



Installing FlexNet Manager Suite 2016 R1 SP1 On Premises

Legal Information

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Preparation

This document describes installation of FlexNet Manager Suite 2016 R1 SP1 on the central application server of an on-premises implementation.

 **Note:** *Managed service providers should reference the separate documentation available for multi-tenant environments.*

This document is intended for use by:

- System engineers responsible for implementing and maintaining the system
- Network and security personnel with responsibility for infrastructure that the system relies on
- Flexera Software consultants implementing your system.

Assumptions: Readers have completed at least the appropriate training course in FlexNet Manager Suite administration, and understand basic product concepts. Readers have a technical background and are experienced with product installations and configuration.

Synopsis and Server Breakdown

The major steps in the installation process are:

1. Verify all prerequisites, including the installing (administrator) account and operational services account.
2. Install all required databases.
3. Authorize the service account.
4. Install the web interface on the web application server.
5. In a medium-to-large system (collecting FlexNet inventory for 50,000 devices or more), install one or more inventory servers as required.
6. If you are implementing a large system, install a separate batch server. (The order of server installation is important.)
7. Use the provided PowerShell scripts to configure the system.
8. Product activation.

- 9. Download the current data libraries.
- 10. Optionally, install FlexNet Report Designer.
- 11. If using FlexNet Report Designer, import the latest reporting package.

Thereafter, you can use the web interface to deploy inventory beacons, and establish rules for inventory collection. At each inventory beacon, you will also need to configure the beacon and populate the password store with credentials if you are allowing direct inventory gathering.

The following table summarizes which of the tasks in the installation details (from the following chapter) apply to which servers in a multi-server implementation (servers are identified and discussed in). A blank means not required; a Y means required, and Y1, Y2, Y3 and Y4 mean required in that order. When the functionality of several of these columns is rolled up in smaller implementations, then a Y in any relevant column means to perform the task on the server covering that functionality. The breakdown of servers in the columns is:

- Web - web application server
- Batch - batch server (sometimes called a reconciliation server)
- Inv - inventory server
- App svr - the application server (when all of the above are combined on a single server, in which case a **Y** in any of the three columns means perform the task on your single server)
- DBSvr - database server
- CSvr - Cognos server, if you choose to implement trend reporting
- IB - inventory beacon.

Installation tasks (from following pages) for each type of server:

Tasks/Server:	App svr: Web	App svr: Batch	App svr: Inv	DBSvr	CSvr	IB
Admin acct	Y	Y	Y			Y
Service acct	Y	Y	Y	Y		Y
DBA acct				Y		
Configure IIS	Y	Y	Y		Y	
Disable WebDAV			Y			Y
MS ADE (for Excel imports)		Y				Y
Create databases				Y		
Authorize Service acct	Y	Y	Y			
Install web interface	Y					
Install inventory server			Y			
Install batch server		Y				
Install Report Designer					Y	

Tasks/Server:	App svr: Web	App svr: Batch	App svr: Inv	DBSvr	CSvr	IB
PowerShell configuration scripts	Y1	Y2	Y3		Y	
Product activation						
Populate libraries						
Import trend reporting package (Cognos)					Y	
Set up access rights	Y					
Deploy/configure inventory beacon(s)						Y
Populate password store						Y

The installation processes for each server are fully documented in the following sections. The table below summarizes which *custom* installation options are required for different server configurations. For each installation type, ensure that *only* the options listed are selected when you take the custom installation path.

 **Tip:** For custom installations, the batch server is called the batch scheduling server in the installer. Regardless of the name, this server includes both the batch scheduling and the batch processing functionality.

Installation type	Select these custom installation options
Single (full) application server	<ul style="list-style-type: none"> • Inventory server • Web application server • Batch scheduling server <p> Tip: This is the same configuration as if you step straight through the standard installer without taking the custom installation path.</p>
A stand-alone web application server	<ul style="list-style-type: none"> • Web application server
A processing server (combining the inventory server and the batch server)	<ul style="list-style-type: none"> • Inventory server • Batch scheduling server
A stand-alone inventory server	<ul style="list-style-type: none"> • Inventory server
The separate batch processing machine, which must use the batch scheduling server option	<ul style="list-style-type: none"> • Batch scheduling server

Prerequisites and Preparations

It is important that you work through each stage of these preparations before commencing your implementation.

Design

Your implementation may have only one central server, or it may have several. You also need to plan for inventory beacons. For details, see .

License

Locate your FlexNet license key, emailed to you from Flexera Software as part of the order confirmation process, and have it ready for use in the following process.

Microsoft Message Queuing (MSMQ)

MSMQ is fundamental to process scheduling within FlexNet Manager Suite. If it is already in use within your environment, changes are unlikely. To validate, see details in [Microsoft Message Queuing MSMQ](#).

Accounts

For installation and operation, FlexNet Manager Suite requires several different sets of account privileges. You'll find full details in .

Database instance(s)

All databases for this system require a collation sequence that is both case insensitive and accent sensitive. This means that they should be installed on one or more database instances that a default collation sequence ending with the codes `_CI_AS`. For details about checking for a collation sequence, see [Create Databases](#).

Configure IIS, .NET and WebDAV

Your implementation will fail if these configurations are not completed correctly. See details in .

Browser

When Internet Explorer is used on a server-based operating system to access FlexNet Manager Suite after setup is complete (for example, if you are testing from your central application server, or your inventory beacon has a server operating system), the IE enhanced security provisions must be turned off on that server. For details, see [Configure Internet Explorer](#). (Alternatively, use a different browser.)

Check/upgrade PowerShell

Your inventory beacons require *at least* version 3.0 of PowerShell, and where your circumstances permit, a later version is preferred. Details are in .

Configure network shares

If you are about to implement a multi-server solution (for example, separating your web application server, batch server, and inventory server), you must configure network shares accessible to all for them to access common data. The requirements and process are in . Conversely, in a single-server implementation, this is not required.

Drivers

If you will ever import spreadsheets in XLSX format, a specific driver type is required. For details, see [Drivers for Spreadsheet Imports](#).

Downloads

Log into the downloads area of the Flexera Software Customer Community, collect the latest Release Notes, and validate your topography (server by server). When your design is validated and your hardware is prepared, download the necessary software packages to commence implementation. For details, see [Download the Materials](#).

Design the Topography

Determine whether to implement a single server or multi-server solution, based on projected scaling. Please refer to the following diagram, where each blue box represents a potentially separate server, and where all are given the names referenced throughout this document.

 **Note:** Both the inventory server (or in smaller implementations the processing server, or the application server in a single-server implementation) and the inventory beacon(s) are expected to be members of Active Directory domains. (For test environments, consultants may see article 000017145 [How to run FlexNet Manager Suite processing server on a workgroup computer](#).) If you implement a multi-server solution (separating the web application server, the batch server, or the inventory server), it is strongly recommended that all are members of the same Active Directory domain.

There are six different kinds of server functionality in FlexNet Manager Suite. Your implementation may merge all this functionality onto a few servers; or for very large implementations, you may need six or more separate (virtual or physical) servers. In all cases, it is important to understand the functionality of these separate components that make up a working system:

- At least one inventory beacon, and typically more for a complex infrastructure

 **Tip:** An inventory beacon may be installed on the same server as the batch server (defined shortly). This allows for greater functionality in future custom business adapters, as on this inventory beacon alone business adapters may operate in "connected mode".

- An inventory server, which can also be duplicated across multiple servers if you are gathering FlexNet inventory for many tens of thousands of devices (see below)
- A batch server (also known as a reconciliation server) that imports third-party inventory, integrates FlexNet inventory, incorporates business-related information, and reconciles everything to calculate your license position

 **Tip:** Currently MSMQ limits the hostname of the batch server to 13 characters (excluding the domain qualifier).

- The database server (where the five underlying databases may also be split across separate database servers if required)
- The web application server that handles presentation of the interface
- A server for the business reporting option (powered by Cognos), where applicable.

 **Tip:** If the Cognos content store is installed on an SQL Server installation later than 2012, it should be run in SQL Server 2012 compatibility mode.

All system servers require a 64-bit operating system. The database server (alone) may have a 32-bit operating system, but a 64-bit operating system is recommended.

In more moderately-sized implementations (the vast majority), a typical implementation might have a separate database server and Cognos server, and combine the remaining three central functions as a single "application server", as shown in the diagram. As scaling dictates, you can combine or separate the web application server, the batch server, and the inventory server in any combination required. The logical separation of presentation from processing need not drive hardware requirements. Scaling considerations may include the following:

- Typically the first candidate for replication is the inventory beacon. This is often driven by network considerations as much as by simple scaling considerations.
- If your system manages more than 50,000 devices reporting FlexNet inventory alone (ignoring for the moment inventory through other third-party tools), the inventory server should be separated onto its own device. You can expect to duplicate a separate inventory server for (roughly) every 50,000 devices reporting FlexNet inventory.
- If you manage inventory from more than 100,000 devices, the batch server (or reconciliation server) may be separated from the web application server and installed separately.

 **Tip:** When you implement your web application server as a separate server, you must configure one or two network shares that all servers can access to share uploaded data between them. The shared drives are identified during the installation process. For details, see .

The diagram shows that:

- FlexNet inventory (from the FlexNet inventory agent) is uploaded to the inventory database by the inventory server, and then separately imported to the compliance database
- Third-party inventory imported from other tools is loaded by the batch server and stored directly in the compliance database
- Some time-based data is copied to the data warehouse database, and reports may combine trend data from here with current data from the compliance database
- Some data is copied to the snapshot database to improve presentation performance
- The web interface automatically displays a mixture of data from the snapshot database and the compliance database, as appropriate; and data manually input through the web interface is written back to the compliance database

- For performance reasons, FlexNet Report Designer is best installed on a separate server (it has high memory use requirements).

