details for a specific row, select the row and click the **Details** button. Alternatively, you can double-click the row to open the **Rule Details** dialog.

7. You can copy and paste a row by selecting it and clicking the **Copy** and **Paste** buttons.

8. To move a row to a different location within the rule, cut it by clicking the **Cut** button and paste it to the desired location.

9. To delete a row, select it and click the **Delete** button.

10. When you finish configuring your rule, you can click the **Consistency Check** button to verify whether the rule syntax is consistent. In case of errors, a message to the right of the row provides details to enable you to fix the problem.

11. Click the **Activate Duplicates Rule** button to activate the rule. Only active rules can be selected in the Duplicates Search report.

12. Click **Save** to save the new rule.

*Note • Editing an existing rule deactivates it. After making your changes, you need to click the **Activate Duplicates Rule** button to reactivate the rule.*

The Rule Details Dialog

For detailed information about structuring logical expressions, refer to the SAP documentation.

- The first set of options helps you to explicitly bracket your logical expression, if required.

- In the second set of options, use the Boolean operators AND and OR to link logical expressions; use NOT to negate a logical expression.

- The third set of options and the following fields determine which data is analyzed:

  - With **User Master Data Comparison**, you can compare the values of a specific field in the user master records.

    - For **Field**, specify the field in the user master record whose values should be compared. You can use the **F4 Help** to display available values. The field to the right shows the description of the field you select.

    - Set the **Maximum Edit Distance** field to the desired value. The edit distance specifies the minimum number of changes to the individual characters of a string that is necessary to change one string into another by adding, deleting or replacing a character. For example, the edit distance between *JSmith* and *JSmyth* is 1.

    - If the values in the fields above are case sensitive, select the **Case-Sensitive** check box.

    - Select the **Compare Only Non-Initial Values** check box if only fields that contain values should be compared. For example, if you wanted to compare the email addresses of users, but the email field in the user master data was not maintained (blank) for both users, the rule would (wrongly) identify these users as duplicates. By selecting this check box, empty fields are ignored to avoid such false positives.

  - The option **User Data** enables you to compare the data of a specific field in the user master record with a specified value.

    - For **Field**, specify the field in the user master record whose values should be compared. You can use the **F4 Help** to display available values. The field to the right shows the description of the field you select.

    - Select the operator in the **Comparison Operator** field (you can use the **F4 Help**) and enter the value for your comparison in the **Comparison Value** field.

    - If the values in the fields above are case sensitive, select the **Case-Sensitive** check box.

    - If only one of the users in the comparison has to meet the defined conditions, select the **Only One User Has to Meet Condition** check box. This can be useful, for example, if you want to compare the users of one user group with the users of a different user group. In this case, the criteria `User Group = Group XYZ` would be met by only one of the two compared users.

  - Select **System Data** if you want to compare the value of a specific field in the system data with a specified value. This is helpful if you want to limit the comparison to a specific system.

    - For **Field**, specify the field in the system data whose values should be compared. You can use the **F4 Help** to display available values. The field to the right shows the description of the field you select.

    - Select the operator in the **Comparison Operator** field (you can use the **F4 Help**) and enter the value for your comparison in the **Comparison Value** field.

    - If the values in the fields above are case sensitive, select the **Case-Sensitive** check box.

    - If only one of the users in the comparison has to meet the defined conditions, select the **Only One User Has to Meet Condition** check box. This can be useful, for example, if you want to compare the users of one user group with the users of a different user group. In this case, the criteria `User Group = Group XYZ` would be met by only one of the two compared users.

- The option **Customer-Specific Implementation** enables you to implement a class inheriting from the interface /LICMAN/MS_IF_DUP_CUSTOMER. The method GET_DESCRIPTION provides a description of the purpose of the implemented check, the method DO_CHECK implements the actual check. The implemented class can then be

entered in the **Implementing Class** field. The **F4 Help** provides a list of all classes inheriting from /LICMAN/ MS_IF_DUP_CUSTOMER. The corresponding description is displayed in the field to the right.

Task: **To delete a duplicates rule:**

1. In the Main menu of the SAP Admin module, click **Administration**, then select **Duplicates Rules Editor** from the menu.

2. Select the rule that you want to delete and click the **Delete Duplicates Rule** button.

Working with Customer Reports

FlexNet Manager for SAP Applications enables you to connect customer reports, such as specially created reports or commissioned reports. These 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.

Task: **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**.

Task: **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**.

Task: **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**.

8

Access Rights to SAP Functionality in FlexNet Manager Suite

The main security model for the FlexNet Manager for SAP Applications web UI 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.

Task: *To configure access rights for SAP mode:*

1. In FlexNet Manager Suite, in the settings bar at the top of the page, click **System** and point to **Accounts**.

2. On the **Accounts** page, select the account that you want to configure, and click **Open**.

3. On the **Account Properties** *name* page, click **SAP**.

   This displays the main sections within the SAP mode for which you can configure access rights.

4. Select the corresponding check boxes to allow or deny access to specific features.

5. Click **Save**.

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 on page 98
- **Systems**—see Managing Access Rights for Systems on page 100
- **License Assignment Rule Sets**—see Managing Access Rights for License Assignment Rule Sets on page 102

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

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.

The following table explains the access levels for each security section.

Table 8-1 • 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.

Table 8-1 • Access levels for system landscapes

Section	Access Level	Definition
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.

Task: ***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 8-1 on page 98 for available access levels for each section.

Click **OK**.

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 using an account with appropriate access rights.

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.

The following table explains the access levels for each security section.

Table 8-2 • 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.

Table 8-2 • Access levels for systems

Section	Access Level	Definition
Configuration	No Access	Account has no access to the system in the Configuration section.
	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.

Task: ***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 Table 8-2 on page 100 for available access levels for each section.

     Click **OK**.

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.

The following table explains the access levels for each section.

Table 8-3 • 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	Accounts rights only allow to view the license assignment rule set and the 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.

Task: ***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.

  Click **OK**.

9

SAP License Position

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

Current License Position

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**.

The license position is automatically calculated on a daily basis to reflect the current licensing situation of your organization's SAP 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).

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

- **Name**—Shows 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.

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

- **Purchased**—This is the total number of user licenses that your organization has purchased (as specified on the **License Ratio** or **License Type:** *name* page).

- **Purchase value**—This is 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)**—This is the total number of consolidated user licenses that are currently assigned to users.

- **Consumed value (Current)**—This is 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)**—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. 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)**—This is 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)**—This field indicates 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 Maintaining the License-Type Hierarchy on page 57.

  - License ratio: If a license ratio has been defined and activated, the license position will be calculated accordingly.

- **Used value (Contractual)**—Shows the monetary value of all consumed 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)**—Shows the number of users who could be deactivated (change the Valid To date) according to the recommendations of FlexNet Manager for SAP Applications.

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 on page 245.

License Consumption

You can view your company'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.

Table 9-1 • Information on the **User License Summary** tab

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.
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.

Table 9-1 • Information on the **User License Summary** tab

Column Name	Description
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.
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 on page 108.

- The **Duplicate User Recommendations** tab contains details about recommendation results based on the Duplicate User rule. For more information, see Viewing Duplicate User Recommendations on page 110.

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.

Task: ***To show detailed license 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. The **License Position** page displays the **License Assignment Recommendations** tab and the **Duplicate User Recommendations** tab with recommendation details. Click the tab that you want to view.

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

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

Table 9-2 • Information on the **License Assignment Recommendations** tab

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.

Table 9-2 • Information on the **License Assignment Recommendations** tab

Column Name	Description
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.
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 if the user currently has a developer license.
Created On	The user's creation date.

Table 9-2 • Information on the **License Assignment Recommendations** tab

Column Name	Description
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 on page 69.

License types are consolidated based on the Duplicate User rules. For more information, see Duplicate User Rule on page 208.

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.

Task: *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. The **License Position** page displays the **License Assignment Recommendations** tab and the **Duplicate User Recommendations** tab with recommendation details. Click the tab that you want to view.

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

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

Table 9-3 • Information on the **Duplicate User Recommendations** tab

Column Name	Description
Matched	A green check mark indicates that the conditions of the rule have been met.
Duplicate #	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.
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.
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.

Table 9-3 • Information on the **Duplicate User Recommendations** tab

Column Name	Description
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.
Change Required	**Yes** indicates that a change of license type is recommended; **No** indicates that there is no recommendation to change the license type.
Phone Number	The user's phone number.

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.

Table 9-4 • Options on the **Package Consumption Summary** tab

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.
Consumed	The number of units that have been consumed for this package.
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.
Measurement Date	The date of the measurement on which the package consumption calculation is based.

Per-System View of Package Consumption

You can display a more detailed view of the package consumption. This enables you 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.

Task: ***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**.

Table 9-5 • Package consumption per system

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.

Other Tasks to Do on the License Position Page

After you review the license position, 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 on page 114.

- Release recommendations to make them available to the SAP Admin module for remediation. For more information, see Releasing Recommendations to the SAP Admin Module on page 114.

  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 on page 115.

- View recommendations that are currently under review. For more information, see Viewing Pending Recommendation Sets on page 115.

- View recommendations that have been made available to the SAP Admin module. For more information, see Viewing Recommendation Sets Sent to the SAP Admin Module on page 116.

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.

Task: ***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 **License Assignment Summary** and **Package Consumption Summary** tabs.

Releasing Recommendations to the SAP Admin Module

By releasing license recommendations, 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 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 Recommendation Sets on page 116.

All recommendation sets that have been released will be available on the **History** page. For more information, see License Position History on page 118.

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 Recommendation Sets on page 116.

Important • Until the recommendations have been made available to the SAP Admin module (which involves releasing the recommendation set and accepting it 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.

Task: ***To release a recommendation set 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**).

    After you released a recommendation set, you can accept or reject it. You can only accept or reject the entire set, but not individual recommendations. To process the recommendation set immediately, complete the procedure To process a released recommendation set: under Reviewing and Processing Released Recommendation Sets on page 116. If you do not want to process the recommendation set at this time, you can return to it later. To do so, point to **License Position** in the navigation bar and click **Current Position**. Then click **Review pending recommendations** in the **Tasks** section on the **License Position** page.

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 on page 118.

Task: ***To archive a recommendation set:***

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.

Viewing Pending Recommendation Sets

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

Task: ***To view a pending recommendation set that is 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, which you can accept or reject. For more information, see

Viewing Recommendation Sets 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 a recommendation set has been released to the SAP Admin module, and that this recommendation set has been reviewed and accepted in FlexNet Manager Suite. The recommendation set is listed in FlexNet Manager Suite on the **History** page and has the status **Released**.

Task: ***To view a 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 recommendation set that has been made available to the SAP Admin module.

Reviewing and Processing Released Recommendation Sets

After you have released a recommendation set (see), you can review the recommendations and decide whether to accept or reject the recommendation set:

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

- **Rejected** recommendation sets will be deleted.

*Note • Both accepted and rejected recommendation sets will be listed on the **History** page.*

Task: ***To review released recommendation sets:***

1.   Create a recommendation set by completing the procedure described under Releasing Recommendations to the SAP Admin Module on page 114.

2.   The **Recommendations**: *recommendation set name* page displays the recommendation set that has been released.

The **Recommendations:** *recommendation set name* page is structured in a similar way as the **License Position** page:

●   The **Details** section provides details about the recommendation set, such as the name of the set, a description, the date and time when the license position was calculated, the date and time the set was created, the name of the user who created it, the date and time the set was updated, and the name of the user who updated it.

●   The **User License Summary** tab informs you about the current position and the optimal license position, grouped by license type. For more information, see the Table 9-1, Information on the **User License Summary tab**, on page 106.

●   The **Package Consumption Summary** tab provides an overview of your company's package licensing situation.

The **Show user license recommendations** link below the summary view enables you to view detailed recommendations based on license rules (on the **License Assignment Recommendations** tab) and the Duplicate User rule (on the **Duplicate User Recommendations** tab).

For more information about the contents of both tabs, see Viewing License Assignment Recommendations on page 108 and Viewing Duplicate User Recommendations on page 110.

For more information about the **Package Consumption Summary** tab, see License Position—SAP Packages on page 112.

Task: ***To process a released recommendation set:***

1.   Create a recommendation set by following the procedure described under To release a recommendation set for processing: on page 115.

2.   The **Recommendations**: *recommendation set name* page displays the recommendation set that has been released.

Review the recommendations (see To review released recommendation sets: on page 117).

3.   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 on page 118.

License Position History

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

Task: ***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.

Table 9-6 • Information in the grid on the **History** page

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 on page 119.

It is not possible to process recommendation sets on this page. For more information on processing
recommendation sets, see Reviewing and Processing Released Recommendation Sets on page 116.

● **Delete** unwanted recommendation sets. For more information, see Deleting Recommendation Sets from the
License Position History on page 121.

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.

Task: ***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.

The **Recommendations:** *recommendation set name* page is structured in a similar way to the **License Position** page.

Details Section

The **Details – General** section on the **Recommendations***: recommendation set name* page shows general
information for the archived recommendation set.

● **Name**—The name of the recommendation set.

● **License position calculated at**—The date and time when the license position was calculated.

● **System landscape**—The name of the system landscape for which the license position was calculated.

● **Status**—The status of the recommendation set. Possible values are:

   ● **Released**—The recommendation set was released and accepted.

   ● **Rejected**—The recommendation set was released and rejected.

   ● **Archived**—The recommendation set was archived.

The **Details – User Compliance** section shows a summary of the archived license position for all license types:

● **Purchased**—Total number of user licenses that your organization had purchased at the time.

● **Purchase value**—Monetary value of the licenses that your organization had purchased at the time.

● **Consumed (Current)**—Total number of consolidated user licenses that were assigned to the users at the time.

● **Consumed value (Current)**—Monetary value of all user licenses that were assigned to the users at the time.

