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# FlexNet Manager for SAP Applications Sizing Guidelines

For implementations that use only SAP-related functionality

# Legal Information

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# Introduction

This document provides guidelines for sizing server hardware to be used for implementations of FlexNet Manager for SAP Applications.



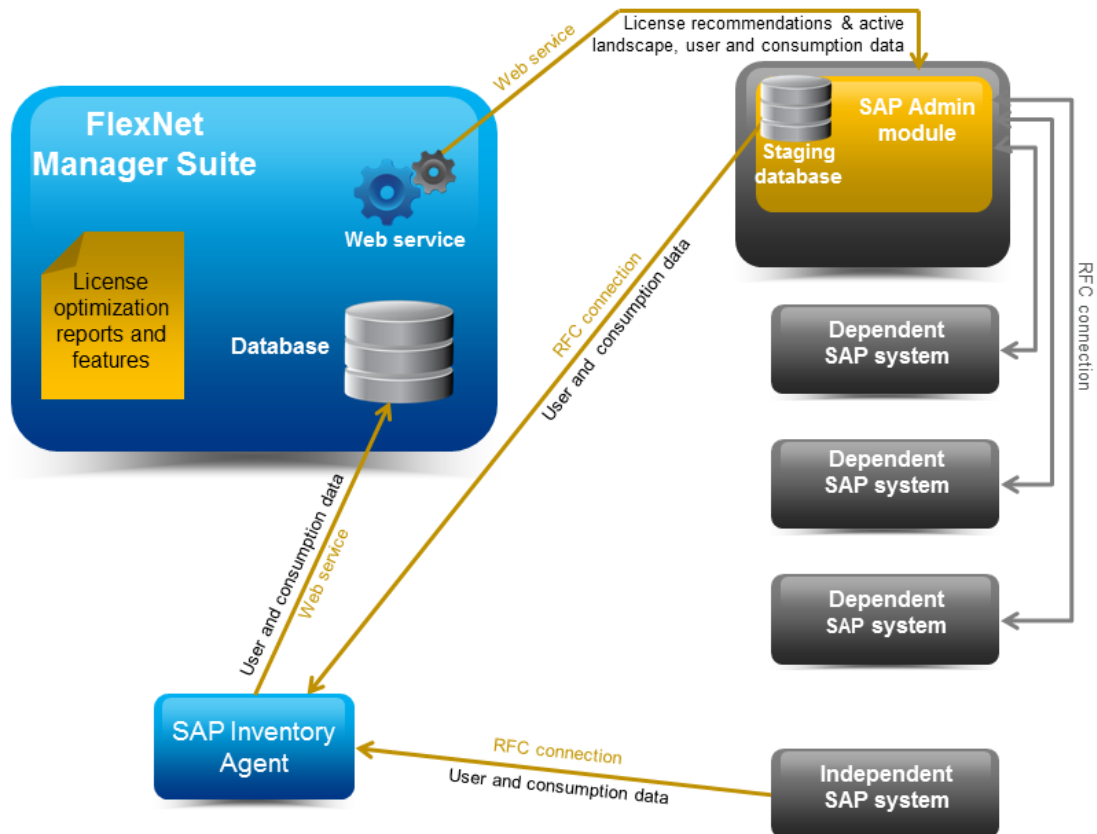
**Important** • These guidelines only apply in instances where no other functionality of FlexNet Manager Suite is used other than the SAP-related functionality. If the full functionality of FlexNet Manager Suite is used, then different sizing guidelines are available.

## FlexNet Manager Suite

FlexNet Manager Suite is a comprehensive software asset management and license compliance and license optimization solution. FlexNet Manager Platform is the foundation of FlexNet Manager Suite and provides the core SAM (Software Asset Management) functionality. Additional solutions are available for automated license optimization of, for example, IBM, Microsoft, Oracle, SAP, Symantec, and VMware software.