 **Note:** All servers shown inside the data center should be within a single time zone. This is particularly important if you are using FlexNet Report Designer, since the FlexNet Report Designer Operational Dashboard combines time-based data from the database server(s) and the Cognos server.

Some of the inventory adapters (such as the XenApp adapter, ADDM adapter, and HPUD adapter) require a separate staging database to allow for manipulation and normalization of data. This staging database may be installed on any convenient SQL Server, with one of the options being your central database server hosting your compliance database. Another option is to install the staging database on an appropriate inventory beacon. Decide on the location of this staging database as part of your design.

Prepare a block diagram of the actual servers for your implementation. Don't forget the inventory beacons you intend to deploy. Label each block in your diagram with:

- The server type, either 'inventory beacon' or as named in the diagram above (for ease of reference in following instructions)
- The actual server name and IP address
- Which web server will be installed on each of these hosts.

Microsoft Message Queuing MSMQ)

MSMQ is a messaging service widely available as a component of various Microsoft operating systems. It allows applications running in separate processes, even on separate servers, to enjoy failsafe communications. MSMQ is used as foundational infrastructure for the batch scheduler and batch processor on the central application server (or, in larger systems, the batch server) of FlexNet Manager Suite. Its operation is mandatory on all central servers (whether a single server, or scaled up to separate web application server, batch server, and inventory server) to allow the interactions necessary for batch processing tasks. Where the database server is separate, it is not required on the database server.

FlexNet Manager Suite makes use of the standard facilities of MSMQ, with no customization required. For example, MSMQ may make use of the following ports in operation:

- TCP: 1801, and 389 for version 3.0 and later
- RPC: 135, 2101*, 2103*, 2105* (Port 135 is queried to check availability of the remaining ports. The port numbers marked * may be incremented by 11 if the initial choices are not available when MSMQ initializes.)
- UDP: 3527, 1801.

FlexNet Manager Suite makes no special demands on, nor adjustments to, the use of ports for MSMQ, and uses whatever ports are operational. Please check Microsoft documentation for more information about when various ports are required (for example, <https://support.microsoft.com/en-us/kb/178517>).

The system requirements for integration with MSMQ are:

- In a multi-server implementation, each server must know the URL of all others (or, on a single-server implementation, localhost may be used). This is normally configured by the PowerShell configuration script, described later.

- MSMQ imposes a 13-character limit on the batch server hostname (as noted in the section on design, and elsewhere).
- A single service account should be used in common across all central servers to facilitate the operations of MSMQ. This is also noted in the following section on accounts.

Where MSMQ is already operational on your central servers, no customization is required. Where MSMQ has been disabled or removed:

- When the feature is not enabled, the PowerShell configuration script (described later) will attempt to enable the Windows feature. This requires that the installing user (see section on accounts, below) has sufficient permissions to allow this if required. It also requires that the Windows CAB files are still available to the server.
- Alternatively, if the CAB files are still in place, an administrator can manually enable the Windows feature before running (or re-running) the PowerShell configuration script.
- Where CAB files have been removed as part of server hardening for security, MSMQ must be installed following the instructions from Microsoft available through MSDN. The PowerShell scripts can be run (or re-run) thereafter.

FlexNet Manager Suite has been tested with multiple versions of MSMQ, up to and including version 6.3, which is part of Windows Server 2012 R2.

Accounts

For installation and operation, FlexNet Manager Suite requires several different sets of account privileges. While it is possible to load a single account with all these privileges, this is typically unacceptable in secure environments, which require a separation of concerns between interactive login accounts for installation and maintenance, and operational service accounts (usually with long-term and closely-guarded credentials).

The following tables list the various privilege levels, their purpose within FlexNet Manager Suite, and a suggested set of Active Directory accounts allowing for that separation of concerns. The three account types described are:

- A database administrator (typically this is an existing database administrator within your enterprise)
- An installing system administrator (account details must be made available to db-admin)
- A service account for normal operations (account details must be made available to db-admin).

 **Tip:** Where privileges are controlled by Active Directory Group Policy Objects (GPOs), ensure that the accounts and group(s) are added to the appropriate GPO settings prior to attempting installation. A suggested practice when creating the databases is to assign the installing administrator account (*fnms-admin*) and the service account (*svc-flexnet*) to an Active Directory group (suggested: *FNMS Administrators*) in order to grant them appropriate privileges; so you may choose to manage other rights through that group. Also note that these accounts and their privileges must remain active for the lifetime of the FlexNet Manager Suite environment.

Table 1: Database administration privileges — suggested AD account: db-admin

Privileges	Required on	Purpose
Database administrator, with db_owner rights on all operations databases related to FlexNet Manager Suite (compliance data, warehouse data, snapshot data, and inventory data).	Database servers	Provides the following accounts with database access rights as described.
Member of the public database role in the model database on the database server.	Database servers	Required so that the account can run scripts that check the database compatibility level.
SELECT rights to the dbo.sysjobs and dbo.sysjobsteps tables in the msdb database.	Database servers	Only required if an existing installation of FlexNet Manager Suite 2015 or earlier is being migrated to a later release.

Table 2: Installing administrator privileges — suggested AD account: fnms-admin

Privileges	Required on	Purpose
Membership in the db_owner role on all operations databases (compliance data, warehouse data, snapshot data, and inventory data).	Database server.	Post-installation, for continuing administration, this account can be reduced to the same privileges as for the service account (described below). However, the standard installation scripts set some database properties (ARITHABORT, QUOTED_IDENTIFIER) that can only be configured by an account with db_owner privileges. Therefore the installing account needs membership in the db_owner role at least temporarily during installation.
Local administrator	<ul style="list-style-type: none"> Central application server(s) (including, where separated, web application server, batch server, and inventory server); All inventory beacons. 	Installs and configures software on all servers. On inventory beacons, interactive login to the inventory beacon interface also requires local administrator privileges (that is, on inventory beacons this is an operational account as well as being required for setup).

Privileges	Required on	Purpose
Set the execution policy for, and execute, PowerShell scripts	Central application server(s) (including, where separated, web application server, batch server, and inventory server).	PowerShell scripts are used to complete the configuration of central servers during implementation. Includes an attempt to enable Microsoft Message Queuing, where this is not already enabled.
Create tasks in Windows Task Scheduler	<ul style="list-style-type: none"> Central application server(s) (including, where separated, web application server, batch server, and inventory server); All inventory beacons. 	Runs PowerShell scripts during installation that create scheduled tasks.
Internet connection to https://flexerasoftware.flexnetoperations.com	A central server (with network access to all other central application servers in a multi-server implementation).	Retrieve product downloads and licenses for implementation.
Internet connection to http://www.managesoft.com (Typically granted through membership in the FNMS Administrators security group in Active Directory.)	The batch server (or, in smaller implementations, the processing server or application server).	Maintenance or unscheduled collection of the Application Recognition Library, the SKU libraries, and the Product Use Right Libraries.

Table 3: Service account privileges — suggested AD account: svc-flexnet

Privileges	Required on	Purpose
<p>Membership in the following fixed database roles:</p> <ul style="list-style-type: none"> • db_ddladmin • db_datawriter • db_datareader. <p>In addition, the account requires you to GRANT EXECUTE permissions on all operations databases (compliance data, warehouse data, snapshot data, and inventory data).</p> <hr/> <p> Tip: <i>In less stringent environments, it may be convenient to give this account membership in the db_owner role for the operations databases, which supersedes all of the above.</i></p>	Database server	Normal operation (which includes execution of SQL stored procedures).
<p>Logon as a Service, and run all FlexNet services</p> <hr/> <p> Tip: <i>Admin access for this account is convenient, and typically granted through membership in the FNMS Administrators security group in Active Directory; otherwise read, write, and execute permissions are required on all folders containing FlexNet installations, FlexNet data, and FlexNet log files.</i></p>	<ul style="list-style-type: none"> • Central application server(s) (including, where separated, web application server, batch server, and inventory server); • All inventory beacons. 	<p>Runs all system operations, including batch services and web services.</p> <hr/> <p> Important: <i>In a multi-server implementation, the same service account must be used on all central servers, and it must be a Windows domain account. This is required for proper functioning of Microsoft Message Queueing between the servers. (A distinct service account may be used for inventory beacons.)</i></p>

Privileges	Required on	Purpose
Logon as a Batch Job	<ul style="list-style-type: none"> Central application server(s) (including, where separated, web application server, batch server, and inventory server); All inventory beacons. 	<p>When the service account runs a batch job, this setting means the login is not an interactive user.</p> <hr/> <p> Tip: This is particularly important on the batch server (for authorization details, see Authorize the Service Account).</p>
Run scheduled tasks as a service account.	<ul style="list-style-type: none"> Central application server(s) (including, where separated, web application server, batch server, and inventory server); All inventory beacons. 	Runs scheduled tasks within normal operations.
Run IIS application pools as a service account	<ul style="list-style-type: none"> Central application server(s) (including, where separated, web application server, batch server, and inventory server); Those inventory beacons that are running IIS 	Normal operations
Internet connection to http://www.managesoft.com (Typically granted through membership in the FNMS Administrators security group in Active Directory.)	The batch server (or, in smaller implementations, the processing server or application server).	Scheduled collection of the Application Recognition Library, the SKU libraries, and the Product Use Right Libraries.

 **Tip:** While the table above lists a single service account `svc-flexnet` on your application server(s) and inventory beacons, this may be adequate only in environments where security is not a significant concern. For greater security, consider a separate service account for each inventory beacon that has the permissions listed above on the inventory beacon, but no permissions on your central application server(s).

 **Note:** At implementation time, all services are configured with the correct password using the PowerShell scripts provided. If at any time the password on the service account is forced to change, the services will cease to operate. To ensure service continuity, you may either (a) allow the service account password to never expire (as normal for Windows service accounts), where permitted by your corporate policies; or (b) review the accounts listed in [Password Maintenance](#).