- **Used (Optimal)**—The total number of user licenses that would have been consumed if you had accepted all recommendations by FlexNet Manager for SAP Applications. This amount is based on all active license rules, Duplicate User rules, and 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 value (Optimal)**—The monetary value of all user licenses that would have been consumed if you had accepted all recommendations by FlexNet Manager for SAP Applications. This amount is based on all active license rules, Duplicate User rules, user consolidation, and unit price per license.

- **Used (Contractual)**—The number of licenses that would have been consumed if you had accepted all recommendations by FlexNet Manager for SAP Applications. In addition, this value takes specific SAP license contract obligations into account (if these have been specified in FlexNet Manager for SAP Applications):

  - **Spare licenses**: This value includes 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 Maintaining the License-Type Hierarchy on page 57.

  - **License ratio**: If a license ratio had been defined and activated, the license position would have been calculated accordingly.

- **Used value (Contractual)**—The monetary value of all consumed user licenses that would have been consumed if you had accepted all recommendations by FlexNet Manager for SAP Applications (based on the unit price that was entered on the **License Type:** *name* page). In addition, this value includes spare licenses and a license ratio, if these had been specified (see previous item in this list).

- **Retired (Optimal)**—The number of licenses that would have been retired (changing the user's Valid To date so that the user is no longer valid) if you had accepted all recommendations by FlexNet Manager for SAP Applications.

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 was using at the time.

- **Purchase value**—The monetary value of all package licenses that your organization had purchased at the time.

- **Consumed value**—The monetary value of the package licenses that your organization had consumed at the time.

The **Details – Auditing** section on the **License Position** page shows administrative information:

- **Created by**—The user name of the user who created the recommendation set.

- **Created at**—The date and time when the recommendation set was created.

- **Last updated by**—The user name of the user who updated the recommendation set.

- **Last updated at**—The date and time when the recommendation set was updated.

User License Summary Tab

The **User License Summary** tab informs you about the current position and the optimal license position, grouped by license type, at the time when the recommendation set was created. For more information, see the Table 9-1, Information on the **User License Summary tab**, on page 106.

The **Show user license recommendations** link below the summary view enables you to display detailed recommendations based on license rules (on the **License Assignment Recommendations** tab) and the Duplicate User rule (on the **Duplicate User Recommendations** tab). For more information about the content of both tabs, see Viewing License Assignment Recommendations on page 108 and Viewing Duplicate User Recommendations on page 110.

Package Consumption Summary Tab

The **Package Consumption Summary** tab provides an overview of your company's package licensing situation, at the time when the recommendation set was created. For more information, see License Position—SAP Packages on page 112.

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.

Task: ***To delete unwanted 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 delete and click **Delete**.

3.   In the **Delete recommendation set** dialog, confirm by clicking **Delete**.

10

Initial Optimization

The information in this chapter covers features that are designed to help you perform an initial optimization of the license position. The features, for example, enable you to clean up the user master data or to filter out inactive users. This helps to establish a solid basis for the features that are used in the regular optimization process.

User Data Validation

Accurate maintenance of the user master data is crucial for being able to use the data for consolidation. The User Data Validation report that is available in the SAP Admin module helps to optimize the quality of the user master data.

FlexNet Manager for SAP Applications offers support for the maintenance of user master data and checks the fields according to the criteria specified in **Customizing** in the SAP Admin module for existence and contents (see Setting User Data Checks for User Data Validation on page 123).

During evaluation, the positions that have been selected in the SAP Admin module (under **Customizing** on the **User Data** tab) are checked. This check 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 on page 123.

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 on page 291.

You can create variants in order to simplify and standardize repeated analyses.

Setting User Data Checks for User Data Validation

You specify the criteria that are to be used in the User Data Validation report (available from the **Reporting** menu in the SAP Admin module) in the SAP Admin module in the Customizing (available from the **Administration** menu). These settings help you to maintain the quality of your user master 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 on page 174.

Task: ***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 master 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.

Option	Description
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.
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

After you have defined the user data checks in **Customizing** in the SAP Admin module, you can run a User Data Validation report.

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Task: ***To create a User Data 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 **64** (locked by administrator), **128** (locked after incorrect logon), **96** (locked), or **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**.

Reading the Results of a User Data Validation Report

In 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 on page 123). You can display a dialog with the error details by selecting a red field and then clicking the **Error Reason** function key.

You can modify the user data or license data directly in the report. For more detailed information, refer to Changing User Data or License Data on page 29.

Logon Evaluation Report

The Logon Evaluation report is available from the **Reporting** menu in the SAP Admin module.

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.

Note • *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 on page 197. For more information on retiring users, see Retiring Users on page 196.

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 log on to the individually selected systems in the specified time frame.

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 master record.

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.

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 x 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

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Task: ***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 **Systems** 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.

Option	Description
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 64 (locked by administrator), 128 (locked after incorrect logon), 96 (locked), or 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.

Options	Description
Not Logged on in xx 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 master data. If in the user master 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 xx 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.

8. 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.

    Note • As a precondition, you need to create a user exit for the LDAP connection beforehand. For more information, see User Exits for LDAP Connections *on page 293.*

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 master 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.

Reading the Results of a Logon Evaluation Report

Days Since Last 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.

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 will open 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.

Multiple Logons

Using the Logon Evaluation report, 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.

HR Status

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.

Important • *The criteria '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.*

For information on the **ALV Count** column, see Counting Rows in Reports on page 33.

You can modify the user data or license data directly in the report. For more information, refer to Changing User Data or License Data on page 29.

All modifications to user master 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.

Duplicates Search

The Duplicates Search report that is available in the SAP Admin module helps you to identify potential duplicate users across several systems. If one user is using several systems, but has a different user ID on each system, this user might be counted more than once during system measurement. The Duplicates Search report analyzes and compares user data (such as the user ID, user name, and email address) to identify such users. You can use this list of potentially duplicate users to clean up the records of these users, if necessary.

The functionality of the Duplicates Search report is similar to that of the Duplicate User rules that are available in SAP mode in FlexNet Manager Suite. However, it is recommended that you use the Duplicate User rules for identifying duplicates because they provide a more flexible and powerful approach for finding and resolving duplicate users. In addition, the Duplicate User rules provide the benefit of running automatically on a regular basis without your intervention. For more information, see Duplicate User Rule on page 208.

The display options enable you to select an output option for this list. If you select the **Unconsolidated List** display option, the selected duplicates rule finds all users that match the specified search parameters. These users are listed in groups of two. The **Consolidated List** display option goes one step further. It first creates an unconsolidated list and then, in a second step, the rule identifies users that appear in more than one group in the unconsolidated list. These users are then combined into larger groups. The result is a list of users that are grouped together, in which no user will appear in more than one group. This enables you to verify the listed users more efficiently because any user will appear only once in the entire list.

Before you run the Duplicates Search report that is available from the **Reporting** menu, you need to define and activate the Duplicates rule in Customizing using the Duplicate Rules Editor. For more information, see Duplicates Rules Editor on page 93.

You can create variants in order to simplify and standardize repeated analyses.

Creating a Duplicates Search Report

Task: ***To create a Duplicates Search report:***

1. In the Main menu of the SAP Admin module, select an active system from the system landscape.

2. Click **Reporting**, then select **Duplicates Search** from the menu.

    To run the report to analyze all available data, go to step 5. To specify selection criteria and select additional report options, complete step 3 and 4, as necessary. You must provide a rule name; all other report settings are optional.

3. Under **Selection Criteria Systems**, select the systems that you want to search for possible duplicate users. 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 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 **64** (locked by administrator), **128** (locked after incorrect logon), **96** (locked), or **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 **Duplicates Rule**, enter the name of the rule that should be applied. (Rules are defined in Customizing using the Duplicate Rules Editor.) To display the available rules, use the **F4 Help**. This field is mandatory.

6. Under **Display Options**, select how the results should be displayed:

   • **Unconsolidated List**—Select this option to display the users in groups of two.

   • **Consolidated List**—Select this option if the unconsolidated list groups should be combined into larger groups.

7. If you want to use a specific layout, enter the name of the saved layout in the **Layout** field.

8. Click **Execute**. If you have a large amount of data to be analyzed, run the report in the background by selecting **Execute in Background** from the **Program** menu.

Reading the Results of a Duplicates Search Report

In the resulting Duplicates Search report, the individual groups are highlighted by alternating the line color. This enables you to see at a glance the users that belong to a group. The structure of the group depends on your choice of display option.

You can modify the user data or license data directly in the report. For more detailed information, refer to Changing User Data or License Data on page 29.

11

Regular Optimization of the License Position in FlexNet Manager Suite

Optimization of the SAP license position takes place in two separate steps. First, you use the SAP functionality in FlexNet Manager Suite to identify the optimal license position. The features that are available for this process are explained in the present chapter. In a second step, you import the optimal license position into the SAP Admin module to update the user master records in the SAP systems accordingly. This "actual" optimization, also called *remediation*, is described in detail in the chapter Regular Optimization and Remediation in the SAP Admin Module on page 214.

The SAP mode in FlexNet Manager Suite offers a variety of features that help you to maintain and optimize your license position, such as:

- Consumption and transaction analysis—see Consumption Analysis Report on page 133

- Role utilization analysis—see Role Utilization Report on page 138

- Module usage analysis—see Module Usage Report on page 144

- User consolidation—see User Consolidation on page 174

- Transaction profiles—see SAP Transaction Profiles on page 178

- License rules and license rule sets—see Configuring Optimization Rules on page 187

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 on page 178.

Note • The Consumption Analysis report analyzes consumption data only for complete months.

Creating a Consumption Analysis Report

Task: ***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. To run the report to analyze all available data, go to step 5.To specify selection criteria, complete step 4.

4. In the **Selection Details** section, you can limit the report to the following criteria:

   - **System Landscape**—Select the systems that should be used for the analysis.

   - **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, or transaction).

   - **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.

5. 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.

For information on filtering, searching within, or modifying the display of the analysis results, see the relevant section under Using Grids on page 15.

The **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced** > **Choose Fields**).

Table 11-1 • Results of the Consumption Analysis report

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	Displays a check mark if the user currently has a developer license.
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.

Table 11-1 • Results of the Consumption Analysis report

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.

Viewing Consumption Analysis Details in the Consumption Analysis Report

Use the **SAP Consumption Analysis Details** dialog that is available in the Consumption Analysis report 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

Task: ***To view consumption analysis details in the Consumption Analysis report:***

1. In the Consumption Analysis report, select the row for which you want to display consumption details.

2. Click **View**.

The SAP Consumption Analysis Details dialog displays the following information.

Table 11-2 • Information in the **SAP Consumption Analysis Details** dialog

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.

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

Task: ***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. To run the report to analyze all available data, go to step 5. To specify selection criteria, complete step 4.

4. In the **Selection Details** section, you can limit the report to the following criteria:

    -   **System Landscape**—Select the systems that should be used for the analysis.

    -   **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.

5. Click **Refresh** to display the results.

Reading the Results of a Role Utilization Report

The **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced** > **Choose Fields**).

For information on filtering, searching within, or modifying the display of the analysis results, see the relevant section under Using Grids on page 15.

Table 11-3 • Results of the Role Utilization report

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.
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.

Table 11-3 • Results of the Role Utilization report

Column Name	Description
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.
Developer	Displays a check mark if the user currently has a developer license.
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

Table 11-3 • Results of the Role Utilization report

Column Name	Description
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.

Viewing Consumption Analysis Details in the Role Utilization Report

Use the **SAP Consumption Analysis Details** dialog that is available in the Role Utilization report 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 on page 184.

Task: ***To view consumption analysis details in the Role Utilization report:***

1. In the Role Utilization report, select the row for which you want to display consumption details.

2. Click **View**.

The SAP Consumption Analysis Details dialog displays the following information.

Table 11-4 • Information in the **SAP Consumption Analysis Details** dialog

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.

Table 11-4 • Information in the **SAP Consumption Analysis Details** dialog

Column Name	Description
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.

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.

Task: ***To analyze the utilization of a specific role:***

1. Execute a Role Utilization report by following the steps described under

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.

Table 11-5 • Information in the **Advanced Role Utilization** dialog

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.

Task: ***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 on page 138.

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.

Table 11-6 • Information in the **User Activity** dialog

Column Name	Description
System ID	The three-character ID of the system on which the user was active.

Table 11-6 • Information in the **User Activity** dialog

Column Name	Description
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%.

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*.

Creating a Module Usage Report

Task: **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. To run the report to analyze all available data, go to step 5. To specify selection criteria, complete step 4.

4. In the **Selection Details** section, you can limit the report to the following criteria:

   - **System Landscape**—Select the systems that should be used for the analysis.

- **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.

5. 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. For information on filtering, searching within, or modifying the display of the analysis results, see the relevant section under Using Grids on page 15.

The **Analysis Results** section provides the following information (you can modify which columns are displayed using **Advanced** > **Choose Fields**).

Table 11-7 • Results of the Module Usage report

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.

Table 11-7 • Results of the Module Usage report

Column	Description
Developer	Displays a check mark if the user currently has a developer license.
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.

Viewing Consumption Analysis Details in the Module Usage Report

Use the **SAP Consumption Analysis Details** dialog that is available in the Module Usage report 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 on page 184.

Task: ***To view consumption analysis details in the Module Usage report:***

1.   In the Module Usage report, select the row for which you want to display consumption details.

2.   Click **View**.

The SAP Consumption Analysis Details dialog displays the following information.

Table 11-8 • Information in the **SAP Consumption Analysis Details** dialog

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.

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 on page 150 and Viewing SAP User Accounts Evidence on page 154.

2. Reviewing the evidence details and deciding whether indirect access has occurred.

   For more information, see Remote System Evidence on page 150 and SAP User Accounts Evidence on page 153.

3. Creating a non-SAP system and linking evidence to it.

   For more information, see Linking Evidence to a Non-SAP System on page 163.

4. Hiding evidence if it does not need further action.

   For more information, see Showing and Hiding Remote System Evidence on page 152.