# Architecture of FlexNet Manager for SAP Applications



Components of a typical FlexNet Manager for SAP Applications installation:

1. FlexNet Manager Platform provides the basis for using FlexNet Manager for SAP Applications. The required hardware is a Windows server. The database server can be a separate server or the same physical server as the FlexNet Manager Platform server.
2. The SAP Admin module of FlexNet Manager for SAP Applications requires an SAP system with release 7.00 or later (minimum Basis support package 14).
3. The Satellite transport of FlexNet Manager for SAP Applications is an optional component. Release 4.6C or later is required; no sizing is necessary. The Satellite transport must be installed if any of the following statements are true:
  - You want to collect SAP package data and run activity checks and you do not want to execute the USMM to collect user data and license data.
  - You do not want to use the RFC function RFC\_READ\_TABLE or its corresponding authorization, SDTX.
  - You want to collect activity check data for a system that runs an SAP Basis release older than 7.0.

- You use a CUA central system that is not installed on the same system as the SAP Admin module.
- You want to retrieve the module hierarchy from an independent SAP system. The module hierarchy is used to provide information on modules and sub-modules in the Module Usage report. The data from the Module Usage report can be used to create transaction profiles.

If any of the above statements apply to you, the Satellite transport must be installed on all SAP systems with SAP packages, to enable the optimization of the relevant package licenses and execution of activity checks. If the Satellite transport is not used, the USMM must be executed to collect license data and user data.

## Sizing for the FlexNet Manager Suite Application Server

The FlexNet Manager Suite application server runs software that performs the following key functions:

- The SAP Inventory Agent accesses and collects the user master record information from the SAP Admin module via Remote Function Call (RFC). The SAP Admin module collects relevant data from its dependent SAP systems. This 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.
- Web services are used by the FlexNet Manager Suite remote consoles and the SAP Admin module.
- The web-based user interface of FlexNet Manager for SAP Applications provides license management and optimization capabilities.

This server should be sized based on the following guidelines. The primary parameter controlling the sizing of this server is the number of users expected to concurrently use the system (either through a remote console or the web portal) at any time.

**Table 2-1** • Sizing for the FlexNet Manager Suite application server

Resource	Recommendation	Comments
<b>Processors</b>	1 x quad-core CPU per 10 concurrent users	Up to 2 cores used by system processes, with remaining cores used to service user-driven activity.
<b>Memory</b>	8 GB	
<b>System Drive</b>	40 GB	Allow 10 GB for FlexNet Manager Suite components on top of base operating system requirements.
<b>Operating System</b>	Windows Server 2008 R2 Standard or later	

**Table 2-1** • Sizing for the FlexNet Manager Suite application server

Resource	Recommendation	Comments
<b>Other Software</b>	IIS (version as supplied with OS) Other prerequisites as per release notes	Required for web services and web portal.

## Sizing for Inventory Beacons

An inventory beacon is a computer located within your enterprise that gathers software inventory and uploads the data to FlexNet Manager Suite.

Minimum hardware requirements for an inventory beacon:

- Processors: dual-core CPU
- Memory: 8 GB
- System drive: 40 GB

## Database Server Sizing

The database server runs an instance of SQL Server to host the FlexNet Manager Suite database, the Cognos content store and the data warehouse.

The following guidelines are based on sizing a server that will not host other databases. If the planned server is expected to host databases for other products, its sizing should be increased appropriately to cope with the expected additional resource requirements of those products.

The assumption is that on average an SAP user has 30-50 rows of consumption per month (number of transactions used).

**Table 2-2** • Database server sizing

Resource	Recommendation	Comments
<b>Processors</b>	1 x quad-core CPU per 10 concurrent users	Processor resources are used to service concurrent database queries stemming from remote consoles, report generation and importing inventory data.