In addition to the three core accounts described in the table, your implementation may require additional accounts for special circumstances.

For example, if you are using adapters to connect to other systems and import data, you need appropriate accounts. For details, see documentation for the adapters you need, such as the *FlexNet Manager Suite Adapters Reference*, available through the title page of the online help after installation.

Configure .NET and IIS

ASP.NET needs patching, and IIS configuration must be modified for ASP.NET. As well, you must prevent WebDAV from blocking functionality.

Detailed steps depend on the operating system and installed software. You must repeat this process in turn on each of:

- web application server
- batch server
- inventory server
- each free-standing inventory beacon (the inventory beacon installed on your central batch server is covered by the configuration of the batch server).

 **Note:** *Inventory beacons have an additional requirement, that PowerShell is at least at version 3.0. Should you wish to upgrade PowerShell to release 4.0, Microsoft also requires Microsoft .NET Framework 4.5 on the same server. Take both these matters into account at the same time (see [Upgrade PowerShell on Inventory Beacons](#) for more details).*

(If your implementation combines multiple servers into a processing server, or into an application server, then complete the task once per server.)

 **Tip:** *Mark off each server on your block diagram as this process is completed for that device.*

To configure .NET and IIS on a server:

1. If the server is running Microsoft Windows Server 2012:
 - a. Open Windows Programs and Features.
 - b. Search the list of applications for Microsoft .NET Framework 4.5 (or later). If it is present, skip to step 4 below.
 - c. Because Microsoft .NET Framework 4.5 (or later) is not present, follow steps under "To install IIS and ASP.NET modules on Windows Server 2012 using the UI" in <http://technet.microsoft.com/en-us/library/hh831475.aspx#InstallIIS>. Thereafter, continue with step 4 below.
2. If your server is running Microsoft Windows Server 2008, the original installation was Microsoft .NET Framework 4, but it may have been upgraded already to 4.5. To check:
 - a. Open Windows Programs and Features.
 - b. Search the list of applications for Microsoft .NET Framework, and determine whether it is release 4 or release 4.5 (or later).
 - If it is 4.5 (or later), skip to step 4 below.

- If it is 4.0, continue here.
3. If necessary, upgrade Microsoft .NET Framework to version 4.5 or later.
For more details, see [https://msdn.microsoft.com/en-us/library/5a4x27ek\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/5a4x27ek(v=vs.110).aspx).
 4. Open a Command Line window on the current server (for example, **Start** > search for cmd > run cmd.exe).
 5. Change directory to the Microsoft .NET Framework installation folder.
 6. Install ASP.NET (which also registers ASP.NET with IIS when present), for example with the platform-appropriate commands:

For operating systems up to Windows Server 2008 R2, use:

```
aspnet_regiis.exe -ir -enable
```

For Windows Server 2012, use:

```
dism /online /enable-feature /featurename:IIS-ApplicationDevelopment
dism /online /enable-feature /featurename:IIS-ISAPIFilter
dism /online /enable-feature /featurename:IIS-ISAPIExtensions
dism /online /enable-feature /featurename:IIS-NetFxExtensibility45
dism /online /enable-feature /featurename:IIS-ASPNET45
```

7. Exit to close the command line window.

If you are currently working on any of:

- Your web application server
- Your batch server
- A free-standing inventory beacon that uses the FlexNet self-hosted web server (and not IIS)

loop back now and restart this process for the next server on your list. For your inventory server and any inventory beacon using IIS, continue and disable WebDAV on these devices.

 **Tip:** Although from IIS 7.0, Microsoft offered a separate download for improved WebDAV functionality, the native WebDAV functionality must also be disabled. Otherwise WebDAB intercepts HTTP processing and blocks FlexNet inventory functionality.

8. You may first check that WebDAV is installed. For example, on Windows Server 2012:
 - a. Open Server Manager (for example, **Start** > **Administrative Tools** > **Server Manager**).
 - b. Select **Dashboard**, and in the dashboard select **Add Roles and Features**.
The **Add Roles and Features Wizard** opens.
 - c. In the left-hand navigation pane, select **Installation Type**, and in the main pane, ensure that the **Role-based or feature-based installation** is selected.
 - d. Click **Next** (or select **Server Selection**), and select the server you are currently configuring.
 - e. Click **Next** (or select **Server Roles**), and in the **Roles** panel, expand **Web Server (IIS)** > **Web Server** > **Common HTTP Featured (Installed)**.

- f. Observe whether the check box for **WebDAV Publishing (Installed)** is selected.

If this check box is clear, WebDAV is not installed, and you may click **Cancel**, then close all relevant dialogs. If this is not the last server on your list, loop back and restart this process on the next server. However, if the check box is selected, WebDAV is installed and *must* be disabled.

9. Open the IIS settings page. For example:

- On Windows Server 2008 R2, open Server Manager (**Start > Administrative Tools > Server Manager**). In the hierarchy (on the left), expand **Roles**, then **Web Server (IIS)**, and select **Internet Information Services (IIS) Manager**.
- On Windows 7, navigate to **Control Panel > System and Security > Administrative Tools**, and double-click **Internet Information Services (IIS) Manager**.

10. In the work pane that opens, expand **Sites**, and select **Default Web Site**.

11. In the **Home** pane for this site, in the **IIS** group, locate **WebDAV Authoring Rules**.

 **Tip:** *If it is not present, it is likely that WebDAV is not installed on this server, and your mission is complete.*

12. Right-click the icon, and select **Open Feature**. A pane opens for **WebDAV Authoring Rules**.

13. On the right, in the **Actions** group, there is an option to enable or disable WebDAV.

- If the link currently says **Enable WebDAV**, do nothing, because your mission is complete.
- If the link current says **Disable WebDAV**, click the link.

14. Click **OK** to close all applicable dialogs.

If this is not the last server on your list, loop back and restart this process on the next server.

 **Tip:** *There is additional configuration of IIS handled by PowerShell configuration scripts described later.*

Configure Internet Explorer

Microsoft Internet Explorer needs configuration.

Compatibility mode must be turned off for FlexNet Manager Suite. In addition, when Internet Explorer is used on a server-based operating system to access FlexNet Manager Suite after setup is complete (for example, if you are testing from your central application server, or an inventory beacon has a server operating system), its enhanced security provisions must be turned off on that server, as follows. (Alternatively, use a different browser.)

 **Tip:** *Check release notes for supported versions. For example, Microsoft Internet Explorer releases up to and including release 9 are deprecated for FlexNet Manager Suite from 2016 R1.*

 **To configure Microsoft Internet Explorer:**

1. Open Internet Explorer, and navigate to:

```
res://iesetup.dll/IESecHelp.htm#overview
```

2. Follow the instructions displayed there for disabling Enhanced Security Configuration.
3. FlexNet Manager Suite attempts to advise Internet Explorer that the website should not be run in compatibility mode. You need follow these steps only if you receive an alert asking you to turn off compatibility mode:
 - a. In Internet Explorer, press the Alt key to display the Menu bar.
 - b. Click **Tools**, then **Compatibility View Settings**.
 - c. Make sure **Display all websites in Compatibility View** and **Display intranet sites in Compatibility View** are both clear.
 - d. Add websites that do require compatibility mode to the list of **Websites you've added to Compatibility View**.

There are a number of other configuration requirements for whichever web browser you choose to use:

- URLs to add to your trusted locations
- Recognition of your central server as an Intranet site, and allowing automatic logon
- Javascript must be enabled
- Cookies must be enabled
- Windows authentication must be enabled
- Font download should be enabled for optimum usability of the site
- Any company proxy servers must allow browsers to access to the web application server.

Details for each of these are included in the first topic in the online help, *Configuring Your Web Browser*, available after the product is upgraded.

Upgrade PowerShell on Inventory Beacons

PowerShell is used both as part of the installation, and for operation of inventory beacons after installation.

The minimum requirement on inventory beacons is PowerShell 3.0.

You may choose to upgrade PowerShell to version 4.0, but be aware that this release has a prerequisite of .NET Framework 4.5.



To check and optionally upgrade PowerShell on a candidate server:

1. Within Windows PowerShell, run `$PSVersionTable.PSVersion`.

This produces output similar to the following:

Major	Minor	Build	Revision
-----	-----	-----	-----
3	0	-1	-1

2. If the Major value is less than 3, download your chosen version and install it.

For example:

- For PowerShell 3.0, see <http://www.microsoft.com/en-us/download/details.aspx?id=34595>.
- For PowerShell 4.0, see <https://www.microsoft.com/en-us/download/details.aspx?id=40855>.

Configure Network Shares for Multi-Server

If you have not already done so, use Windows Explorer to configure the network share drives used by your central servers.

There are two such shares required when you install the web application server on a separate server:

- The data import directory used for handing off any content imported through the web interface of FlexNet Manager Suite (such as one-off inventory spreadsheets) to the batch server for processing (default value: %ProgramData%\Flexera Software\FlexNet Manager Platform\DataImport\). It may be on any of your central servers, as convenient in your implementation; and it may be on any drive and any file path. You must configure the share manually in Microsoft Windows.
- The parallel data export folder used to stage data for integration with other systems like FlexNet Manager for Engineering Applications. This is typically located as a peer of the above (default value: %ProgramData%\Flexera Software\FlexNet Manager Platform\DataExport\).

You may implement these shares as you see fit.

For added security, you may set up these shares so that they are available to the minimum number of accounts (rather than open to all). From the process of setting up accounts, you are already acquainted with the Active Directory security group FNMS Administrators, which minimally contains the operational service account (suggested: svc-flexnet), the installing administrator account (suggested: fnms-admin), and any accounts with interactive logins to any of your central servers. If you wish, you can restrict these network shares so that they are open only to members of FNMS Administrators, with the group providing full control for both daily operations and any required maintenance/troubleshooting.