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 on page 166.

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 on page 172.

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 on page 150 for more information.

- SAP user account evidence—See SAP User Accounts Evidence on page 153 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 Page* in the section *Inventory Beacons* in the FlexNet Manager Suite online help.

- Collection initiated on an on-premise implementation or on the FlexNet Manager Suite server: Configure the scheduled task **Import SAP user and activity information**. Using this task is mandatory in on-premise 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 on page 157.

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 Details of Remote System Evidence on page 152).

Table 11-9 • Information on the **RFC Connections** tab

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 Details of Remote System Evidence on page 152.
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 on page 152.

For information about viewing the details of a remote system, see Details of Remote System Evidence on page 152.

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.

Task: **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:

   - To hide evidence, select the remote systems that you want to hide. In the **Tasks** section, click **Hide selected connections**.

   - To show evidence, select the remote systems that you want to show. In the **Tasks** section, click **Unhide 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.

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.

Task: **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.

Table 11-10 • Information on the **RFC Connection Details** page

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.

Table 11-10 • Information on the **RFC Connection Details** page

Column	Definition
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—Work Time and/or Multiple Logons—must have been defined and executed in the SAP Admin module. For information on activity checks, see* Running Activity Checks *on page 275.*

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 on page 157.

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.

Table 11-11 • Information on the **SAP User Accounts** tab

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.
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.
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 remote systems** check box is selected. For information about showing and hiding evidence, see Showing and Hiding SAP User Accounts Evidence on page 154.

For information about viewing detailed results of an activity check for a specific SAP user account, see Details of Remote System Evidence on page 152.

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 (accessible under **Optimization**). This enables you to focus on the evidence that requires attention.

Task: ***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 connections**.

   - To show evidence, select the SAP user accounts that you want to show. In the **Tasks** section, click **Unhide selected connections**.

   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.

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.

Task: ***To view the details of SAP user account evidence:***

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. 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.

3. Click the relevant tab—**Work Time** or **Multiple Logons**—to display the corresponding activity check results.

Work Time

The **Work Time** tab provides information that help you identify whether end-users made sufficient pauses in activity.

Table 11-12 • Information on the **Work Time** tab

Column	Definition
System ID	The three-character ID of the system on which the SAP user account is active.

Table 11-12 • Information on the **Work Time** tab

Column	Definition
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.
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.

Table 11-13 • Information on the **Multiple Logons** tab

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.

Table 11-13 • Information on the **Multiple Logons** tab

Column	Definition
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.

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 on page 157.

● How to view the details of a non-SAP system—see Non-SAP System Details Page on page 158.

● How to create a non-SAP system—see Creating a Non-SAP System on page 160.

● How to link evidence to a non-SAP system—see Linking Evidence to a Non-SAP System on page 163.

● How to import user data, roles, and consumption data into a non-SAP system—see Importing Data into a Non-SAP System on page 166.

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 non-SAP system *FlexNet Manager for SAP Applications* 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.

Non-SAP System Details Page

You can view detailed information on a non-SAP system on its details page. This page 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.

Task: ***To view the details of a non-SAP system 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.

Task: ***To view the details of 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 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.

Table 11-14 • Non-SAP system details page

Element	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 on page 36.
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.

Table 11-14 • Non-SAP system details page

Element	Definition
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 Details of Remote System Evidence on page 152.
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$.
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

If you are using an on-premise implementation of FlexNet Manager Suite, you can create a non-SAP system using the System Landscape Editor or from one of the tabs on the **Indirect Access** page (accessible under **Optimization**). Non-SAP systems will be visible in the corresponding system landscape.

If you have deployed inventory beacons, you can create a non-SAP system on the inventory beacon.

Creating a Non-SAP System Using the System Landscape Editor

When you create a non-SAP system using the System Landscape Editor, you do not need to immediately link any evidence to it.

Task: ***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.

Field Name	Description
System ID	The name of the non-SAP system that you want to create. This field is mandatory.
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 on page 163.
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.

Field Name	Description
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 on page 163.
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.

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.

Task: ***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.

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.

Field Name	Description
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 on page 163.
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 on page 163.
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.

4. Click **Create**.

Deleting a Non-SAP System

Note • *The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation.*

When you delete a non-SAP system, the data that the system contains is no longer available.

Task: ***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 on one of the tabs on the **Indirect Access** page (see Linking Evidence via the Indirect Access Page on page 163) or from the details page of a non-SAP system (see Linking Evidence Using the Non-SAP System Details Page on page 164).

Linking Evidence 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.

Linking Evidence to an Existing Non-SAP System

Task: ***To link evidence to an existing non-SAP system using 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 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 Non-SAP System

You can link evidence to a new non-SAP system and create that non-SAP system in one step.

Task: ***To link evidence to a new non-SAP system using 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 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 Non-SAP System Details Page on page 158.

4. Click **Create**.

Linking Evidence Using the Non-SAP System Details Page

You can link evidence to a non-SAP system using the details page of the non-SAP system.

Task: ***To link evidence using the details page of a 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 Non-SAP System Details Page on page 158.

2. On the details page, click **Edit** to open it in write-enabled mode. Perform the relevant steps for the evidence that you want to link—remote system evidence or user account evidence.

   Remote System Evidence

a.   Under **Connectivity**, below the **Remote system** field, click **Add**.

b.   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.

Click **OK**.

c.   Use the **Type** field to specify the type of connectivity between the non-SAP system and the SAP system. Select from the following values:

- **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.

d.   In the **Direction** field, specify the direction of the data flow between the non-SAP system and the SAP system. 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.

This field is only for information purposes and does not influence the data flow.

User Account Evidence

a.   Under **Connectivity**, below the **SAP user accounts** field, click **Add**.

b.   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.

Click **OK**.

3.   Click **Save**.

Unlinking Evidence from a Non-SAP System

You can remove the link between evidence and a non-SAP system.

Task: ***To unlink evidence from a non-SAP system:***

1.   In FlexNet Manager Suite, follow one of the procedures described under Non-SAP System Details Page on page 158 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**.

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 on page 168) and import your prepared file (see Import Procedure on page 167).

- 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 the FlexNet Manager Suite online help.

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).

Table 11-15 • Information on the users list of a non-SAP system

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.

Table 11-15 • Information on the users list of a non-SAP system

Column Name	Description
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	**Yes** indicates that the user currently has a developer license.
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.

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.

Task: **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 on page 168).

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 Non-SAP System Details Page on page 158.

3. On the **Non-SAP System:** *name* page, 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:

a.   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.

b.   Under **File location**, enter the path to the import file, or click **Browse** to navigate to it.

c.   Click **OK**.

- To import a file in .csv format:

a.   In the **Import CSV File** dialog, select the option for the type of data that you want to import: **User**, **Role**, or **Consumption**.

b.   Under **File location**, enter the path to the import file, or click **Browse** to navigate to it.

c.   Click **OK**.

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 on page 138 and Consumption Analysis Report on page 133, respectively.

Preparing Data for Import

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 create three templates and 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.

Preparing Templates for Importing User Data, Roles, and Consumption Data

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.

Importing User Data

Table 11-16 • Columns in a Microsoft Excel workbook or comma-separated file 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 is a developer. ● 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.

Table 11-16 • Columns in a Microsoft Excel workbook or comma-separated file for importing user data from remote systems

Column Name	Description
User Function	The function of the user within your organization.

Importing Roles

Table 11-17 • Columns in a Microsoft Excel workbook and comma-separated file 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.
Authorized Object	The name of the authorized object on the remote system.

Importing Consumption Data

Table 11-18 • Columns in a Microsoft Excel workbook and comma-separated file 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.

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 on page 168.

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.

Task: ***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**.

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.

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 company'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.

Table 11-19 • Information in the **License Position** grid on the **Indirect Access** entry page

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.
Consumed (Non-SAP Systems)	The number of licenses of a particular type that are currently consumed by non-SAP system users.

The **Non-SAP Systems** section shows the system ID and a description of the non-SAP systems whose license consumption due to indirect access is analyzed.

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 on page 150.)

Task: ***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 Table 11-14 on page 158.

  - **Direction**: The direction of the data flow between the non-SAP system and the SAP system.

    For information on possible values, see Table 11-14 on page 158.

- **Named User License Consumption**: Shows how many licenses of a specific type are currently consumed.

- **User Accounts**:

Table 11-20 • **User Accounts** grid in the Indirect Access Evidence report

Field 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).
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.

Table 11-20 • **User Accounts** grid in the Indirect Access Evidence report

Field Name	Description
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.

User Consolidation

The User Consolidation identifies all the unique users across the systems, based on the user master 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.

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 Users entry mask, 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 on page 208.

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.

The **Activate** flag (located in the **Custom Criteria** dialog) enables you to apply custom criteria. The general criteria always apply and do not need to be activated.

Tip • The User Data Validation report in the SAP Admin module helps to ensure that user master records are up to date and complete, which improves user consolidation results. For more information, see User Data Validation on page 122.

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 master 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 section Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules on page 297, for a list of properties that can be used in the **Custom Criteria** section.

The following comparison types are available for the custom criteria.

Table 11-21 • Comparison types for the custom criteria in the User Consolidation

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%.

Table 11-21 • Comparison types for the custom criteria in the User Consolidation

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.

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.

Task: **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:

Option	Description
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 Table 11-21 on page 175, 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.

Task: ***To preview the results of the User Consolidation:***

1. Follow the steps described under To configure the User Consolidation: on page 176 to configure the User Consolidation.

2. In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **User Consolidation**.

3. On the **User Consolidation Configuration** page, in the **Preview Results** section, click **Show license recommendations**.

The **Preview Results** section provides the following information (you can modify which columns are displayed using **Advanced** > **Choose Fields**).

Table 11-22 • Information in the **Preview Results** section

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.
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.

For information on filtering, searching within, or modifying the display of the analysis results, see the relevant section under Using Grids on page 15.

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 on page 133.

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.

Task: ***To access the Transaction Profiles: <system landscape name> page:***

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.

Table 11-23 • Transaction Profile: *profile name* – **Details** section

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 grid in the **Objects** section displays this information.

Table 11-24 • **Transaction Profile:** *profile name* – **Objects** section

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 the object is excluded from the transaction profile. Note that exclusions take precedence over inclusions.
Type	Entry type 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.
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 .

Task: **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. Here you can add SAP objects to the 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 Objects to a Transaction Profile Using the Transaction Profile Editor on page 181

- Importing a list of objects using a prepared file. See Importing Objects into a Transaction Profile on page 182.

- 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 on page 184.

Adding 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).

Task: **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 narrow down 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 detailed information about filtering, see Filtering on page 19.

  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 or objects 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. You need to prepare this list in the form of a comma-separated file (.csv) or Microsoft Excel workbook (.xls or .xlsx) that adheres to a specific column layout.

Files can be imported using the **Transaction Profile:** *name* page (available in FlexNet Manager Suite under **SAP** > **Optimization**), or using a tool called business importer (MGSBI.exe). The business importer 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 Flexera Software Knowledge Base article M100946, *Flexera Software Business Importer (MGSBI) for FNMP*.

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.

For information on the column layout of import files, see Column Layout of Import Files on page 183.

Task:	***To import objects into a transaction profile via the Transaction Profile: <name> page:***

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 into which you want to import objects.

3. On the **Transaction Profile:** *name* page, 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.

4. Under **File location**, enter the path to the import file, or click **Browse** to navigate to it.

5. Click **OK**.

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.

Table 11-25 • Column layout for importing objects into a transaction profile

Column Name	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.

Table 11-25 • Column layout for importing objects into a transaction profile

Column Name	Description
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 **Object Type** 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.
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.

Task: ***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**. Click **Refresh**, then double-click a user.

    - Point to **Analysis Tools** and click **Module Usage**. Click **Refresh**, then double-click a user.

    - Point to **Analysis Tools** and click **Role Utilization**. 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 object or 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 it to narrow down the results. For more information, see Filtering on page 19.

      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 added 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. After you review this list, you can 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.

Task: **To view objects of 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 your browser's **Back** button to return to the previous page.

   For information on filtering, searching within, or modifying the display of the objects list, see the relevant section under Using Grids on page 15.

Editing a Transaction Profile

Task: **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 Objects to a Transaction Profile Using the Transaction Profile Editor on page 181.

      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 on page 187.

- Why are license rules grouped together in license rule sets? See Introduction to License Rule Sets on page 188.

- Which default rules does FlexNet Manager for SAP Applications offer? See Configuring Default License Rules on page 195.

- What is the Preview/Simulation function and what benefit does it have? See License Rule Set Simulations on page 207.

- What is the Duplicate User rule? See Duplicate User Rule on page 208.

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 master records accordingly. Only recommendations for SAP systems can be released to the SAP Admin module.

Each predefined license rule UI 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 Maintaining the License-Type Hierarchy on page 57.

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 on page 191.

The calculation of the baseline and execution of license rules depends on the type of your FlexNet Manager Suite implementation.

- In **on-premise** implementations, 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).

● In **cloud-based** implementations, you need to manually calculate the current baseline and optimal license position, based on all active rule sets. For more information, see Recalculating the Optimal License Position on page 114.

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 on page 192.

You maintain your rule sets on the **License Assignment Rules:** *system landscape name* page. Here you can create, view, and delete rule sets.

Task: ***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**):

● **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.

● **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

Task: ***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

Task: ***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

Task: ***To view 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

Task: ***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.

4. The **License Assignment Rule Set:** *rule set name* page opens. In the **Rules** section, click **Add**.

5. In the **Select Rule Type** dialog, select the rule that you want to add and click **OK**.

    For information on individual SAP license rules that are available in FlexNet Manager Suite, see Configuring Default License Rules on page 195.

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 Simulations of Rule Sets on page 193.

Task: ***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.

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 2012`, 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.

Task: ***To change the default system assignment for individual license rules or rule sets:***

1. Follow the steps described under To create a license rule set: on page 189 to create a license rule set and To add rules to a license rule set: on page 190 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.