**Table 2-2 • Database server sizing**

Resource	Recommendation	Comments
<b>Memory</b>	2 GB per 100,000 SAP user accounts	<p>Key FlexNet Manager Suite functions whose performance may be affected by the amount of memory available to SQL Server are the inventory import, loading of data for console views, and generation of reports.</p> <p>Although it is possible for SQL Server to service all of these functions using a minimal amount of memory, memory should be sized to ensure a significant proportion of the inventory data in the FlexNet Manager Suite database and temporary database can be cached in RAM so that paging is minimized.</p>
<b>System Drive</b>	40 GB	Allow 10 GB for FlexNet Manager Suite components on top of base operating system requirements.
<b>Data Drives</b>	<p><b>FlexNet Manager Platform database data:</b></p> <p>10 GB for FlexNet Manager Suite system data plus 5 GB per 100,000 SAP user accounts</p> <p><b>FlexNet Manager Platform database logs:</b></p> <p>50 GB</p> <p><b>tempdb data:</b></p> <p>20 GB for FlexNet Manager Suite system operations, plus 5 GB per 100,000 SAP user accounts</p> <p><b>tempdb logs:</b></p> <p>20 GB for FlexNet Manager Suite system operations, plus 10 GB per 100,000 SAP user accounts</p>	<p>These estimates can be used to calculate how much disk drive space should be allocated for various files. The actual files on disk will be smaller than these figures. These metrics are calculated such that data file sizes should be up to roughly 50% of the allocated disk space, while log file sizes should be up to roughly 67% of the allocated disk space.</p> <p>The simple database recovery model should be used for the FlexNet Manager Suite database, meaning that the transaction log should only grow to not much larger than the largest single transaction. Use of the full database recovery model will result in more database log space being used than is specified here.</p> <p>See Section <a href="#">Database Disk Recommendations</a> for additional guidelines about the management of data drives.</p>
<b>Operating System</b>	Windows Server 2008 R2 SP1 Standard or later	<p>A 64-bit operating system is strongly recommended for the database server in order to get the best SQL Server performance.</p> <p>Windows Server 2008 R2 Enterprise may be typically required for larger servers with more memory.</p>

**Table 2-2 • Database server sizing**

Resource	Recommendation	Comments
<b>Other Software</b>	Microsoft SQL Server 2012 Standard Edition (64 bit) or later IIS (version as supplied with OS) Other prerequisites as per release notes	SQL Server Enterprise Edition is required if this server has more than 4 CPUs or more than 64 GB of RAM.

## Database Disk Recommendations

Careful consideration should be given to the physical disks on which database files are stored in order to maximize performance. For FlexNet Manager Suite implementations managing more than around 200,000 SAP users, data files and transaction log files should be stored on separate physical disks (or a disk subsystem that performs equivalently) to maximize overall throughput to the disk subsystem.

## FlexNet Manager Suite Database Disks

For best performance, the FlexNet Manager Suite database data and transaction log files should be placed on physically different disks.

If a storage area network (SAN) is available for storage, seriously consider using the SAN for FlexNet Manager Platform, the database data, and log files to simplify data storage administration, support disaster recovery operations, and improve reliability.

## tempdb Disks

"tempdb" is the temporary database used by Microsoft SQL Server to hold temporary data.

For best performance, the tempdb data and transaction log files should be placed on physically different disks, and not on the same disks as used by the FlexNet Manager Suite database files.

tempdb files can be placed on local disks or on a SAN.

If RAID disks are used for tempdb, RAID 1 or RAID 10 should be used. Do not use RAID 5 because the relatively slow write speed will negatively impact performance and the added reliability provided by RAID 5 is not needed.



# SAP Admin Module Sizing

Each SAP Admin module collects data from its dependent SAP systems. The collected data is stored in a staging database. The SAP Inventory Agent connects to the staging database and loads the data into the FlexNet Manager Suite database. If required, your implementation can contain several SAP Admin modules that are connected to FlexNet Manager Suite. Each SAP Admin module has its own set of dependent SAP systems.

**Table 2-3** • SAP Admin module sizing

Category	Description	Peak Memory (GB)	Disk Space (GB)
<b>Small</b>	10 systems	1.6	2.8
<b>Medium</b>	50 systems	2	14
<b>Large</b>	100 systems	4	28



**Important** • The sizing guideline is based on the estimation of 40,000 users per system and an average of 30 consumptions per user, in the last three months.

The following factors can have an effect on performance:

- The number of SAP systems
- User master data volume
- The number of SAP roles and their allocations
- SAP Consumption data volume
- The number of SAP transactions, programs and jobs
- SAP user activity data volume
- SAP Engines list and usage