Drivers for Spreadsheet Imports

It is quite likely that at some stage you will need to import data from spreadsheets or CSV files. For example, you may have purchase records in spreadsheets, or inventory exported from a hard-to-reach system, or you may have a record of entitlements from a reseller in a spreadsheet format. Documentation is available for these different uses, including the chapter *Importing Inventory Spreadsheets and CSV files* in the *FlexNet Manager Suite System Reference* PDF file, available through the title page of online help after installation.

You need a driver update if the following conditions apply to your future use of FlexNet Manager Suite:

- You will *import* data from spreadsheets (the export of data to spreadsheets is not relevant, and the import of data from CSV [comma-separated values] file is also not relevant)
- The spreadsheets will be Excel spreadsheets in .xlsx format (the earlier .xls format does not require the driver update; but be aware that this older format limits each spreadsheet to about 65,000 records/rows)

- You are working on the batch server (or processing server, or application server in a single server implementation); or you are working on an inventory beacon that will perform these spreadsheet imports.

In these conditions, you must install a 32-bit version of Microsoft Access Database Engine on the server. The particular release is not important: for example, Microsoft Access Database Engine 2010-32 is adequate. Drivers are supplied within the Microsoft Access Database Engine.

 **Important:** Only the 32-bit version is supported by the Business Importer mechanism, and this version is incompatible with the 64-bit version of Microsoft Office products installed on the same machine. This means that, when you need imports in .xlsx format, 64-bit Office cannot be installed on the central batch server (or application server), or on applicable inventory beacons. Naturally, Office documents including spreadsheets prepared on other machines running 64-bit Office can successfully be imported. The limitation is only on co-installation on the same computers.

Download the Materials

Position yourself on a computer that is accessible from all the central servers you will implement, and preferably at least some of your inventory beacons.

 **To download required materials:**

1. Use your browser to access the Flexera Software Customer Community.
 - a. On <https://flexeracommunity.force.com/customer/CCLanding>, use the account details emailed to you with your order confirmation from Flexera Software to log in (using the **Login** link in the top right).

 **Tip:** Access requires your Customer Community user name and password. If you do not have one, use the Request Community Access link on the login page to request one. Your credentials are configured for access to content you have licensed.

- b. Select the **Downloads** tab from the row across the top of the page.

A routing page appears to let you Access Product and License Center, displaying lists of products from Flexera Software.
 - c. In the lists of products, identify FlexNet Manager Platform, and click the **Access Above Products** button that is *below* that product name.

The Product and License Center site is displayed.
 - d. In the Your Downloads section of the Home page, click the link for [FlexNet Manager Platform](#).
 - e. In the Download Packages page, click the link for [FlexNet Manager Platform 2016 R1 SP1](#) to access the downloads. (You may need to repeat this action on a second page to access the downloadable files.)
2. Download and check the Release Notes for FlexNet Manager Suite 2016 R1 SP1, and validate your server plan (see) against the requirements for the Windows Server computer(s) you plan to use.

When your design is validated and the hardware is in place, you are ready to download the necessary files to commence your implementation,

3. Download the following archives and save to a convenient (network-accessible) location on this computer (such as C:\temp\FNMMSDownloads\). You may unzip all these archives here.
 - a. Download the installer through the [FlexNet Manager Suite 2016 R1 SP1 Installer.zip](#) link.
 - b. If your implementation design includes FlexNet Report Designer (powered by Cognos), also download Report Designer Package - Single Tenant (FlexNetManagerPlatformReportsAndDashboard.zip). This archive includes:
 - Report Designer Package - Single Tenant
 - Report Designer Installer
 - Cognos Fix Pack 4.
 - c. If you will also install the Business Adapter Studio in connected mode (that is, on a central server with direct access to your operations databases), also download Business Adapter Studio 2016 R1 SP1.zip to the same location.
 - d. If you are collecting inventory from Citrix XenApp, or from any of the other sources that require an additional adapter out of the box, also download Tier 1 Adapter Tools.zip.

2

Installation Details

Please work through the following sections *in order*. The database must be installed first, and thereafter for a multi-server installation, the order is important: the batch server/reconciliation server must be installed last in this set, as the scripts here finalize account details across all the servers:

1. The web application server
2. The inventory server(s)
3. The batch server/reconciliation server.

 **Important:** *It is critical that you have attended to all the matters raised in before attempting installation.*

Create Databases

FlexNet Manager Suite uses a number of separate databases. While scripts are provided, it is typical that these scripts will be inspected and executed by a database administrator (DBA).

 **Important:** *All database scripts use Unicode character sets to allow for necessary localization. This means that:*

- *Any FTP transfer of these files must be in binary mode (not ASCII mode)*
- *The files must be edited only in editors that support Unicode character sets.*

Failure to observe these precautions may result in failures in script operations.

Create the databases in the order shown below: first the inventory collection database, then the compliance database, and so on.

Take note of all the database names you create with the `-d` parameter in the following steps. You need the names later (if database setup is done by a separate DBA, the database names must be handed off to the installing administrator). While it is possible to create your own database names, using the default names makes it easier to follow the rest of the documented processes.

 **Tip:** *There may be several accounts needing to log in directly to the application server for tasks related to FlexNet Manager Suite, such as manipulating log files, scheduling tasks, and the like (this excludes access through the web interface, which is not relevant to this discussion.) It is often convenient for these accounts to*

have the same database permissions as the services account on all components of the operations databases: compliance data, warehouse data, snapshot data, and inventory data. A suggested method is to create either a local or Active Directory security group (such as FNMS Administrators) and add all such accounts to this group. Then you can, for example, set these permissions by opening each database in Microsoft SQL Server Management Studio, and granting the appropriate privileges to the security group. The procedures are detailed in the topics covering database creation. Accounts to list in the security group minimally include:

- The operational service account (suggested: svc-flexnet)
- The installing administrator account (suggested: fnms-admin) for post-installation on-going administration (remembering that db_owner membership is required temporarily during installation, as described in)
- Any operational account needing to log in to a central inventory beacon installed on your batch server (remember that, since the inventory beacon requires administrator privileges to run, this account is both a local administrator on the batch server and a db_owner)
- Any future back-up administrator accounts needed for the application server.

 **Note:** If your databases will run on Microsoft SQL Server 2014 or later, Flexera Software strongly recommends setting the compatibility level for each database to SQL Server 2012 (110). In native mode for 2014, the significant changes in the query optimizer may adversely affect performance.

After the first step, the rest of this procedure (creating the databases) must be completed using a database administrator account (suggestion: db-admin, and see the required privileges in).

 **Tip:** While databases are being created, you can start installing the central application servers in parallel. There are no interdependencies until you start running the PowerShell configuration scripts.

To create all required databases:

1. Create a security group (suggested: FNMS Administrators), and (optionally) add to it all accounts directly logging into the central application server (or you can add accounts later).
2. In SQL Server Management Studio, ensure that the AD security group (suggested: FNMS Administrators) has a secure login:
 - a. Under **Security > Logins**, Create a new login.

The **Select User, Service Account or Group** dialog appears.
 - b. Use the **Object Types...** button to ensure that User, Group, or Built-in security principal is selected as the object type.
 - c. Use the **Locations...** button to select your Active Directory domain.
 - d. As the object name, enter the name of your security group (suggested: FNMS Administrators), and use **Check Names** to validate that the group name is found.
 - e. Click **OK**.

The newly added group is visible under the Security > Logins node. (You will use this group after the creation of each database.)

3. Ensure that the target database instance is set for case-insensitive and accent-sensitive collations (as required by all databases in this system). To check the collation settings at the server level:
 - a. In SQL Server Management Studio, locate the SQL Server instance in the **Object Explorer** pane.
 - b. Right-click the server, and select **Properties** from the context menu.
 - c. On the server **Properties** dialog, select the **General** tab, and check the current collation sequence.

If the collation sequence includes the codes `_CI_AS` (for example, `Latin1_General_CI_AS`), you may proceed with the installation.

 **Tip:** Other suffixes like `_KS` or `_WS` are optional.

If the server's default collation does not include `_CI_AS`, you can set the collation sequence for each database, as you create it, by right-clicking the new database, selecting **Properties** from the context menu, and choosing the collation on the **Options** tab. Remember that the collation sequence must be *identical* for:

- The compliance database (suggested name: FNMSCompliance)
- The reporting snapshot database (suggested: FNMSSnapshot)
- The data warehouse database (suggested: FNMSDataWarehouse).

For example, if the first of these has the collation sequence called `Latin1_General_CI_AS`, then all of them must have the exact same collation sequence. In contrast, the inventory database, when separate (suggested: FNMSInventory), and the Cognos content store may have different collation sequences, provided that these also include the same `_CI_AS` codes. The `tempdb` database (alone) may have any collation sequence, since FlexNet Manager Suite creates the required tables here with the appropriate collation sequence.

4. Create the database for FlexNet native inventory collection.

 **Remember:** If you plan to collect both inventory data and compliance data in a single database, use the same `-d FNMSCompliance` name parameter for this and the compliance databases; or for a separate inventory database (recommended), use a different name as shown below.

 **Tip:** To avoid typos, you may want to copy all five of the following command lines into your ASCII text editor, globally search for and replace the placeholders `DBserver-name\instance name` with the name of your SQL Server and your database instance (where that is not the default instance), and then copy/paste each modified command line when required.

 **Important:** Be very careful with copy and paste. Some tools "helpfully" convert a pasted minus (dash, or hyphen) character to something else, perhaps from an extended character set. Such substitutions will cause the command line to fail.

- a. On the database server (or the application server for a single-server implementation), open a command prompt.

 **Tip:** If your console window is in **QuickEdit** mode (visible in the **Properties** for the window), simply clicking in the window when it already has focus puts it into **Mark** or **Select** mode. In such a mode, a process that is writing to the window is paused, awaiting your input. Beware of

unintentionally pausing database migration by extra clicking in this command prompt. A process that has been paused in this way is resumed when the window already has focus and you press any key.