4. On the **License Assignment Rule Set**: *rule set name* page, do the following:

   - 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.*

●   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**.

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 Maintaining the License-Type Hierarchy on page 57.

Task: ***To change the order of 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. Click **Save**.

Task: **To change the order of rules in a 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, 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. Click **Save**.

Running Simulations of Rule Sets

You can simulate the application of one or more rule sets to see what outcome it will have before applying a rule set. 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 for active or inactive rules.

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 *on page 190.*

Task: **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. Click **Create**.

6. 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).

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.

Task: ***To preview the results of a rule:***

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**).

Table 11-26 • Preview rule results

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.

Table 11-26 • Preview rule results

Column Name	Description
Days Since Last Logon	The number of days since the user last logged on to the SAP system.
Developer	Displays a check mark if the user currently has a developer license.
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.
User Group	The group that the user belongs to.
User Type	The user type of the user.

For information on filtering, searching within, or modifying the display of the rule results, see the relevant section under Using Grids on page 15.

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 on page 196
- "Email Addresses" Rule on page 197
- "Last Logon" Rule on page 197

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

Use this rule to assign all users with a developer key a specific license type.

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 wildcards * (to replace multiple characters) and ? (to replace one single character). Separate multiple email address criteria with a comma or semicolon.

- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met.

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 company and would not need their SAP license any longer.

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 (mainly used 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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 wildcards * (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.

- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met.

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 CPU Time rule to differentiate between a Professional and a Limited Professional user.

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 rule described under "Transaction Profile by Maximum Objects Used" Rule on page 202 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 on page 178.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 rule described under "Transaction Profile by Maximum Object Types Used" Rule on page 201 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 on page 178.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 on page 178.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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).

  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 degree of similarity is equal to or higher than the percentage value you entered.

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 on page 178.

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 wildcards * (to replace multiple characters) and ? (to replace one single character). Separate multiple groups with a comma or semicolon.

- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met.

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 To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 wildcards * (to replace multiple characters) and ? (to replace one single character). Separate multiple user names with a comma or semicolon.

- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met.

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 user type 91.

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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 roles with a comma or semicolon.

- **Recommended License Type**—Select the license type that should be recommended if the rule condition is met.

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

Refer to the Properties and Methods on page 297 for a list of properties and methods that can be used to define a Custom rule.

Creating a Custom Rule

Refer to To create a license rule set: on page 189 and To add rules to a license rule set: on page 190 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.

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

Using FlexNet Manager for SAP Applications, you can simulate running a rule set on one or more SAP systems to determine the current and optimal license position for each user. This enables you to make changes to a rule set without affecting any live data. Simulations can be run on active or inactive rules.

For information on how to run a rule set simulation, see Running Simulations of Rule Sets on page 193.

In SAP mode in FlexNet Manager Suite, the **Simulations** page lists all rule set simulations that have been run.

Task: ***To access the Simulations page:***

In FlexNet Manager Suite, click **SAP**, point to **Optimization** and click **Simulations**.

The **Simulations** page contains the following information:

Table 11-27 • Information on the **Simulations** page

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.
Last Updated	The date and time when the simulation was last updated.
Updated By	The user who updated the simulation.

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 on page 208.

- **Delete** unwanted simulations. For more information, see Deleting Simulations on page 208.

It is not possible to release simulation results to the SAP Admin module.

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.

Task: ***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.

The **Simulation:** *simulation name* page is structured in a similar way to the **License Position** page. For information on the values that are available in the **Details** section, see Current License Position on page 104. For information on the values that are available on the **User License Summary** and **Package Consumption Summary** tabs, see License Consumption on page 105.

Deleting Simulations

In SAP mode, the **Simulations** page enables you to see all simulations. You can delete any unwanted simulations from the **Simulations** page.

Task: ***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.

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 master 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 master record, and the User Consolidation will now consolidate the two accounts correctly.

You specify the selection criteria (fields in the user master 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 master 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 **Active** flag (located in the **Create Custom Rule** 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 master 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#. Refer to Properties and Methods on page 297 for a list of properties that can be used in the **Custom Criteria** section.

The following comparison types are available for your custom Duplicate User rule.

Table 11-28 • Comparison types for the 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%.
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.

Task: ***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 Table 11-27 on page 207, 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.

Example for the Duplicate User 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 on page 174.*

Task: ***To preview the results of the Duplicate User rule:***

1. Follow the steps described under To define a Duplicate User rule: on page 211 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**).

Table 11-29 • Information in the **Preview Results** section

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.

Table 11-29 • Information in the **Preview Results** section

Column Name	Description
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.

12

Regular Optimization and Remediation in the SAP Admin Module

This chapter describes the processes known as *remediation* that you perform in the SAP Admin module. During remediation, you retrieve recommended changes from FlexNet Manager Suite and apply them to the SAP master records.

In addition, it explains in which scenarios and how you could use the Check for License Type 11 and License Distribution by Cost Center reports.

Processing License-Type Recommendations in the SAP Admin Module

FlexNet Manager for SAP Applications calculates the optimal license position based on active rules and reports and saves this data to its database (see Regular Optimization of the License Position in FlexNet Manager Suite on page 133). After these recommendations have been released in FlexNet Manager Suite and made available to the SAP Admin module, you can import them into the SAP Admin module of FlexNet Manager for SAP Applications. (For information on releasing recommendations in FlexNet Manager Suite to the SAP Admin module, see Releasing Recommendations to the SAP Admin Module on page 114.)

The remediation process usually comprises the following steps:

1. Importing recommendations from SAP mode in FlexNet Manager Suite. See Importing Recommendations on page 215.

2. Display the recommendations in the **Process License Recommendations** report or the **Process Duplicate Users** report. See Process License Recommendations Report on page 216 or Duplicate User Recommendations on page 227, respectively.

3. Process the recommendations. See Processing License-Type Recommendations on page 219 and Processing Duplicate User Recommendations on page 229.

4. Update the user master records in the SAP database accordingly. See Committing License-Type Changes on page 224 for information on updating license types in the user master records. Follow the steps described under To commit duplicate user data changes to the SAP systems: on page 231 to update user data for duplicate user recommendations.

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 different status values, see Recommendation Status for License Recommendations on page 216.

A separate report is available to display a history of the recommendations that were released from FlexNet Manager Suite to the SAP Admin module. For more information, see Creating a Recommendations History Report on page 225 and Viewing a Recommendations History Report on page 226.

Importing Recommendations

As a first step, you import recommendations from FlexNet Manager Suite into the SAP Admin module. This is a precondition for the creation of a Process License Recommendations or Duplicate Users report.

During the import, the Process License Recommendations and Duplicate Users reports are unavailable, to prevent data inconsistencies.

Important • 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, which makes them available to the SAP Admin module.*

Task: ***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.

2. Click **Import**. The **Import recommendations from FNMP** dialog is displayed.

3. Click **OK** to import all available data (license-type recommendations and duplicate user lists). During the import, no recommendation reports can be run.

*Note • 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 is displayed 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.

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 The License Recommendations History on page 225.

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. The report lists the license-type recommendations, narrowed down, if required, by different criteria (for example, by system, user, license type, date range, or recommendation status).

Recommendation Status for License Recommendations

When you process the recommendations in a Process License Recommendations report, 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, or more exactly, recommendations are set to a certain status automatically when specific conditions are fulfilled.

Recommendations can have one of the following status values:

- **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.

- **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.

Creating a Process License Recommendations Report

After you have imported the recommendations from FlexNet Manager Suite, you can create a Process License Recommendations report.

Task: ***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.

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.

The report will be executed automatically when you click the underlined status number.

- 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 contained in the report.
User Name	Enter the user ID or range of user IDs that should be contained in the report.
Original License Type	Enter the license type or a range of license types that should be contained in the report.
Recommended Lic. Type	Enter the recommended license type or a range of recommended license types that should be contained 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.

Click **Execute** to execute the report.

3. The **Process License Recommendations** screen opens where you can process the recommendations. For information, see Processing License-Type Recommendations on page 219.

Processing License-Type Recommendations

After you have created a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), you can view its details and process it. The term "processing" refers to reviewing the license-type recommendations and acting on them, for example, accepting, rejecting or overwriting license-type recommendations, and ultimately committing these changes to the SAP database.

The following information is available in the Process License Recommendations report:

Table 12-1 • Information in the Process License Recommendations report

Column Name	Description
System	The system (uniquely identified by its RFC destination) on which the user is active.
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 following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Ignored** For information on status values, see Recommendation Status for License Recommendations on page 216.
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)`.
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 on page 69. For information about consuming spare superior licenses, see Handling Over-Consumption of License Types on page 65.

Table 12-1 • Information in the Process License Recommendations report

Column Name	Description
Description	A description of the 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 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 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.
Note	When you reject or overwrite a recommendation, you can enter a reason. The text that you enter will be displayed here.
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.
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:

● Processed recommendations (accepted/rejected/overwritten) that have not been committed to the database are orange.

● Committed recommendations are green.

● Recommendations that failed to be committed to the database are red.

- Recommendations that are grey 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.*

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.

After you have created a Process License Recommendations report and evaluated its entries, you can accept, reject, overwrite, and reset the recommended license type for each user.

Accepting Recommendations

Accepted recommendations that have not been committed to the database are orange.

Task: ***To accept a recommendation:***

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), 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.

   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. When you are finished, click **OK**.

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.

Important • This procedure will change the license type only in the report. The user master data remain unchanged until you commit your changes.

Rejecting Recommendations

Rejected recommendations that have not been committed to the database are orange.

Task: **To reject a recommendation:**

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), and select the user or users whose license type should be left unchanged.

2. Click **Reject**. The **Ignore Recommendation** dialog is displayed. In the **Reason** field, enter a reason for the rejection.

3. 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.

4. Click **OK** to confirm the rejection.

Overwriting Recommendations

Overwritten recommendations that have not been committed to the database are orange.

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.

Task: **To overwrite a recommendation:**

1. Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), and select the user or users whose license type should be changed to a value of your choice.

2. Click **Overwrite**. The **Overwrite Recommendation** dialog is displayed. The following options are available:

   - 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 is displayed next to the value.

     b. In the **Reason** field, enter a reason why the recommendation is overwritten (optional).

c.   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.

d.   If in step a you assign the new license type 04 (Substitute) or 11 (Multi-Client/System) and you click **OK**, you are prompted to enter the following additional information. When you are finished, click **OK**.

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.

● 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 master 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.

3.   Click **OK** to confirm the overwrite action. The license type in the report is changed to the value you specified.

Selecting Processed Rows for Committing

The **Select** button enables you to quickly select all users that have been processed. You can then commit the changes for these users to the SAP database without having to manually select them in the report.

Task: ***To select all users that have been processed:***

1.   Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217) and process the recommendations.

2.   Click **Select**. All users that have been processed are selected in the report.

     You can now commit the changes for these users to the SAP database. For more information, see Committing License-Type Changes on page 224.

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 master records in the SAP database.

Task: ***To commit license-type changes to the user master records in SAP:***

1.   Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), and process the license-type recommendations.

2.   Select the user or users whose master records should be updated and click **Commit**. The user master data in the SAP database is changed accordingly.

Resetting Recommendations

You can undo any processing action that was not committed to the SAP database. In other words, the **Reset** button enables you to change a license recommendation to the status that is currently saved in the 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.

Task: ***To reset a recommendation:***

1.   Run a Process License Recommendations report (see Creating a Process License Recommendations Report on page 217), and select the recommendation that you want to reset.

2.   Click **Reset**. The recommendation is reset to the status that is currently saved in the SAP database.

The License Recommendations History

If you want to see the history of license-type recommendations, you can create a Recommendations History report. The Recommendations History report contains all recommendations that have been made. The data for this report is stored in a table that 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 Recommendations History Report

Task: ***To create a Recommendations History report:***

1. Perform one of the following steps:

    ●   In the Main menu of the SAP Admin module, open the **Reporting** menu and select **Recommendations History**.

    ●   In the SAP Admin module, run a Process License Recommendations report by following the steps described in the section Creating a Process License Recommendations Report on page 217. 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.

Option	Description
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 Recommendation Status for License Recommendations on page 216.

3. Click **Execute**.

Viewing a Recommendations History Report

The Recommendations History report contains the following read-only information:

Table 12-2 • Information in the Recommendations History report

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.
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.

Table 12-2 • Information in the Recommendations History report

Column Name	Description
Status	The following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Unprocessed** • **Ignored** For information on status values, see Recommendation Status for License Recommendations on page 216.
Original License Type	The license type in the SAP system. If the SAP License Type and the FNMP License Type are not identical, the entire line will be highlighted.
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 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.

Duplicate User Recommendations

The duplicate user recommendations are based on the settings of the Duplicate User rule (see Duplicate User Rule on page 208).

Recommendation Status for Duplicate User Recommendations

When you process the recommendations in a Duplicate User Recommendations report, you can change the user data of a user to enable the correct consolidation of the users in the duplicates group. You can also ignore the recommendation. Depending on your choice, the recommendations for duplicates groups are assigned a *status*. Assigning a 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.

For information on changing the recommendation status, see To modify the recommendations status in the grid: on page 231.

Creating a Duplicate User Recommendations Report

After you have imported the recommendations from FlexNet Manager Suite, you can create a Duplicate Users Recommendations report.

Task: ***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.

Option	Description
Ignored	Returns recommendations that have been imported previously but for which the status Ignore was set.
Total	Returns all available recommendations.

The report will be executed automatically when you click the underlined status number.

- 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.

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.

Click **Execute**.

The **Process Duplicate Users** screen opens where you can process the recommendations. For information, see Processing Duplicate User Recommendations on page 229.

Processing Duplicate User Recommendations

The **Process Duplicate Users** screen that is available after you create a Duplicate Users Recommendations report (see Creating a Duplicate User Recommendations Report on page 228) 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).

In this context, *processing* refers to changing 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. 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.

2. Committing the changes to the database to update the user master data.

Both steps are described in detail in the following section.

Note • Recommendations that are grey 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

Task: ***To modify the user data in the grid:***

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report on page 228).

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 master 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 To commit duplicate user data changes to the SAP systems: on page 231).

Changing the Recommendations 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.

Task: ***To modify the recommendations status in the grid:***

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report on page 228).

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.

   Note that the status of all users in a duplicate group will be changed.

Committing Duplicate User Data Changes to the SAP Systems

To make the changes permanent, you need to commit them to the user master 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. For more information on IdM, see Using SAP IdM on page 89.*

Task: ***To commit duplicate user data changes to the SAP systems:***

1. Run a Duplicate User Recommendations report (see Creating a Duplicate User Recommendations Report on page 228).

2. On the **Process Duplicate Users** screen, select 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 master 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 target system. This will open the transaction SU01 on the target 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 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 appears if the license type was manually changed using the transaction SU01.

Check for License Type 11 Report

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.

Creating a Check for License Type 11 Report

Task: **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.

Option	Description
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 **64** (locked by administrator), **128** (locked after incorrect logon), **96** (locked), or **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.

Reading the Results of a Check for License Type 11 Report

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 below.

Task: **To accept the license-type recommendations:**

1. Follow the steps under 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. To roll out these license-type changes to the satellite systems, click **Update License Data**.

You can also modify the user data or license data directly in the report. For more information, see Changing User Data or License Data on page 29.

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.

For information on the ALV Count column, see Counting Rows in Reports on page 33.

License Distribution by Cost Center (License Chargeback) Report

The License Distribution by Cost Center report, which is shortened to License Chargeback in the menu, 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, it 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 Running the Measurement Program on page 278.

You can create variants in order to simplify and standardize repeated analyses.

Creating a License Distribution by Cost Center (License Chargeback) Report

Task: ***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, provide the following information:

   a.   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.

   b.   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.

4.   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 master 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

The **Cost Center** tab displays the cost centers that are included in the element you selected in the Standard Hierarchy together with other information.

Table 12-3 • Information on the **Cost Center** tab

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

On the **User** tab, the 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.

Table 12-4 • Information on the **User** tab

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 master record of the user.
User Name	The user's user name in the SAP system.

Table 12-4 • Information on the **User** tab

Column Name	Description
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, refer to Counting Rows in Reports on page 33.
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.
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

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.

Table 12-5 • Information on the **License Type** tab

Column Name	Description
Installation Number	The installation number of the system that contains the CO module.

Table 12-5 • Information on the **License Type** tab

Column Name	Description
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 more information, refer to Counting Rows in Reports on page 33.
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 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 on page 236. For more information on counting rows in ALV grids, refer to Counting Rows in Reports on page 33.

13

SAP Package Licensing in FlexNet Manager Suite

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.

Introduction to SAP Package Licensing

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.

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 master 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 Flexera Software 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 Flexera Software 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 with a schedule 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 more information about the Application Recognition Library, see the FlexNet Manager Suite online help.

Important • The licensing terms for SAP packages are encoded by Flexera Software 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.

For more information about the PURL, see the FlexNet Manager Suite online help.

Workflow of SAP Package Consumption Analysis

The usual package measurement and analysis workflow includes the following steps:

1. You initiate the package measurement in the SAP Admin module. For more information, see Performing an SAP Package Analysis on page 267.

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 on page 49.

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 on page 241.

4. You can manually add SAP packages or edit the details of packages. This step is optional. For more information, see Manually Adding Packages on page 242 and Editing Package Information on page 245.

5. The package consumption is calculated, and you can view the results. For more information, see Previewing the Package Consumption on page 248 and License Position—SAP Packages on page 112.

Displaying SAP Packages in FlexNet Manager Suite

Before you can display SAP packages in FlexNet Manager Suite, the following preconditions must be met:

- You initiated the package measurement in the SAP Admin module. For more information, see Performing an SAP Package Analysis on page 267.

- The SAP Inventory Agent has been scheduled to import inventory data from SAP systems. For more information, see Collection of User Details and Consumption Data from SAP Systems on page 49.

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 on page 242 and Defining a Custom Formula on page 247.

- 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 company 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 Flexera Software. You can do so by sending an email to econtent@flexerasoftware.com. Flexera Software will endeavour to incorporate the package information into a future release of the FlexNet Manager for SAP Applications PURL.

Task: ***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.
Number purchased	The number of licenses that your company 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.

Option	Definition
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

Viewing Package Details

You can display information for each package on its details page.

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Task: ***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.

Details Page—Details Section

Table 13-1 • Package information on the details page in the **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 company 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.

Table 13-2 • Package information on the details page in the **System Measurements** section

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.
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 on page 248.

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 on page 247.

Task: ***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:** *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 To manually add a package: on page 242 under step 6.

Note • 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).

Task: ***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:** *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. Refer to Package Rule Properties and Methods on page 301 for a list of properties and methods that can be used to define a custom package formula.

Task: ***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:** *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.

Task: ***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.

Task: ***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.

Table 13-3 • Package consumption per system

Option	Description
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.

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 on page 112.

For information about other data that is available on the package details page, see Viewing Package Details on page 243.

14

Working with Offline Systems

You can use the analytic functions of FlexNet Manager for SAP Applications for systems that are not connected online, using RFC communication. This is useful, for example, if you want to analyze user data from systems that should not be connected to the main system via RFC or to the FlexNet Manager Suite server.

A component called FlexNet Beacon, which is included in the FlexNet Manager Suite installation package, enables you to export the user and consumption data as well as package measurement results from an offline system into an inventory file. This inventory file can then be imported for analysis into FlexNet Manager Suite. For more information, see Collecting Data from Offline Systems on page 249.

When working with offline systems, you have the following options:

Process license-type recommendations—After data has been collected and made available in FlexNet Manager Suite, you can analyze the user and consumption data to identify the optimal license type for each user on the offline system. After analysis, FlexNet Manager for SAP Applications can generate a recommendations file, which enables you to export the recommendations back into the offline system where an SAP administrator can process them. For more information, see License-Type Recommendations on Offline Systems on page 253.

Execute package measurements—You can measure the usage of packages on offline systems. For more information, see Executing Package Measurements on Offline Systems on page 263.

Note • Offline systems in FlexNet Manager Suite will not be synchronized with the system landscape in the SAP Admin module, because offline systems cannot be processed. They are by definition "offline".

Collecting Data from Offline Systems

The collection of user data and package measurement results from an offline SAP system is facilitated by an inventory beacon and the SAP Inventory Agent (for Cloud customers) or by the SAP Inventory Agent on its own (for on-premise customers).

Inventory beacons are described in section Inventory Beacons on page 49. For detailed information on configuring an inventory beacon, see *Register an Inventory Beacon* in the FlexNet Manager Suite online help. (In the modal navigation bar, click **Management**, point to **Discovery & Inventory**, and click **Beacons**. On the **Beacons** page, click the online Help icon.)

Important • Package measurement data can be collected only after a package measurement has been executed. For more information, see Executing Package Measurements on Offline Systems on page 263.

Data Collection Using an Inventory Beacon

To collect data from an offline SAP system, the FlexNet Beacon component must be installed on the same system as the offline SAP system, or on a machine with a network connection to the offline SAP system.

When an inventory beacon is used to collect SAP data from an offline system, the beacon has to be set up in a particular way.

Configuring an inventory beacon for an offline system usually comprises the following steps:

1.   Installing an inventory beacon on the same machine as the offline SAP system or on a machine that is connected to the offline SAP system. For more information, see The Inventory Beacon Installer on page 250 and Installing an Offline Inventory Beacon on page 251.

2.   Configuring the offline inventory beacon. This requires a config.xml file and an .xml file that contains the SAP system landscape ID (SAPSystemLandscape.xml). For instructions on obtaining these files, see Obtaining Configuration Files on page 251.

3.   Adding the offline SAP system to the inventory beacon. For more information, see Creating Connections on page 52.

4.   Collecting data and transferring it to the FlexNet Manager Suite processing server. For more information, see Collecting and Transferring Data on page 252.

The Inventory Beacon Installer

If you are using FlexNet Manager Suite in an on-premise or cloud-based implementation, you can download the beacon installer from FlexNet Manager Suite.

Task: *To download the beacon installer:*

1.   In FlexNet Manager Suite, click **Management**, point to **Discovery & Inventory**, and click **Beacons**.

2.   On the **Beacons** page, click **Deploy a Beacon**.

3.   On the **Deploy a Beacon** page, click **Download beacon**.

4.   Use the web browser dialogs to save the installer to a convenient directory.

Alternatively, if you are using FlexNet Manager Suite in an on-premise installation and you downloaded the folder with installers from FlexNet® Operations On-Demand, you will also find the beacon installer in folder `C:\FlexNet Manager Platform\Installers\Inventory Beacon` (in a default installation).

Installing an Offline Inventory Beacon

To install an inventory beacon on an offline system, you need to manually copy the beacon installer to the offline system.

Task: ***To install an offline beacon:***

1. Execute the inventory beacon installer on the offline system and follow the instructions of the installation wizard.

2. **Cloud-based implementations only:** On the **Reporting Endpoint** page of the installation wizard, you are prompted to enter the URL to the FlexNet Manager Suite server. Even though the system has no connection to the FlexNet Manager Suite server, enter a dummy value here to be able to continue with the installation.

3. On the **Ready to Install the Program** page, click **Install**.

You can now configure the connection to the SAP system for this offline beacon.

Obtaining Configuration Files

To obtain the config.xml file and SAPSystemLandscape.xml, you need an online beacon that is connected to FlexNet Manager Suite. If you do not have a beacon that is already set up, follow the instructions in the topics *Installing an Inventory Beacon* and *Register an Inventory Beacon* in the FlexNet Manager Suite online help to create a "dummy" beacon.

Task: ***To obtain the config.xml file for an offline beacon:***

1. On an online (or dummy) beacon, run the FlexNet Beacon interface (for example, **Start** > **FlexNet Beacon**).

2. On the **FlexNet Manager Suite** tab, 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.

3. In the web browser page, you are prompted to add a friendly name that would normally (on an online beacon) be used to identify this beacon in inventory lists in FlexNet Manager Suite. Because you are configuring an offline beacon, this name will not appear in the inventory lists. In other words, the name is irrelevant.

4. Click **Download configuration**.

5. 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 FlexNet Beacon software).

6. Copy the configuration file to the offline beacon.

7. On the offline beacon, open the FlexNet Beacon interface.

    Cloud-based implementations only: When you start the offline beacon, an error message is displayed. This is because the beacon tries to connect to the FlexNet Manager Suite server, but fails because it is offline. Click **OK** to close the message.

8. On the **FlexNet Manager Suite** tab, click **Import...**.

9. Browse to the configuration file, and click **Open**.

    The configuration file is loaded, and populates the connection details in the **FlexNet Manager Suite** tab. However, because each inventory beacon has its own UID, and the configuration file contains the UID of the online beacon, an error is displayed. The error message displays the UID of the offline beacon.

10. Open the configuration file in a text editor.

11. Copy the correct beacon UID from the error message and paste it into the file, replacing the existing UID. This will look something like this:

    `<BeaconUID>xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx</BeaconUID>`

12. Save the configuration file.

Task: ***To obtain the SAPSystemLandscape.xml file for an offline beacon:***

1. Locate the file SAPSystemLandscape.xml in one of the following ways:

    -   On the online beacon (the beacon that you used for the procedure To obtain the config.xml file for an offline beacon:), the file is located in the folder `C:\ProgramData\Flexera Software\Beacon`.

    -   On the FlexNet Manager Suite server, the file is located in the folder `<InstallDirectory>\Beacon`.

2. Copy SAPSystemLandscape.xml into the folder `C:\ProgramData\Flexera Software\Beacon` on the offline beacon.

    You can now add the offline SAP system (or several offline SAP systems) to the beacon. For more information, see Creating Connections on page 52.

Collecting and Transferring Data

After the inventory beacon has been set up, it automatically executes the SAP Inventory Agent, which collects inventory data from the offline SAP system. The gathered data is output in the form of an intermediate package file, which is located in the directory *%AppData%*`\Flexera Software\Beacon\IntermediateData\` (for example, on Windows Server 2008 R2, *%AppData%* is `ProgramData`). The file-naming convention for the package file is `S[T=<Tenant ID>][S=<SAP System ID><SAP Client ID>]_<Inventory Timestamp>.zip`.

You then need to manually copy the intermediate package file to the FlexNet Manager Suite processing server and import it into the database. To do so, perform the following steps:

1. Copy the package file (.zip) into the folder *%AppData%*\Flexera Software\Beacon\IntermediateData on the application server.

2. Manually run the scheduled task **Import SAP inventories**.

License-Type Recommendations on Offline Systems

FlexNet Manager for SAP Applications can analyze the inventory information that was extracted from an offline system. After this analysis, the product calculates an optimal license position, offering recommendations for appropriate license types for each user of the offline system. You can export these license-type recommendations into a file, and import this file back into the offline system where an SAP administrator can process the license-type recommendations. In this context, *process* means to accept or reject the recommendations, and apply the changes to the user master data on the offline system.

For information on collecting data from an offline system using an inventory beacon, see Collecting Data from Offline Systems on page 249.

The workflow for processing recommendations on offline systems usually includes the following steps:

1. Exporting the license-type recommendations file from FlexNet Manager Suite into a recommendations file. For more information, see Exporting License-Type Recommendations for Offline Systems on page 254.

2. Importing the recommendations file into the offline system. For more information, see Importing License-Type Recommendations into an Offline System on page 255.

3. Displaying the recommendations in the Process Recommendations Offline report on the offline system. For more information, see Creating a Process Recommendations Offline Report on page 256.

4. Processing the recommendations. For more information, see Processing License-Type Recommendations for Offline Systems on page 258.

5. Updating the user master records in the SAP database accordingly. For more information, see Committing License-Type Changes on page 263 for information on updating license types in the user master records.