- b. Navigate in the unzipped archive to the FlexNet Manager Suite\Database\Normal\FlexNet Manager Platform folder. (The database creation scripts can be run from a mapped network drive.)
- c. Execute the following (replacing the placeholders *DBserver-name\instance name* with the name of your SQL Server and your database instance):

 **Note:** *The command-line switches (as usual), and the WindowsNT argument, are case sensitive.*

```
mgsDatabaseCreate -a WindowsNT -s DBserver-name\instance name -d
FNMSInventory -i InventoryManagerDatabaseCreation.xml
```

Wait for completion before proceeding.

- d. Open this database in Microsoft SQL Server Management Studio, expose the Security > Users node, right-click and choose to create a new user.
 - e. In the **Database User - New** dialog, set the **User type** to SQL user with login, and enter a **User name** (for example, call it FNMS Administrators as well).
 - f. Next to the **Login name** field, click the ellipsis (...) button, and use the **Select Login** dialog to select your Active Directory security group (suggested: FNMS Administrators). Click **OK** to close both dialogs.
-
- g. For your newly-added user, right-click and select the properties, and select the Membership page. Check the db_owner role, and click **OK**.
 - h. Strongly recommended for SQL Server 2014 or later: Set the compatibility level on this database to SQL Server 2012 (110).
5. Create the operations database for compliance data (a two-part creation process):

- a. Still in the Command Prompt window on the database server, using the administrative account (db-admin), and in the same folder of the unzipped archive, execute the following (replacing the placeholders *DBserver-name\instance name* with the name of your SQL Server and your database instance, and paying attention to case sensitivity):

```
mgsDatabaseCreate -a WindowsNT -s DBserver-name\instance name -d
FNMSCompliance -i ManageSoftDatabaseCreation.xml
```

(and wait for completion).

- b. Execute:

```
mgsDatabaseCreate -a WindowsNT -s DBserver-name\instance name -d
FNMSCompliance -i ComplianceDatabaseCreation.xml
```

- c. Repeat the steps outlined for the inventory database to grant db_owner privileges to the security group (suggested: FNMS Administrators).
 - d. Strongly recommended for SQL Server 2014 or later: Set the compatibility level on this database to SQL Server 2012 (110).
6. Create a data warehouse database (used for trend analysis, some product reports, and Cognos-based reporting):
 - a. In the same archive folder, execute:


```
mgsDatabaseCreate -a WindowsNT -s DBserver-name\instance name -d
FNMSDataWarehouse -i DataWarehouseCreation.xml
```
 - b. Repeat the steps outlined for the previous databases to grant db_owner privileges to the security group (suggested: FNMS Administrators).
 - c. Strongly recommended for SQL Server 2014 or later: Set the compatibility level on this database to SQL Server 2012 (110).
7. Create a snapshot database (used for performance optimization):
 - a. In the same archive folder, execute:


```
mgsDatabaseCreate -a WindowsNT -s DBserver-name\instance name -d
FNMSSnapshot -i SnapshotDatabaseCreation.xml
```
 - b. Repeat the steps outlined for the previous databases to grant db_owner privileges to the security group (suggested: FNMS Administrators).
 - c. Strongly recommended for SQL Server 2014 or later: Set the compatibility level on this database to SQL Server 2012 (110).
8. Check all database log files for any errors before proceeding with any installation of FlexNet Manager Suite software.
9. Close the command window.
10. If you are also implementing FlexNet Report Designer, you need to create the content store database. The content store is a Microsoft SQL Server database used to store information about reporting models, folders, reports, and saved results, which are required by FlexNet Report Designer. Frequently, this database is installed separately from the other databases, so that it can be configured differently as described below. If your content store is on a separate database server, ensure that (like all the other databases for this system) it uses a case insensitive, accent sensitive collation sequence. If required, create the content store database now:
 - a. Open SQL Server Configuration Manager, expand **SQL Server Network Configuration**, select **Protocols for MSSQLSERVER**, and ensure that **TCP/IP** is Enabled, as required by Cognos to access the data it needs to populate reports.
 - b. Open the Microsoft SQL Server Management Studio, and:
 - In the **Object Explorer** panel, right-click the parent database server.

- Select **Properties** from the context menu.
 - In the **Server Properties** dialog, select the **Security** page.
 - Ensure that the **Server authentication** is set to **SQL Server and Windows Authentication mode**, as required by Cognos.
 - Close the **Server Properties** dialog.
- c. Again in the **Object Explorer** panel, expand the **Security** folder (first-level child of the top SQL Server node), right-click **Logins** and select **New Login...**
- d. Specify the login name for Report Designer to access the content store.
- Suggestion: FlexNetReportDesigner. This account needs the following permissions on the Cognos content store database:
- Create and Drop table privileges
 - Member of the db_ddladmin, db_datareader, and db_datawriter roles
 - Must be the owner of the default schema on this database.
- e. Select **SQL Server authentication** and enter the appropriate password in the **Password** and **Confirm password** fields.

 **Note:** The password for the SQL Server login account used by Report Designer must not contain any of the greater-than, less-than, or ampersand characters (< > &).

- f. Clear **Enforce password policy**.
- While saving the password, this clears all three password policy check boxes.
- g. Click **OK**.
- h. Again in the **Object Explorer** panel, right-click **Databases** and select **New Database...**
- i. On the **Options** page of the **New Database** dialog, ensure that the selected **Collation** ends in **CI_AS** (for example, Latin1_General_CI_AS).
- j. On the **General** page, provide an appropriate name for your database (such as contentstore).
- k. Configure the initial database settings (file size, location, and the like) as appropriate.
- This database is typically very small, in the order of 12 MB, with potential growth depending on how many reports you store.
- l. Click **OK** to create the database.
- m. In the **Object Explorer** panel, expand **Databases**, expand the contentstore database, then expand its **Security** folder, right-click **Schemas** and select **New Schema...**
- n. Specify the **Schema name**, and click **OK**.
- Suggestion: FlexNetReportDesignerSchema
- o. With the same contentstore database selected, under its **Security** folder, right-click **Users** and select **New User...**

- p. For SQL Server 2012 and later, from the **User type** drop-down list, select SQL user with login.
- q. Specify a name for the database user in the **User name** field.
- r. Use the **Login name** field to browse and select the account that you created in step 10.c above.
- s. Use the **Default schema** field to browse and select the schema that you created in step 10.n.
- t. In the **Owned Schemas** list, select the same schema as specified in **Default schema**.
- u. In the **Membership** list (called **Role Members** for SQL Server 2008 R2 and earlier), select db_datareader, db_datawriter, and db_ddladmin.
- v. Click **OK**.

Finally, if you have not already done so, don't forget to add the necessary accounts, including the operational service account (suggested: svc-flexnet) and the installing administrator account (suggested: fnms-admin), to the FNMS Administrators security group.

Authorize the Service Account

The account used to run processing services requires permission to run as a service. Prior to installing anything, perform this process on:

- Your batch server/reconciliation server (in a large-scale implementation with three servers)
- Your processing server (in a two server application implementation)
- Your application server (in a single server implementation).



To authorize the service account:

1. On the appropriate server, log in as an administrator (suggested: fnms-admin).
2. Go to:
 - On Windows Server 2012, **Start > Administrative Tools > Local Security Policy**
 - On earlier releases of Windows Server, **Start > All Programs > Administrative Tools > Local Security Policy**.
3. Select the **Local Policies** node, and choose **User Rights Assignment**.
4. Open the policy Log on as a service, and add the service account (example: svc-flexnet).
5. Open the policy Log on as a batch job, and add the service account (example: svc-flexnet).
6. Click **OK**.



Tip: A Microsoft error dialog *Security Templates - An extended error has occurred. Failed to save Local Policy Database. may appear. This error is described at <http://support.microsoft.com/kb/2411938>, and may safely be ignored.*

Install the Web Interface

The web interface provides the user interface to manage your inventory and license position. Continue this process as administrator (fnms-admin) on either your

- application server (for a single server installation) or
- web application server (in a multi-server installation).

To install the web interface for FlexNet Manager Suite:

1. On the (web) application server, open Windows Explorer.
2. Copy the downloaded archive FlexNet Manager Suite 2016 R1 SP1 Installer.zip from your staging location to a convenient location on this server (such as C:\temp), and unzip it.

 **Tip:** *Unzipping the archive locally on each of your servers simplifies running the configuration scripts later in the process. After running the installers, PowerShell scripts need to be Run as Administrator. Notice that the entire archive must be present, as scripts reference other elements from the archive.*

3. Navigate in the unzipped archive to the FlexNet Manager Suite\Installers\FlexNet Manager Suite folder.
4. Start (double-click) setup.exe.

 **Tip:** *You must start the installation by running setup.exe, rather than running the MSI by any other means. The setup file also installs Visual C++ 2010 Redistributable (if it is not already present), which is a prerequisite for integration with FlexNet Manager for SAP Applications.*

5. Step through the installer until asked for the **Setup Type**, and do one of the following:
 - For a small, single server installation combining the web application, the inventory collection, and the batch processing functionality in one server, select the **Complete** option, and follow the instructions in the installation wizard to complete the standard installation.

 **Tip:** *In the page where you are asked for the batch process credentials, for **Server type**, choose either **Production** for your main server installation, or **Failover** if this is a stand-by or testing server. On your **Production** server, the batch scheduler and batch processor are automatically started as part of the installation process, while on a **Failover** server, both are disabled by default. If you need to switch between your production and stand-by servers, you must manually:*

- *Disable the batch scheduler and processor on the product batch server*
- *Enable the batch scheduler and processor on the standby batch server.*

*These adjustments are made in the **Microsoft Services** control panel.*

- For a multi-server installation, select the **Custom** installation path, and select the **Web application server** for this installation. (If this is the *only* functionality on this server, also ensure that **Inventory server**, **Batch scheduling server**, and **Batch server** are all deselected; but in fact you can combine most servers in the way that best suits your enterprise, so make the selection that matches your server plan.)