Exporting License-Type Recommendations for Offline Systems

Prerequisites

Before you can process license-type recommendations on offline systems, you need to do the following:

1. Calculate the current license position. For more information, see Current License Position on page 104.

2. Create a recommendation set and release it to the SAP Admin module. For more information, see Releasing Recommendations to the SAP Admin Module on page 114.

3. Review and accept the recommendations of the recommendation set you created in step 2. For more information, see Reviewing and Processing Released Recommendation Sets on page 116.

Export Procedure

After you have performed the steps described under Prerequisites on page 254, 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 import into an XML file the recommendation set that was sent to the SAP Admin module.

Task: ***To export license-type recommendations for offline systems:***

1. Ensure that the steps as detailed under Prerequisites on page 254 have been performed.

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

3. On the **License Position** page, in the **Tasks** section, click **Export recommendations sent to SAP**.

4. Depending on your browser, a dialog is displayed asking whether you want to open or save this file.

    Select the option to save, and click **OK** or **Save**.

5. Depending on your browser, the file may automatically download to your default location, or a **Save As** dialog may be displayed.

    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 offline systems. The file can contain recommendations for several systems (if you released and accepted recommendations for more than one system). During import, the SAP system will import only the recommendations that are appropriate for that system.

Importing License-Type Recommendations into an Offline System

The transaction /LICMAN/OFFLINE starts the offline functionality. The entry screen provides information about the offline system, as well as high-level details about the previous set of license-type recommendations that have been imported and processed on the system.

Task: ***To import license-type recommendations into an offline system:***

1. Use the transaction /LICMAN/OFFLINE to start the offline functionality.

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 be processed.

Using the Process Recommendations Offline Report for Offline Systems

Like the Process License Recommendations report for online 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.

Recommendation Status for License Recommendations for Offline Systems

When you process the recommendations in a Process Recommendations Offline report on an offline 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:

- **Pending**—This status is assigned automatically during import, to recommendations that have 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 ignored until a date that you specify.

- **Overwritten**—Recommendations that had their license type changed to a value that is different from 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 ignored 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 ignored 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 appear only in the Recommendation History report, and their status cannot be changed.

Creating a Process Recommendations Offline Report

After you have imported the recommendations from FlexNet Manager Suite into an offline system using an .xml file, you can create a Process Recommendations Offline report on that system.

Task: ***To create a Process Recommendations Offline report:***

1. Use the transaction /LICMAN/OFFLINE to start the offline functionality.

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 offline 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.

Option	Description
Pending	Returns recommendations that have been imported, but have not yet been processed.
Accepted	Returns recommendations that were imported previously and were accepted.
Rejected	Returns recommendations that were imported previously and were rejected.

Option	Description
Overwritten	Returns recommendations that were imported previously, and for which the recommended license type was not accepted but was changed to a different license type.
Ignored	Returns recommendations that were imported previously, but for which the status Ignore was set.
Total	Returns all available recommendations.

The report will be executed automatically when you click the underlined status number.

● 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.

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 are currently assigned to users 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 to include recommendations that have been imported, but have not been processed.
Accepted	Select this check box io include recommendations that have the status Accepted.
Rejected	Select this check box to include recommendations that have the status Rejected.
Overwritten	Select this check box 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.

Click **Execute** to execute the report.

4. The **Process Recommendations Offline** screen opens where you can process the recommendations. For information, see Processing License-Type Recommendations for Offline Systems on page 258.

Processing License-Type Recommendations for Offline Systems

After you have created a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), you can view its license recommendations and process them. The term *processing* refers to reviewing the license-type recommendations and acting on them; for example, accepting, rejecting or overwriting license-type recommendations, and ultimately committing these changes to the SAP database.

The following information is available in the Process Recommendations Offline report:

Table 14-1 • Information 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 license-type change is recommended.
First Name	The first name of the user for whom a license-type change is recommended.
Last Name	The last name of the user for whom a license-type change is recommended.
Status	The following status values are available: • **Pending** • **Accepted** • **Rejected** • **Overwritten** • **Ignored** For information on status values, see Recommendation Status for License Recommendations for Offline Systems on page 255.
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)`.
Recommended License Type	The 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. For information about license ratios, see Managing SAP License Ratios on page 69. For information about consuming spare superior licenses, see Handling Over-Consumption of License Types on page 65.

Table 14-1 • Information in the Process Recommendations Offline report

Column Name	Description
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 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.

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.

● Grey 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.

After you have created a Process Recommendations Offline report and evaluated its entries, you can accept, reject, overwrite, and reset the recommended license type for each user.

Accepting Recommendations

Accepted recommendations that have not been committed to the database are orange.

Task: ***To accept a recommendation:***

1. Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), and select for which user, or users, you want to accept the recommendations.

2. Click **Accept**. The license type in the Process Recommendations Offline report is changed to the recommended value.

   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. When you are finished, click **OK**.

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.

Important • This procedure will change the license type only in the report. The user master data remain unchanged until you commit your changes.

Rejecting Recommendations

Rejected recommendations that have not been committed to the database are orange.

Task: ***To reject a recommendation:***

1.   Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), and select the user or users whose license type should be left unchanged.

2.   Click **Reject**. The **Ignore Recommendation** dialog is displayed. In the **Reason** field, enter a reason for the rejection.

3.   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**—Specify 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.

4.   Click **OK** to confirm the rejection.

Overwriting Recommendations

Overwritten recommendations that have not been committed to the database are orange.

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.

Task: ***To overwrite a recommendation:***

1.   Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), and select the user or users whose license type should be changed to a value of your choice.

2.   Click **Overwrite**. The **Overwrite Recommendation** dialog is displayed. The following options are available:

  ●   **Assign a new license type:** Perform the following steps.

    a.   In the **New License Type** field, enter the new license type you want to assign.

    b.   In the **Reason** field, enter a reason why the recommendation is overwritten (optional).

    c.   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.

d. If in step a, you assign the new license type **04** (Substitute) or **11** (Multi-Client/System) and you click **OK**, you are prompted to enter the following additional information. When you are finished, click **OK**.

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.

- **Retire the user:** Perform the following steps.

  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 master data, only the user's Valid To date is modified.

  If you specify a Valid To date that is prior to the last logon date, the Valid To date is automatically set to the last logon date. You cannot retire a user who was active after the date on which the user was supposed to be retired.

3. Click **OK** to confirm the overwrite action. The license type in the Process Recommendations Offline report is changed to the value you specified.

Selecting Processed Rows for Committing

The **Select** button enables you to quickly select all users who have been processed. You can then commit the changes for these users to the SAP database without having to manually select them in the report.

Task: ***To select all users that have been processed:***

1. Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256) and process the recommendations.

2. Click **Select**. All users that have been processed are selected in the report.

You can now commit the changes for these users to the SAP database. For more information, see Committing License-Type Changes on page 263.

Resetting Recommendations

You can undo any processing action that was not committed to the SAP database. The **Reset** button enables you to change a license recommendation to the status that is currently saved in the 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.

Task: ***To reset a recommendation:***

1. Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), and select the recommendation that you want to reset.

2. Click **Reset**. The recommendation is reset to the status that is currently saved in the SAP database.

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 master records in the SAP database.

Task: ***To commit license-type changes to the user master records in SAP:***

1. Run a Process Recommendations Offline report (see Creating a Process Recommendations Offline Report on page 256), and process the license-type recommendations.

2. Select the user or users whose master records should be updated and click **Commit**. The user master data in the SAP database is changed accordingly.

Executing Package Measurements on Offline Systems

Unlike measuring online systems, when you run a package measurement on an offline system, there is no need to initiate the measurement in the SAP Admin module.

As a precondition to measuring packages on offline systems, the FlexNet Manager for SAP Applications Satellite transport must have been installed on the relevant offline system. The Satellite transport identifies the packages that are installed and executes the package measurement. For more information on installing the FlexNet Manager for SAP Applications Satellite transport, see the *FlexNet Manager for SAP Applications Installation Guide*.

In addition, an inventory beacon must be installed on a system that is connected to the offline system. The inventory beacon executes the SAP Inventory Agent which collects the package measurement data. The data can then be imported into FlexNet Manager Suite for analysis.

For more information on collecting data using an inventory beacon, see Collecting Data from Offline Systems on page 249.

Functionality & Workflow

The workflow of measuring the packages on offline systems usually comprises the following steps:

1. FlexNet Manager for SAP Applications automatically identifies the packages that are installed on the offline system.

2. You define which packages should be measured, and when the measurement should be executed.

   For more information, see Creating and Executing a Measurement Job on page 264.

3. FlexNet Manager for SAP Applications executes the measurement at the specified date and time, and stores the results in a table.

4. The inventory beacon runs the SAP Inventory Agent which exports the measurement data into an inventory file (also called an intermediate data package). The inventory file is then uploaded for analysis into FlexNet Manager Suite.

   For more information, see Collecting Data from Offline Systems on page 249.

Creating and Executing a Measurement Job

You can schedule package measurements on offline 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.

Preconditions

The following preconditions apply for creating and executing package measurements:

- A user who wants to define package measurement jobs in an offline system requires an account of type Dialog and should be assigned the role /LICMAN/MASTER_ALL.

- The FlexNet Manager for SAP Applications Satellite transport must have been installed on the offline system.

- An inventory beacon must be installed on a system with connection to the offline system.

Procedure

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.

The entry screen for executing package measurements on offline systems displays information on previous package measurements for this offline system:

Table 14-2 • Information on previous package measurements on the **Recommendation Processing and Package Measurements** entry page

Field	Description
Last Measured	The date on which the last package measurement was executed on this offline system.
Succeeded	The number of successful package measurements that were executed for this offline system.
Failed	The number of failed package measurements that were executed for this offline 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 offline system.
Scope	The number of packages that are to be measured in the next measurement.

Task: ***To schedule and execute a package measurement on an offline system:***

1. Use the transaction /LICMAN/OFFLINE to start the offline functionality.

2. In the **Recommendation Processing and Package Measurement** 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 the inventory beacon by running the SAP Inventory Agent. For more information, see Collecting Data from Offline Systems on page 249.

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Performing an SAP Package Analysis

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. 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.

SAP packages were formerly known as SAP Engines. This terminology may be more familiar to long-time SAP users.

Displaying Packages of Installed Systems

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.

Note • *If the system has been newly set up, you first need to import the master data of the packages to the SAP Admin module to view which packages are present. To import the master data, follow the procedure described below. An RFC connection is automatically established and relevant data is imported. You can delete the master data by clicking the **Delete Master Data** button.*

Task: **To import the master 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 master data. Then click the **Execute** button or press **F8**.

4. Click the **Import Master Data** button.

5. In the **Restrict Value Range** dialog, double-click the system from which you want to import master 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.

Task: ***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**.

Measuring Packages

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.

To ensure that the overall license position is as accurate as possible, it is recommended to measure all SAP systems at a similar time.

Selecting Packages for Measurement

You need to include packages in order to be able to measure them. Excluded packages are not measured. Before including packages, follow the procedures described under Displaying Packages of Installed Systems on page 267.

Including Packages in Measurement

Task: ***To include packages for 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 include for measurement and click the **Measure Package** button.

The check box in the **Flag Measure Package** column shows a check mark if the corresponding package has been selected for measurement.

Excluding Packages From Measurement

Task: ***To exclude packages from 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 exclude from measurement and click the **No Measurement for Package** button.

The check box in the **Flag Measure Package** column shows no check mark if the corresponding package has been excluded from measurement.

Executing the Package Measurement

With FlexNet Manager for SAP Applications, you can continually run (simulate) the measurement of the packages without triggering the USMM itself. This 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.

Before measuring packages, follow the procedures described under

Task: ***To measure packages and display detailed 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**.

4.   In the **Package Analysis – Display** screen, using the **Measure Package** column, select the packages you want to measure and click **Start Measurement**.

You can select multiple packages for measurement by selecting the relevant rows and clicking **Check Selections**. To cancel the selection, select the relevant rows and click **Uncheck Selections**.

You can save which packages should be measured. To do so, click **Save**. If you do not save the selection and leave this screen, your selection is not remembered when you leave this screen and return to it later.

5.   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.

- ● **Grey**—The package has not been measured, or the measurement result was zero.

6. When the measurement results are available (**Green** status), you can view them in detail by selecting the respective package and clicking the **Display Measurement Results** button.

7. The **Display Results** screen displays a list with information on all package units. The **Number** column shows how many objects (master 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.

Note • If no measurement data is available, the status is **Grey**. You can refresh the **Package Analysis** screen by clicking the **Refresh Measurement Results** button. A **Green** status indicates that measurement results are available.

Setting Package Usage Alerts

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. If an alarm is triggered, an email containing the appropriate information is sent to the email address 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**.

The procedure for setting up package usage alerts usually consists of the following steps:

1. Measure a package to show package units (see Executing the Package Measurement on page 269).

2. Activate the alerts for package units and enter an email address.

3. Set the parameters for the alert.

4. Schedule a regular report.

Important • To activate the monitoring, the report "Alert Email for Consumption by Package" (available under **Packages Usage Alert**) needs to be run and/or scheduled.

Task: **To set up alerts for package units:**

1. Measure the package for which you want to set an alert by following step 1 through step 4 described under Executing the Package Measurement on page 269.

2. When the measurement is finished and results are available, select the package and click the **Display Measurement Results** button.

3. In the **Display Results** screen, select the units for which you want to set an alert and click **Activate Alert**.

4. 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.

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Task: ***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. When you activate this feature, a log is displayed, but no email is sent when an alert is triggered.

5. Click **Execute** or press **F8** to confirm and to display the log.

For scheduling package measurement reports, use the standard SAP function by clicking **Program** in the Menu bar and selecting **Execute in Background**.

Displaying All Packages of the System Landscape

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 grey, indicating that no measurement results are available (the measurement result was zero).