Take note of the installation location for future reference.

6. If this is a separate installation of the web application server in a multi-server implementation, ensure that from this server you can access the network shares that you configured in [Configure Network Shares for Multi-Server](#).
7. If this server includes the batch server functionality, you are prompted for the credentials used for batch processes. Be sure that the account you enter already has Logon as a service permission (see [Authorize the Service Account](#)).
8. When successful, close the installation wizard.

Install the Inventory Server

The inventory server processes all inventory collected (or augmented) by the FlexNet inventory agent.

In a single server implementation, this step is already completed and you should skip ahead to [Configure the System](#).

For a multi-server implementation, continue this process as administrator (fnms-admin) on either your

- processing server (in a two server application installation)
- inventory server (in a three or more server application installation).

To install the inventory server software:

1. On the inventory (or processing) server, open Windows Explorer.
2. Copy the downloaded archive FlexNet Manager Suite 2016 R1 SP1 Installer.zip from your staging location to a convenient location on this server (such as C:\temp), and unzip it.
3. Navigate in the unzipped archive to the FlexNet Manager Suite\Installers\FlexNet Manager Suite folder.
4. Start (double-click) setup.exe.

 **Tip:** You must start the installation by running *setup.exe*, rather than running the MSI by any other means. The setup file also installs Visual C++ 2010 Redistributable (if it is not already present), which is a prerequisite for integration with FlexNet Manager for SAP Applications.

5. Select the **Custom** installation path, and do one of the following:
 - For a two server installation, now installing your processing server, select all of the **Inventory server** and the **Batch scheduling server** for this installation, and ensure that the **Web application server** is deselected (displaying a cross).
 - For an installation using three or more servers, now separately installing your inventory server, select only the **Inventory server** for this installation, ensuring that the other options are deselected.

Take note of the installation location for future reference.

6. If this server includes the batch server functionality, you are prompted for the credentials used for batch processes. Be sure that the account you enter already has Logon as a service permission (see [Authorize the Service Account](#)).
7. When successful, close the installation wizard.

Install the Batch Server

The batch server is the integration point that correlates all your entitlement records and your consumption revealed in inventory to work out your reconciled license position.

You do *not* need this process if you have either of:

- A single-server implementation combining the web application server, the batch server, and the inventory server in one; or
- A two-server application implementation where you have combined the batch server and inventory server functionality on one computer and kept the web application server as a second server.

In these two cases, this step is already completed and you should skip ahead to [Installing a Free-Standing Studio](#).

For a three server implementation, continue this process as administrator (fnms-admin) on your batch server.

 **Tip:** Currently MSMQ limits the hostname of the batch server to 13 characters (excluding the domain qualifier).

To install the batch server:

1. On the batch server, open Windows Explorer.
2. Copy the downloaded archive FlexNet Manager Suite 2016 R1 SP1 Installer.zip from your staging location to a convenient location on this server (such as C:\temp), and unzip it.
3. Navigate in the unzipped archive to the FlexNet Manager Suite\Installers\FlexNet Manager Suite folder.
4. Start (double-click) setup.exe.

 **Tip:** You must start the installation by running setup.exe, rather than running the MSI by any other means. The setup file also installs Visual C++ 2010 Redistributable (if it is not already present), which is a prerequisite for integration with FlexNet Manager for SAP Applications.

5. Select the **Custom** installation path, and select only the **Batch scheduling server** for this installation (ensuring that the other options are deselected).

Take note of the installation location for future reference.

6. When asked to enter the credentials to be used for running batch processes, be sure that the account you enter already has Logon as a service permission (see [Authorize the Service Account](#)).
7. On the same page of the wizard, for **Server type**, choose either **Production** for your main server installation, or **Failover** if this is a stand-by or testing server.

 **Tip:** On your **Production** server, the batch scheduler and batch processor are automatically started as part of the installation process, while on a **Failover** server, both are disabled by default. If you need to switch between your production and stand-by servers, you must manually:

- Disable the batch scheduler and processor on the product batch server
- Enable the batch scheduler and processor on the standby batch server.

These adjustments are made in the **Microsoft Services** control panel.

8. For the batch processor, you are asked to identify the folder where intermediate packages (uploaded from inventory beacons) are saved prior to processing. The default location is %ProgramData%\Flexera Software\Beacon\IntermediateData. This default is formed by appending IntermediateData to the value of the base directory saved in HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ManageSoft Corp\ManageSoft\Beacon\CurrentVersion\BaseDirectory. This base location is also used by other processes, and should be changed only with care.

 **Tip:** A second folder, a network share, is used for handing off files uploaded through the web interface (such as inventory spreadsheet imports) for processing by the batch server. For this share, the default path is %ProgramData%\FlexNet Manager Platform\DataImport, and the path is saved in the registry at HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ManageSoft Corp\ManageSoft\Compliance\CurrentVersion\DataImportDirectory. There is also a parallel folder for data export. For implementations that separate the web application server from the batch server, these shares must also be configured and accessible from both servers. For more information, see [Configure Network Shares for Multi-Server](#).

9. When successful, close the installation wizard.

Installing a Free-Standing Studio

You can install additional copies of the Business Adapter Studio.

There are two kinds of Studio. Adapters can be created or modified using either the Inventory Adapter Studio or Business Adapter Studio (each for its appropriate type of adapter). Each time that you install an inventory beacon, copies of each of the Business Adapter Studio and the Inventory Adapter Studio are installed ready for use on the inventory beacon. These versions are configured exclusively for disconnected mode, where they cannot directly access your central database.

However, sometimes you want to work in connected mode, with direct access to your central database (for example, to write data into staging tables and manipulate it). For these cases:

- The Inventory Adapter Studio is also available on the web application server (or, in smaller implementations, the server providing that function). This works in connected mode.
- You can co-install an inventory beacon on your web application server. As always, this also installs the Business Adapter Studio, giving it (and adapters built there) additional privileges to access your central database in connected mode.

In addition, it is also possible to install a free-standing copy of the Business Adapter Studio (only) on your central application server. (If you have scaled up to several central servers, such as installation can be on whichever server suits you. The default location is indicated below.) Business adapters installed directly on your central

server(s) operate in connected mode, with full access to your central database. Obviously, attempt this only if you are very confident and well informed about details of the database schema.

 **Tip:** It is not possible to install additional free-standing copies of the Inventory Adapter Studio.

Start this procedure using a web browser on the server where you will install the Business Adapter Studio, or a computer that provides easy and fast network access from your central server.

 **To download and install an additional instance of the Business Adapter Studio:**

1. Use your browser to access the Flexera Software Customer Community.
 - a. On <https://flexeracommunity.force.com/customer/CCLanding>, use the account details emailed to you with your order confirmation from Flexera Software to log in (using the **Login** link in the top right).

 **Tip:** Access requires your Customer Community user name and password. If you do not have one, use the Request Community Access link on the login page to request one. Your credentials are configured for access to content you have licensed.

- b. Select the **Downloads** tab from the row across the top of the page.

A routing page appears to let you Access Product and License Center, displaying lists of products from Flexera Software.
 - c. In the lists of products, identify FlexNet Manager Platform, and click the **Access Above Products** button that is *below* that product name.

The Product and License Center site is displayed.
 - d. In the Your Downloads section of the Home page, click the link for [FlexNet Manager Platform](#).
 - e. In the Download Packages page, click the link for [FlexNet Manager Platform 2016 R1 SP1](#) to access the downloads. (You may need to repeat this action on a second page to access the downloadable files.)
2. In the list of components to download, select Business Adapter Studio *releaseNumber.zip*, and download and save it to a convenient location (such as C:\Temp).
3. In Windows Explorer, navigate to the downloaded archive, right-click, and choose **Extract All**.
4. Navigate into the unzipped archive, and double-click *setup.exe*, following the instructions in the installation wizard.

The Business Adapter Studio may be installed on any of your central servers (in a multi-server implementation). The installer assesses the installation paths, and installs itself in the installation folder of FlexNet Manager Suite. The defaults are as follows:

- The Business Adapter Studio executable: *BusinessImporterUI.exe*
- Default installation path (in connected mode on central server): C:\Program Files (x86)\Flexera Software\FNMP Business Adapter Studio
- No template file storage is required for the Business Adapter Studio in connected mode, as it validates the database schema directly. Your custom business adapters may be saved in the folder(s) of your choice.

When you have completed the remainder of your product installation, the Business Adapter Studio can be run from the Windows start menu on this server; and the Business Importer, which is also installed automatically with the Business Adapter Studio, is also available for execution on the command line. For details about the Business Adapter Studio, see online help or the *FlexNet Manager Suite System Reference* PDF file; and for details about the Business Importer, see the *Using the FlexNet Business Importer* PDF file. Both PDF files are available through the title page of the online help.

Install FlexNet Report Designer

This section applies only if your implementation design includes trend-based reporting.

 **Important:** *FlexNet Manager Suite 2016 R1 SP1 requires installation of FlexNet Report Designer 2016 R1 SP1 (or later), for which the underlying version of IBM Cognos is (at least) 10.2.2. Earlier releases of FlexNet Report Designer (Cognos) are not compatible. As well, you require the most recent license for FlexNet Manager Suite that includes new terms for FlexNet Report Designer (for license installation, see [Product Activation](#)).*

See the *FlexNet Manager Suite 2016 R1 SP1 Release Notes* for supported platforms and database versions.

FlexNet Report Designer has the following components:

- **Report Designer** — FlexNet Report Designer is a Java application server that handles requests from FlexNet Manager Suite and appropriate operator and user accounts.

 **Note:** *FlexNet Report Designer does not include the Apache Tomcat servlet container, nor the Apache HTTP Web server.*

- **Content Store Database** — The Content Store is a relational database used by the FlexNet Report Designer to store information about reporting models, folders, reports, and saved results. You should have already completed setting up this database (see [Create Databases](#)).

The FlexNet Report Designer installer installs FlexNet Report Designer to the designated host as a service. Therefore, the account used to install this component must have administrator permissions.

Make sure of the following points:

- The installing account must have administrative privileges on the Cognos server (the server hosting FlexNet Report Designer).
- The Cognos server must be accessible by its host name, rather than just its IP address. Do not use IP addresses anywhere in the FlexNet Report Designer settings.
- For performance reasons, FlexNet Report Designer is best installed on a separate server (it has high memory use requirements). (Refer back to for server design details.) When FlexNet Report Designer is installed on a server other than the database server running the content store database, Microsoft SQL Server Native Client must be installed on the server hosting FlexNet Report Designer. Installation instructions are available online, and you can start from <https://msdn.microsoft.com/en-au/data/aa937733>.
- The Cognos server must be in the same time zone as your database server(s).
- The password for the SQL Server login account used by Report Designer must not contain any of the greater-than, less-than, or ampersand characters (< > &).

- Do not attempt to use FlexNet Report Designer (nor any related reportsFlexNet Manager Suite) before importing the correct license file from Flexera Software (see [Product Activation](#)).

 **Important:** Do not allow consultants to use their 'normal' login when they develop reports on your behalf. A common user account should not be switched from one Cognos tenant to another. Otherwise, any reports saved under **My Folders** for that account are automatically removed by Cognos as the user account switches between tenants (or customers). For details, see <http://www-01.ibm.com/support/docview.wss?uid=swg21682369>. For safety, ensure that each consultant uses a login that is unique to your company (such as johnEnterprise); or as a workaround, save their developed reports under **Public Folder**.

To install FlexNet Report Designer:

- Install, configure, and test a supported web server.
 - Refer to the *FlexNet Manager Suite 2016 R1 SP1 Release Notes* for a list of supported web servers. Refer to the installation, configuration, and testing documentation provided by the web-server vendor.
 - If you choose to use Microsoft IIS as your web server, the installer for FlexNet Report Designer includes a PowerShell script to apply appropriate configuration. (You need access to the downloaded unzipped archive of the FlexNet Manager Suite installer to access this PowerShell script.)
 - The installer no longer installs the Apache web server by default (as earlier releases did), because of known security issues with Apache. (However, if you are using your own implementation of Apache web server, after you have installed FlexNet Report Designer the %Program Files%\reportdesigner\c10_64 folder contains an extract from an httpd.conf file that can be pasted into your existing httpd.conf file to help register the required virtual directories for that web server.)
- Copy your downloaded ReportDesigner.exe installer to the server where you will run Cognos and FlexNet Report Designer.
- Double-click the executable to launch it and work through the installation wizard panels as described in the following table.

 **Tip:** The executable automatically installs 32-bit software on 32-bit systems, and 64-bit software on 64-bit operating systems.

Panel	Details
Introduction	Read through the introduction, then click Next to continue. (You may also use Previous any time you need to step back and reconsider something.)
License Agreement	<ul style="list-style-type: none"> If you agree to be bound by its terms, select the I accept the terms of the license agreement radio button. If you do not accept the terms of the license, you must stop the installation process. Do not proceed further in this case.

Panel	Details
Installation Folder	<p>Specify the installation folder for the FlexNet Report Designer. You can enter a path manually in the Installation Folder field, or browse for a location using the Choose... button. If you make a mistake and wish to return the initial folder suggested by the installer, click the Restore Default Folder button.</p> <hr/> <p> Note: Spaces in the installation path are acceptable in the command line; but if you are scripting the installation, be sure to enclose the entire path-with-spaces in double quotation marks.</p>
Cognos Settings: Dispatcher Port	<p>Specify the port that you want Cognos to use to communicate with FlexNet Manager Suite.</p> <hr/> <p> Tip: It is recommended that you use the default port (9300), unless already in use by some other application.</p>
Cognos Settings: Select Database Type	<p>Choose SQL Server. The content store database stores report metadata required by Cognos. Because FlexNet Report Designer communicates with FlexNet Manager Suite, SQL Server is required.</p>
Cognos Settings: Content Store Settings	<p>Specify the location of, and <i>login</i> credentials for, your content store database.</p> <hr/> <p> Important: There are two critical points for these credentials:</p> <ul style="list-style-type: none"> • For the Content Store user name field, you must enter the Login name you created for database access, and not the database user name associated with that login. If you use the incorrect user name, the Cognos installer will silently fail in some of its tasks while reporting success. • The password for this SQL Server login account must not contain any of the greater-than, less-than, or ampersand characters (< > &).
Mail Server Settings	<p>Specify the details of the mail server to be used with Cognos. A mail server will be required if you initiate the emailing of a report. Email is sent using SMTP.</p>
Product Authentication Information	<p>This screen allows you to decide which FlexNet Manager applications will be used with this instance of FlexNet Report Designer. Select the FlexNet Manager Platform check box.</p> <p>FlexNet Report Designer will communicate with FlexNet Manager Suite to determine whether operators have the right to view or modify associated reports.</p>

Panel	Details
FlexNet Manager Platform Location	<p>Provide the host name for your enterprise's FlexNet Manager Suite batch server, prefixed with the <code>http://</code> protocol.</p> <hr/> <p> Tip: <i>In smaller implementations, the batch server is rolled up into the processing server. In a single server implementation, identify your application server.</i></p> <p>As usual, this may be simply the server name within the same domain, or a fully qualified name as required:</p> <pre>http://ExampleServerName http://ExampleServerName.OurDomain.com</pre> <p>The FlexNet Report Designer communicates with this server to authenticate operators attempting to access reports related to FlexNet Manager Suite.</p>
Pre-Installation Summary	<p>Review the choices you made, and click Previous to move back through the wizard and make any amendments. Once all seems correct, click Install to begin the installation process.</p> <p>A progress bar illustrates the status of the installation. Once the installation is complete, click Done to close the wizard.</p>

4. IBM Fix Pack 4 is available from the Flexera Software Product and License Center, from the same page where you downloaded the Report Designer archive (see [Prerequisites and Downloads ENCYCLOPAEDIA!!!](#)). This is required to prevent Cognos issues. In brief:

- a. Stop the IBM Cognos service listed in `services.msc`.

 **Tip:** *If the service does not exist, there may be problem with the original FlexNet Report Designer installation. A useful troubleshooting step is to run the `Report_Designer_Install_Dir\c10_64\bin64\cogconfig.bat` Cognos configuration utility to review settings and attempt to configure and start the service. The utility checks the configuration when you try to start the service, and gives an indication of any problems found.*

- b. Open the PDF file included in the fix pack archive.
 - c. Follow the preparation and installation instructions there to install the Fix Pack.
 - d. Restart the IBM Cognos service (see comments below about being patient).
5. If you are using Microsoft IIS as your web server on the Cognos server, use the following process to configure it for the Cognos gateway. The method for doing this depends on your system configuration:
 - If your FlexNet Manager Suite web application server and your Cognos gateway server are co-located (installed on the same server), run the following command once on this combined sever.
 - If your web application server and your Cognos gateway server are installed on separate servers, run the following command once on each server.

In each case, use the following procedure:

- a. Open a PowerShell command-line window.
- b. Navigate through the unzipped downloaded archive for installation of FlexNet Manager Suite into the Support folder.
- c. If you have not done so already, set the PowerShell permissions with the following command:

```
set-executionpolicy AllSigned
```

Respond to the warning text with the default Y.

- d. Run the following command:

```
.\Config.ps1 "config\FNMS Cognos Config.xml" updateConfig
```

6. Configure the account under which the IBM Cognos web service will run.

It is typical to use the service account previously configured (suggested: svc-flexnet) for this, as it already has more than adequate access rights. If you are configuring a different account, on the FNMSDataWarehouse database, and on the compliance database (default database name: FNMSCompliance), this account requires read access, and execute permissions to run stored procedures, and membership in the default public role to allow creation of temporary tables. (This account is configurable so that you do not need to change access controls on a Microsoft SQL Server database that is using Windows Authentication.) To configure this account:

- a. Open the Run dialog for your Windows system, and enter `services.msc` in the text field.
- b. Scroll through the list that appears, and check that the IBM Cognos service displays a **Status** of Started. (The service is normally started at the completion of the installer. If it is not, check the log files `cogconfig_response.csv` and `cognosserver.xml` [located in the folder `ReportDesigner-install-dir\c10_64\logs`] for more information.)
- c. Right-click the IBM Cognos service, and select **Properties**.
- d. Select the **Log On** tab.
- e. Click **This account**.
- f. Either browse for the account name from Active Directory, or enter the name and password for the account with access to both databases, as described above, and click **OK**.
- g. Right-click the IBM Cognos service, and select **Restart**.

Wait patiently while the service restarts (it may take several minutes, and you may need to dismiss a time-out message in the meantime; and in that case also manually refresh the Services list with F5). Eventually the **Services** dialog should display that it has started successfully.

7. If you are running a web server for Cognos that is something *other than* Microsoft IIS (such as Apache or IBM HTTP Server), you must modify the `web.config` file for FlexNet Manager Suite as follows:
 - a. On your web application server, navigate to `%InstallDir%\FlexNet Manager Platform\WebUI` (the default path is `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\WebUI`).