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 the Package Measurement on page 269. If the Package Analysis report produced a yellow status (package is currently being measured) or red status (measurement failed), the status displayed in the Package Analysis Overview report will be grey.

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Task: ***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.

3. In the **Package Analysis Overview** screen, the **System** field has automatically been populated with the system names that you selected in step 1. Run the report by clicking **Execute** or pressing **F8**.

4. 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.

5. 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.

6. 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.
Start Date	The date when usage started.
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

The XI Adapter Data Volume report (available from the **Packages** menu) 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 a 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 a 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.

Note • *To be able to use this feature, the XI system must be integrated into the system landscape.*

Task: ***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.)
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 narrow down the report to specific sender communication parties (optional).
Service (Sender)	Use this field to narrow down the report to specific sender services (optional).

Option	Description
Interface Name (Sender)	Use this field to narrow down the report to specific sender interface names (optional).
Interface Namespace (Sender)	Use this field to narrow down the report to specific sender interface namespaces (optional).
Communication Party (Receiver)	Use this field to narrow down the report to specific receiver communication parties (optional).
Service (Receiver)	Use this field to narrow down the report to specific receiver services (optional).
Interface Name (Receiver)	Use this field to narrow down the report to specific receiver interface names (optional).
Interface Namespace (Receiver)	Use this field to narrow down the report to specific receiver interface namespaces (optional).

4. Start the evaluation by clicking **Execute** or pressing **F8**.

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.

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Running 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.

Activity checks can be run only for online systems; they cannot be run against offline systems.

Defining and Executing Activity Checks

Task: **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.)

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.

Option	Description
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.

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 view the results for activity checks that have been executed.

Task: **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.

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Executing the LAW Measurement

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.

2. Running the measurement program (standard SAP transaction USMM).

3. Consolidating the USMM results in the LAW and send the output to SAP, if desired.

4. Uploading the LAW results into FlexNet Manager for SAP Applications for evaluation.

The following paragraphs provide information about the steps 2 to 4 above. (For more detailed information about step 1, refer to chapter Initial Optimization on page 122, and Regular Optimization of the License Position in FlexNet Manager Suite on page 133.)

Running the Measurement Program

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, 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 log on 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 of FlexNet Manager for SAP Applications (see User Data Validation on page 122). 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.

During the SAP measurement, a number of activity checks are run to find potential fraudulent activities. Refer to chapter Running Activity Checks on page 275 for more information.

Task: ***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**.

3. To view specific system data, click the appropriate button:

   - To display the license types of the selected systems, click the **License Types** button.

   - To display all clients of the selected systems, click the **Clients** button. 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 the **Prices** button.

4. Select the systems that you want to measure from the list and click **Start Measurement** to start the measurement. This triggers the transaction USMM.

5. 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.

Tip • *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.*

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.

Task: ***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.)

Displaying the LAW Measurement Results

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 the **Export** button.

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.

Task: ***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 the **Continue** button.

After you have loaded the LAW measurement results into FlexNet Manager for SAP Applications, you can display them using the tabs in the **LAW Measurement History** screen.

Table 17-1 • **LAW Measurement History** tabs

Tab	Description
LAW Measurements	Contains a list of all system measurements that have been loaded into FlexNet Manager for SAP Applications. Select a measurement row to display more detailed information on the consolidation using the other tabs on the screen.
	The **Release** column indicates whether the data has been released to FlexNet Manager Suite.
LAW User System/ Client	Displays all single records with system data of a consolidated user for the measurement that is selected on the **LAW Measurements** tab. Records with the **Green** status have been incorporated into the consolidated list, unlike the entries with the status ###.
	The **Red** status indicates that errors occurred during the consolidation. For example, a user in two systems is not allowed to have two different special versions.
LAW User Consolidated	Shows the consolidated LAW result for the measurement that is selected on the **LAW Measurements** tab. Each entry can comprise several users in different systems. During the consolidation, the user with the most expensive license type is identified. If the user has the same license type on several systems, the license type of the system that ranks highest in alphabetical order is displayed.
LAW Detail System/ Client	Displays the results on client level for the measurement that is selected on the **LAW Measurements** tab.
LAW Packages System/ Client	Displays the client-specific results of the packages measurement for the measurement that is selected on the **LAW Measurements** tab.

Task:　　　**To delete a LAW measurement:**

1. In the SAP Admin module, click **Measurement/LAW**, then select **LAW Result Lists** from the menu.

2. On the **LAW Measurements** tab, select the measurements that you want to delete. Click the icon 📋 on the right side of the **FlexNet Manager** button and select **Delete Selected Measurements**.

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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 Displaying the LAW Measurement Results on page 280). Also, verify that the corresponding contract information has been properly maintained (see Maintaining SAP License Contract Information in the SAP Admin Module on page 87 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. As a prerequisite, the relevant license contract information must be provided beforehand in the Customizing section, and the LAW measurement data that is to be analyzed has to be uploaded into FlexNet Manager for SAP Applications. (See Maintaining SAP License Contract Information in the SAP Admin Module on page 87 and Displaying the LAW Measurement Results on page 280 for more information.)

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.

Task: ***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.

4. Click **Execute** or press **F8** to run the analysis.

Table 18-1 • 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	Shows the name of the license type, for example Professional User.
License Type	Shows the number of the license type, for example 52.
Special 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.
Sum Number of Licenses	Shows the total number of licenses of a particular type, per the license contract.
Sum Number Used	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. As a prerequisite, the relevant license contract information needs to be provided beforehand using functionality available from the Customizing menu, and the LAW measurement data that is to be analyzed has to be uploaded into FlexNet Manager for SAP Applications. (See Maintaining SAP License Contract Information in the SAP Admin Module on page 87 and Displaying the LAW Measurement Results on page 280 for more information.) The report can be displayed as an ALV grid list or as a graphic by SAP Business Graphics.

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Task: ***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. Make your selection under **Selection for License Evaluation**. 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.

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**.

If you chose to display the results in an ALV grid list, you can find more information on the individual columns in the following table.

Table 18-2 • License Analysis report—ALV grid list

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.
Client	Shows the client that was evaluated.

Table 18-2 • License Analysis report—ALV grid list

Column	Description
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 evaluates the utilization of the SAP license contracts. It is similar to the Management Summary report, but provides more options for a more differentiated approach.

As a prerequisite, the relevant license contract information needs to be provided beforehand in the Customizing section, and the LAW measurement data that is to be analyzed has to be uploaded into FlexNet Manager for SAP Applications. (See Maintaining SAP License Contract Information in the SAP Admin Module on page 87 and Displaying the LAW Measurement Results on page 280 for more information.) The report can be displayed as an ALV grid list or as a graphic by SAP Business Graphics.

Task: ***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. Make your selection under **Selection for License Evaluation**. If you leave a field blank, all relevant available data will be evaluated.

   - **Description**—Select the LAW measurement data that the report should be based on. (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**.

Refer to the following tables for information regarding the data provided in the reports depending on the selected evaluation type.

Table 18-3 • Contract Utilization Analysis report—License Analysis (Variance) option

Column	Description
Target/Actual	Shows whether the row contains the number of licenses stated in the corresponding contract (Target) or the number of licenses that are in use (Actual).
License 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 (Target) or the number of licenses that are in use (Actual).

Table 18-4 • Contract Utilization Analysis report—License Usage Contract Total option

Column	Description
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.
License 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.

Table 18-5 • Contract Utilization Analysis report—Contract Utilization option

Column	Description
SAP Contract	Shows the name of the relevant SAP contract.
Measurement Date	Shows the date of the measurement on which the statistical evaluation is based.
License 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.

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SAP Enterprise Portal Access using the SAP Admin Module

FlexNet Manager for SAP Applications provides the ability to load user master data and statistical data from an SAP enterprise portal (and from any SAP system running a Java stack). The statistical data (consumption data) are read from the CCMS that, in turn, reads the data from the SAP enterprise portal system. This data enables you to see the ways in which a particular user has been active in the system. You can display the statistical data using the **Display Data** option or the SAP transaction ST03G.

The SAP enterprise portal needs to be set up properly in the system landscape of the SAP Admin module. For more information, see Providing Details for SAP Enterprise Portal Systems or Java Systems on page 87.

FlexNet Manager for SAP Applications reads the user master data directly from the SAP enterprise portal system that is connected via an RFC connection. The user master data is stored in a table in the SAP Admin module. This table is updated each time data is loaded.

The SAP enterprise portal functionality provides three options for loading and displaying SAP enterprise portal data. These options are available in the **Portal** menu in the SAP Admin module.

- The **Load CCMS Data** option reads the statistical data in the SAP enterprise portal; for example the user-related activities, including which applications the user used. To use this feature, you need to specify the CCMS when you insert a portal system. For more information, see Adding an SAP System on page 42.

- Use the **Load Portal User** option to read the user master data in the SAP enterprise portal, including the user's name, address, telephone number, and so on.

- The **Display Portal User** option displays a report of the user data collected.

See the *FlexNet Manager for SAP Applications Installation Guide* for information about configuring the SAP enterprise portal and CEN to enable FlexNet Manager for SAP Applications to collect user master and statistical data.

Inserting an SAP Enterprise Portal System

To access SAP enterprise portal data, you must first insert a portal system into the system landscape in FlexNet Manager Suite and synchronize it with the landscape in the SAP Admin module. For more information, see Adding an SAP System on page 42 and Synchronizing a System Landscape in the SAP Admin Module with FlexNet Manager Suite on page 80.

Statistical Data

You can load statistical data from an SAP enterprise portal and display the data in the SAP Admin module.

Loading Statistical Data

To be able to display statistical data from an SAP enterprise portal, you need to import the data first.

Task: ***To load statistical data from an SAP enterprise portal:***

1. In the Main menu of the SAP Admin module, select **Portal** and then **Load CCMS Data**.

2. Specify the RFC destination of the SAP enterprise portal from which you want to load statistical data.

3. Specify the start date of the consumption period in the field **Time Period Start**.

4. Select the **Load Data** option.

5. Click **Execute** or press **F8**.

Displaying Statistical Data

You can display statistical data only after you have imported the data. For information on how to load statistical data, refer to Loading Statistical Data on page 288.

Task: ***To display statistical data from an SAP enterprise portal:***

1. In the Main menu of the SAP Admin module, select **Portal** and then **Load CCMS Data**.

2. Specify the RFC destination of the SAP enterprise portal from which you want to load statistical data.

3. Specify the start date of the consumption period in the field **Time Period Start**.

4. Select the **Display Data** option.

5. Click **Execute** or press **F8**.

The number of statistical records per month is displayed. For information about viewing detailed consumption data, refer to Displaying User Data on page 290.

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Tip • If you do not want to import the data, but only want to load it temporarily into a buffer to view it, select the ***Simulation*** *option in step 4.*

Deleting Statistical Data

Task: ***To delete statistical data from an SAP enterprise portal:***

1. In the Main menu of the SAP Admin module, select **Portal** and then **Load CCMS Data**.

2. Specify the RFC destination of the SAP enterprise portal from which you want to load statistical data.

3. Specify the start date of the consumption period in the field **Time Period Start**.

4. Select the **Delete Data** option.

5. Click **Execute** or press **F8**.

The statistical data for the selected time period is removed.

User Data

You can load user master data from an SAP enterprise portal and display the data in the SAP Admin module.

Loading User Data

Task: ***To load user data from an SAP enterprise portal:***

1. In the Main menu of the SAP Admin module, select **Portal** and then **Load Portal User**.

2. Specify the RFC destination of the SAP enterprise portal from which you want to load user data.

3. Click **Execute** or press **F8**.

Information about the imported data is displayed. For information about viewing detailed user data, refer to Displaying User Data on page 290.

Displaying User Data

Task: ***To display user data from an SAP enterprise portal:***

1. In the Main menu of the SAP Admin module, select **Portal** and then **Display Portal User**.

2. Specify the RFC destination of the SAP enterprise portal from which you want to display data. If you do not select any other options, all available user data will be displayed.

3. You can specify ranges by entering values into the fields **UID Name**, **First Name**, and **Name**. You can use wildcards (*). The fields are case sensitive.

4. Click **Execute** or press **F8**.

The report displays the user data depending on the specified parameters. An X in the **USMM** column indicates that the current measurement routine in the SAP enterprise portal would count that user. The **Flag CPU** column indicates whether consumption data is available. Consumption data is available only after importing the CCMS data. For information on how to load statistical data, refer to Loading Statistical Data on page 288. You can display consumption data, if available, by clicking the **Consumption Data** button. The **Roles** button enables you to display which roles the selected user has. Use the **Groups** button to display the groups of which the selected user is part of.

Tip • *If you do not want to import the data, but only want to load it temporarily into a buffer to view it, select the* ***Simulation*** *option in step 4.*

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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 user master data check. If you select an ID of the user exit or create a new one, a list containing the fields of the user master data is displayed in which you can enter your own conditions for deactivating the users. Conditions are added using function modules.

Task: **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. Through **Assignment**, you can assign the user exit to a different system or add an assignment.

6. When you have finished, click **Save**.

Task: *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. Make the desired changes (see step 4 under To create a user exit ID for the user data check: on page 291) and click **Save**.

Task: *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. When you have finished, click **Save**.

Task: *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**.

4. In the security prompt, click **Yes**.

Task: *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**.

3. In the security prompt, click **Yes**.

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).

Task: **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:

Name	Description
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 2.
Description	The description of the user exit that you are creating.
Destination	The RFC destination to the function module that you created in step 2.
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 Customizing (see Setting up Dialog RFC Destinations in the SAP Admin Module on page 85). In the function module, ensure that data is output for the following fields: **Unit**, **Unitname**, and **Counter**.

Task: **To create 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. Click **Insert** to add a new user exit.

3. Provide the following information:

Name	Description
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**.

Task: **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.

21

Troubleshooting Web Service Errors

Web Service Errors

When the execution of web services triggers an error in FlexNet Manager Suite, the SAP Admin module displays a standard SAP message. Some of these standard SAP messages are truncated and provide limited detail. The following table lists some of these standard SAP messages, along with possible causes and resolution suggestions. (Messages in the table are written in the way that they are displayed in the SAP Admin module.)

Table 21-1 • SAP messages that can be displayed in the SAP Admin module

SAP Message	Possible Causes	Possible Solution(s)

`SOAP:1.023 SRT: Processing error in Internet Commu`
 	
`Message no. /LICMAN/ MS_GLOBAL000`
	The FlexNet Manager Suite server is not available (for example, because it is not installed, not running, or experiencing network problems).	Ensure that the FlexNet Manager Suite server is available.

`GET_BUSINESS_SYSTEM_ERROR An error occurred when d`
 	
`Message no. /LICMAN/ MS_GLOBAL000`
	There is no logical port configured in SOAMANAGER, or the logical port is not set as the default port.	Ensure that the logical port is properly configured in SOAMANAGER, and that the logical port is set as the default port.

Table 21-1 • SAP messages that can be displayed in the SAP Admin module

SAP Message	Possible Causes	Possible Solution(s)

`SoapFaultCode:1`
 	
`Message no. /LICMAN/`
 	
`MS_GLOBAL000`
	The logical port is not correctly configured in SOAMANAGER.
	
	This could be caused by one of the following:
	
	• The option **Suppress ID Transfer** was not selected on the **Messaging** tab.
	• A SOAP action is missing on the **Operation specific** tab.
	• A SOAP action is not spelled correctly.
		Ensure that the logical port has been configured correctly.

For information on any other SoapFaultCode message that is displayed in the SAP Admin module, contact Flexera Software technical support.

For information on configuring the web service, refer to section *Configuring SAP Systems to Communicate with FlexNet Manager Suite* in the *FlexNet Manager for SAP Applications Installation Guide*.

Logging Error Details in the SAP Admin Module

When you experience an issue in the SAP Admin module, you can save the issue details in a log file. The log file contains all activities from the past three months that were performed in the SAP Admin module and in the satellite systems. The log file does not contain any sensitive data.

When you open a support case with Flexera Software technical support, attach the log file to the support case. The information in the log file helps the support team to understand the issue you experienced.

Task: ***To create a log file for the Flexera Software technical support:***

1.   In the SAP Admin module, click **Administration**, and select **Customizing**.

2.   In the **Extras** menu, click **Export Log**.

3.   Save the file in .txt format.

A

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.

The Custom rule, Duplicate User rule, and User Consolidation enable you to define the rule criteria you require. For general information on creating and managing rules, see "Custom" Rule on page 205, Duplicate User Rule on page 208, and User Consolidation on page 174.

Properties for Custom License Assignment, Duplicate User, and User Consolidation Rules

The following table lists the properties that can be used for defining the Custom rule, the Duplicate User rule, and the User Consolidation.

Table A-1 • Properties for Custom rule, Duplicate User rule, and User Consolidation UI

Property	Type	Example Value	Example Condition
UserName	string	"PatShoemaker"	UserName.ToLower() = "pshoemaker"
FirstName	string	"Pat"	FirstName.ToLower() = "pat"
LastName	string	"Shoemaker"	LastName.ToLower() = "shoemaker"
EmailAddress	string	"pshoemaker@mycompany.com"	EmailAddress.ToLower().EndsWith("@mycompany.com")
SystemID	string	"ABC-001"	SystemID.ToUpper().StartsWith("ABC")

Table A-1 • Properties for Custom rule, Duplicate User rule, and User Consolidation UI

Property	Type	Example Value	Example Condition
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 IsDeveloper = true
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 "20120628"	LastLogonDate != null AND LastLogonDate.Date == "20120628
LastLogonDateLocal	DateTime?	NULL "20120628"	LastLogonDateLocal != null AND LastLogonDateLocal.Date == "20120628
UserCreationDate	DateTime?	NULL "20120628"	UserCreationDate != null AND UserCreationDate.Date == "20120628
UserCreationDateLocal	DateTime?	NULL "20120628"	UserCreationDateLocal != null AND UserCreationDateLocal.Date == "20120628
InventoryDate	DateTime?	NULL "20120628"	InventoryDate != null AND InventoryDate.Date == "20120628

Table A-1 • Properties for Custom rule, Duplicate User rule, and User Consolidation UI

Property	Type	Example Value	Example Condition
InventoryDateLocal	DateTime?	NULL "20120628"	InventoryDateLocal != null AND InventoryDateLocal.Date == "20120628
UserGroup	string	"QA"	UserGroup = "QA"
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.

Custom Rule Methods

The following table lists the methods that can be used for defining Custom rules.

Table A-2 • Methods for Custom rules

Method	Type	Example Condition
HasMatch(string originalString, params string[] matches)	bool	HasMatch(UserName, "pshoemaker") HasMatch(UserName, "pshoemaker", "mshepherd", "rwilliams") HasMatch(EmailAddress, "*@mycompany.com")
HasUserNameMatch(string params string[] matches)	bool	HasUserNameMatch("pshoemaker", "mshepherd", "rwilliams")
HasEmailAddressMatch(string params string[] matches)	bool	HasEmailAddressMatch("*@mycompany.com")
HasRoleMatch(bool usedRolesOnly, string params string[] matches)	bool	HasRoleMatch(true, "MyRole1") **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).
HasUserGroupMatch(string params string[] matches)	bool	HasEmailAddressMatch("*@mycompany.com")
HasUserTypeMatch(string params string[] matches)	bool	HasEmailAddressMatch("*@mycompany.com")
HasCurrentLicenseTypeMatch(string params string[] matches)	bool	HasEmailAddressMatch("*@mycompany.com")
GetTransactionProfilePercentage(string profileName)	double	GetTransactionProfilePercentage("ProfessionalProfile") > 0.9
HasTransactionProfileLimitMatch(string mandatoryTransactionProfileName, string allowedTransactionProfileName, string prohibitedTransactionProfileName)	bool	HasTransactionProfileLimitMatch("MandatoryProfile", "AllowedProfile", "ProhibitedProfile")
GetTransactionProfileNumberObjectsUsed(string sapTransactionProfileName)	integer	GetTransactionProfileNumberObjectsUsed("ProfessionalProfile") > 50

Table A-2 • Methods for Custom rules

Method	Type	Example Condition
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	HasTransactionProfileMaxObjectTypesMarch("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).
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 tables list the properties and methods that can be used for defining 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.

Table A-3 • Properties for custom package formulas

Property	Type	Example Value
SystemID	string	"T7A-001"
ClientID	string	"001"

Table A-4 • 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".

Table A-4 • Methods for custom package formulas

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.

Table A-4 • Methods for custom package formulas

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".

Table A-4 • Methods for custom package formulas

Method	Type	Example condition	Note
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.
Metric(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.

Table A-4 • Methods for custom package formulas

Method	Type	Example condition	Note
Metric(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.

Table A-4 • Methods for custom package formulas

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.

B

Scheduled Tasks

This appendix describes the scheduled tasks associated with FlexNet Manager for SAP Applications, as well as the command-line ndcrproc.exe.

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.

Table B-1 provides information about its main parameters.

Table B-1 • 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 new-line 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.

Table B-1 • Parameters for ndcrproc.exe

Parameter	Description
-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.

Example

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 –7 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.

Scheduled Tasks

Throughout this section, the placeholder `Prog-Drive:` is used for the disk drive where your executables are installed (typically `C:`).

Import SAP Inventories

> **Note** • *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-premise 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

> **Note** • *The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise 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 Software 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 Platform 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
```

For more information on using ndcrproc.exe, see Common Task Utility on page 308.

Import SAP User and Activity Information

Note • The information in this section is relevant only if you are using FlexNet Manager Suite in an on-premise installation.

The **Import SAP user and activity information** scheduled task collects user data and activity data from SAP systems that were defined in SAP mode using the System Landscape Editor (for more information, see Adding an SAP System on page 42). 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
```

For more information on using ndcrproc.exe, see Common Task Utility on page 308.

To change the collection period, use the following commands.

Table B-2 • 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), SKU library, and product use rights library (PURL) from the Flexera Software 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 article Q207919, *Manual PURL Download & Importer instructions for FNMP 9.0 and above*, in the Flexera Software 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
```

For more information on using ndcrproc.exe, see Common Task Utility on page 308.

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
```

C

Tables Read and Data Collected by the SAP Inventory Agent

This appendix describes which data is collected by the SAP Inventory Agent.

Table C-1 • System information

Table Name	Field Name	Definition
TUCON	SYM_GRP	Group for measurement data
TUCON	SYM_KEY	Key for measurement data
TUCON	SYM_VAL	Value for measurement data
TUPL	DEFLT_UTYP	ID for the user types of the SAP system
TUPL	ACTIVE	General flag
T000	CCCATEGORY	Role of client (production, test, ...)

Table C-2 • Active servers

Table Name	Field Name	Definition
DD03L	HOST	Host used for collecting consumption data
DD03L	INSTSHORT	Instance used for collecting consumption data

Table C-3 • Programs, jobs and transaction codes

Table Name	Field Name	Definition
TRDIR	NAME	ABAP program name
TBTCP	JOBNAME	Background job name

Table C-3 • Programs, jobs and transaction codes

Table Name	Field Name	Definition
TBTCP	PROGNAME	Program name within a step (e.g. report)
TSTC	PGMNA	Program name
TSTC	TCODE	Transaction code

Table C-4 • Languages

Table Name	Field Name	Definition
T002	SPRAS	Language key
T002	LAISO	Language key according to ISO 639

Table C-5 • Users

Table Name	Field Name	Definition
USR02	BNAME	User name in user master record
USR02	GLTGV	User valid from date
USR02	GLTGB	User valid to date
USR02	USTYP	User type
USR02	TRDAT	Last logon date
USR02	LTIME	Last logon time
USR02	CLASS	User group in user master maintenance
USR02	ERDAT	Creation date of the user master record
USR02	ACCNT	Account ID
USR02	UFLAG	User lock status
USR06	BNAME	User name in user master record
USR06	LIC_TYPE	ID for the user types of the SAP system
USR06	VONDAT	Substitute "from date"
USR06	BISDAT	Substitute "to date"

Table C-5 • Users

Table Name	Field Name	Definition
USR06	SURCHARGE	System measurement: country surcharge (3 characters)
USR06	SPRAS	Assignment to special version
USR06	MANDT2	Client
USR06	SYSID	Name of the SAP system
USR06	ANAME	Chargeable user
USR21	BNAME	User name in user master record
USR21	ADDRNUMBER	Address number
USR21	PERSNUMBER	Person number
USR21	KOSTL	Cost Centre
ADR6	ADDRNUMBER	Address number
ADR6	PERSNUMBER	Person number
ADR6	SMTP_ADDR	Email address
ADRP	PERSNUMBER	Person number
ADRP	NAME_FIRST	First name
ADRP	NAME_LAST	Last name
ADRC	ADDRNUMBER	Address number
ADRC	NAME1	Company name 1
ADRC	NAME2	Company name 2
V_ADDR_USR	ADDRNUMBER	Address number
V_ADDR_USR	PERSNUMBER	Person number
V_ADDR_USR	DEPARTMENT	Department
V_ADDR_USR	TEL_NUMBER	First telephone number: dialling code + number
V_ADDR_USR	TEL_EXTENS	First telephone number: extension

Table C-5 • Users

Table Name	Field Name	Definition
V_ADDR_USR	FUNCTION	Function
DEVACCESS	UNAME	Developer user
USR41_MLD	BNAME	User name in user master record
USR41_MLD	CAL_YEAR	Calendar year
USR41_MLD	COUNTER	Number of concurrent logons
USR41_MLD	PEAK	Maximum number of concurrent logons

Table C-6 • License Types

Table Name	Field Name	Definition
TUTYP	LANGU	Language Key
TUTYP	USERTYP	ID for the user types of the SAP system
TUTYP	UTYPLONGTEXT	System measurement: Text of length 55 (case sensitive)
TUTYP	UTYPTEXT	Short text for user types
TUTYPA	ACTIVE	Active flag
TUTYPA	COUNTRY	Active flag
TUTYPA	SONDERVERS	Active flag
TUTYPA	SSCR_ALLOW	General flag
TUTYPA	USERTYP	ID for the user types of the SAP system
LAW_CONT	ACTION	Action for value pair
LAW_CONT	CONTAINSU	ID for the user types of the SAP system
LAW_CONT	USERTYP	ID for the user types of the SAP system
TUZUS	LANGU	Language Key
TUZUS	SONDERVERS	Assignment to special version
TUZUS	TEXTVERS	Special version

Table C-7 • Roles

Table Name	Field Name	Definition
AGR_DEFINE	AGR_NAME	Role name
AGR_FLAGS	AGR_NAME	Role name
AGR_FLAGS	FLAG_VALUE	Default license type for the role
AGR_USERS	AGR_NAME	Role name
AGR_USERS	UNAME	User name in master record
AGR_USERS	COL_FLAG	Flag: assignment from composite role
AGR_USERS	FROM_DAT	Role valid from date
AGR_USERS	TO_DAT	Role valid to date
AGR_AGRS	AGR_NAME	Composite role
AGR_AGRS	CHILD_AGR	Single role in composite role
AGR_1251	AGR_NAME	Role name
AGR_1251	HIGH	Authorization value
AGR_1251	LOW	Authorization value

Table C-8 • Packages

Table Name	Field Name	Definition
TUAPPT	SPRSL	Language key
TUAPPT	APPLIC	ID for an application for system measurement
TUAPPT	APPLICNAME	Name of an application for system measurement
TUAPP	APPLIC	ID for an application for system measurement
TUAPP	PERIOD	Type (length) of period for system measurement
TUUNTT	SPRSL	Language key
TUUNTT	UNIT	ID for a unit for system measurement
TUUNTT	UNITNAME	Name of a unit for system measurement
DD03L	FIELDNAME	Field name

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