- b. Open the file `web.config` in a flat text editor.
- c. In the `<Configuration>` section, locate the `<flexera.web...>` element.
- d. Modify the `biPortalUrl` attribute by appending a query string to the URL, in the following fashion:

Original value:

```
http://RD-Server.example.com:8889/cognos10/cgi-bin/cognos.cgi
```

Modified value:

```
http://RD-Server.example.com:8889/cognos10/cgi-bin/cognos.cgi?bypass=
```

You do not need to complete the query string with a value.

- e. Save the modified `web.config` file to the same location.

This empty query string causes FlexNet Manager Suite to bypass code specific to the Microsoft IIS web server.

8. Remember that, before any operator can access any part of FlexNet Report Designer (powered by Cognos), you must do both of the following (but these are only possible after you have imported the correct license file from Flexera Software):
 - a. Create a role to which you have assigned the `Analytics User` privilege, and a second role that has the `Analytics Administrator` privilege (in the web interface for FlexNet Manager Suite, navigate to the system menu (in the top right corner), select **Accounts**, select the **Roles** tab, use the **Business reporting portal** section, and click the help button for further details).
 - b. Assign the appropriate operator(s) to these roles.

 **Important:** *By default, no more than 60 operators may be linked to the role that grants the `Analytics User` privilege (or to all roles that grant this privilege). If you assign more than 60 operators to these roles, all operators are locked out until you reduce the count of operators to the licensed limit. If you need more than 60 operators with this privilege, contact your Flexera Software Consultant with your request to increase the licensed count.*

Details about accounts and URLs to access Report Designer and any reports you develop in it are included in [Import the Sample Reporting Package](#).

Configure the System

PowerShell scripts are provided to complete configuration of the central application server(s), including the connections to the databases, and then store appropriate values in the database.

 **Important:** *For a single server implementation, run the PowerShell scripts on the application server (if you have a separate database server, you do not run the PowerShell scripts on that.) If the logical application server has been separated into multiple servers, the PowerShell scripts must be run on each of these servers, and must be run in the following order:*

1. Your web application server

2. Your batch server (or processing server, for a two-server application implementation)
3. Your inventory server(s).

On each applicable server in turn, as administrator (fnms-admin), complete all the following steps (noticing that on different servers, different dialogs may be presented). Before executing the PowerShell scripts, you should first ensure that:

- Your administrator account is a member of the db_owner fixed database role (at least temporarily, as described in)
- The scripts themselves have sufficient authorization to execute, as described in the following process.

 **To configure the system with PowerShell scripts:**

1. Check that Active Directory domain policy, and (where domain policy is correctly set) local machine policy, both have the security setting `Network access: Do not allow storage of passwords and credentials for network authentication` set to `Disabled`.

This check is required for:

- Your batch server (or server hosting that functionality)
- Your inventory server(s)
- Later, any inventory beacons that you will operate using a service account (rather than running them as local SYSTEM).

This setting is available in either domain policy or local security policy under **Security Settings > Local Policies > Security Options**. By default, the majority of Windows installations leave this setting disabled; but it may be enabled in tightly-secured environments. However, please note the following mandatory requirements:

- This setting *must* be disabled to allow the PowerShell scripts to configure the scheduled tasks and the accounts that run them during operation (or, on inventory beacons, to allow storing credentials for any service account). If it is not disabled, the PowerShell scripts fail at `Executing step Configure scheduled tasks` with the error `Exception has been thrown by the target of an invocation`.
- Furthermore, the setting must *remain* disabled for normal operation. If this setting is re-enabled, scheduled tasks with saved credentials will fail to run, showing the error `Logon failure: unknown username or bad password. (0x8007052E)` in the Task Scheduler interface. (However, saved credentials are not lost: disabling the setting again allows the scheduled tasks to resume as normal.)
- Therefore, in any environment where it is mandatory for this setting to be enabled, an alternative task scheduling technology must be provided to allow operation of FlexNet Manager Suite (such as BMC Control-M, or other alternatives).

 **Note:** *If you make this change to policy, a reboot of the server is required.*

2. On your web application server, batch server, or inventory server, ensure that Microsoft IIS is running again:
 - a. Ensure that your **Server Manager** dialog is still open.

- b. In the left-hand navigation bar, expand **Roles > Web Servers (IIS)**, and select **Internet Information Services**.

The IIS page is displayed.

- c. In the **Actions** panel on the right, select **Start**.

A message like `Attempting to start...` appears. Note that it can take some time before the service is started. When the service is running, the PowerShell scripts can update the IIS configuration as required.

3. If you require that the URLs for your central server(s) use the HTTPS protocol, confirm that site bindings have been configured to allow this:

- a. Open IIS Manager.
- b. In the **Connections** pane, expand the **Sites** node in the tree, and then click to select the site for which you want to add a binding.
- c. In the **Actions** pane, click **Bindings**.
- d. In the **Site Bindings** dialog box, click **Add**.
- e. In the **Add Site Binding** dialog box, add the binding information and then click **OK**.

For more information (including the set up of the required certificate), see <http://www.iis.net/learn/manage/configuring-security/how-to-set-up-ssl-on-iis>.

4. Run PowerShell as administrator (use the 64-bit version where available):

- a. Locate PowerShell. For example:
 - On Windows Server 2012, **Start > Windows PowerShell**
 - On earlier releases, in the Windows Start menu, find **All Programs > Accessories > Windows PowerShell > Windows PowerShell** (this is the 64-bit version; the 32-bit version is `Windows PowerShell (x86)`).
- b. Right-click, and choose **Run as Administrator**.

 **Important:** *It is critical that you run the PowerShell scripts with administrator privileges. Otherwise, scripts will fail.*

5. If you have not already done so, in the PowerShell command window, execute:

```
set-executionpolicy AllSigned
```

Respond to the warning text with the default Y.

6. In the PowerShell command window, navigate through the unzipped downloaded archive to the **Support** folder.
7. On each server, execute:

```
.\Config.ps1 "Config\FNMS Windows Authentication Config.xml"
```

(This script determines the type of server installation, and applies appropriate configuration. See also server-specific comments below.)

 **Tip:** If your PowerShell window is in its default **QuickEdit** mode (visible in the **Properties** for the window), simply clicking in the window when it already has focus puts it into **Mark** or **Select** mode. In such a mode, a process that is writing to the window is paused, awaiting your input. Beware of unintentionally pausing the configuration scripts by extra clicking in this PowerShell window. A process that has been paused in this way is resumed when the window already has focus and you press any key.

On each server, on first run PowerShell asks whether to trust the publisher of this script. You may allow **Run always** for a certificate signed by Flexera Software LLC.

8. In each case, allow the script to run once, completing the requested details.

 **Tip:** Helpful notes:

- Use the service account details you created earlier (example: `svc-flexnet`).
- Separately on each dialog, the check box **Use the same credentials for all identities** copies the account details from the upper section to the lower section of the dialog.
- For externally visible URLs, you can specify either HTTP or HTTPS protocol, and either the flat server name or the fully qualified domain name is supported. Any port number is optional. Remember that site bindings may be required if you are using the HTTPS protocol (see above). Valid examples:

```
http://servername
https://www.servername.mydomain:8080
```

- If you have a single-server implementation, when asked for the hostname of the different server functionality, use `Localhost`.
- Remember that in a multi-server implementation, MSMQ limits the hostname of the batch server to 13 characters. Of course, this limit applies to the hostname itself, and not to the fully-qualified domain name of the host. (If your batch server is already implemented with a longer hostname, consider using a DNS alias that satisfies this limitation.)
- The PowerShell script asks for appropriate database connection details, depending on the configuration of the current server (for example, if the current server includes inventory server functionality, the script asks for the Inventory Management database). In each case, supply the host server name (and, if the database instance is not the default instance, the instance name, separated by a backslash character); and the database name for each kind of database. In a small-to-medium implementation, all the operations databases may be on the same host and instance combination; but in larger implementations may be separated onto distinct servers. In either case, each database has a distinct database name, for which the suggested values are:
 - The main compliance database: `FNMSCompliance`
 - The database for inventory collected by the FlexNet inventory agent: `FNMSInventory`
 - The data warehouse for trend reporting: `FNMSDataWarehouse`
 - The snapshot database for performance improvement: `FNMSSnapshot`.

9. Close the PowerShell command window.

10. If this is your batch server (or the server hosting that functionality), ensure that the services for FlexNet Manager Suite Batch Process Scheduler are running:

- a. Navigate to Start > **Control Panel** > **Administrative Tools** > **View local services**.

The **Services** dialog opens.

- b. In the list of services, ensure that both FlexNet Manager Suite Batch Process Scheduler and FlexNet Manager Suite Batch Processor are both running. If not, right-click each stopped service in turn, and from the context menu, select **Start**.

 **Note:** These services are critical to the operation of FlexNet Manager Suite. It is best practice to set up your service monitoring to alert you any time either of these services is stopped.

11. As required for a multi-server implementation, loop back to step 1 and repeat across a multi-server implementation.

 **Tip:** On the application server (or on each component server in a multi-server implementation), the PowerShell scripts configure Microsoft IIS with an application pool for FlexNet Manager Platform. This pool requires authentication, and the scripts save the current logged-in account on each server in the IIS configuration for the application pool. When the user account on any server requires a password update, you must also update the password recorded in the IIS configuration for this application pool. For more information, see [Password Maintenance](#).

Configuration by the PowerShell scripts is now complete. Although not needed now, at other times it is possible to re-run the PowerShell scripts with the following flags for the use cases shown. You do not need to re-run the scripts unless, at some later stage, one of these use cases applies to you:

- Use without a flag to add a configuration file to a new installation; or on an existing implementation, to remove all customizations and replace the %ProgramFiles(x86)%\Flexera Software\FlexNet Manager Platform\WebUI\web.config file with the default version:

```
.\Config.ps1 "Config\FNMS Windows Authentication Config.xml"
```

- Add the updateConfig flag to insert any new parameters added by Flexera Software, leaving all settings (including customizations) unchanged for existing parameters:

```
.\Config.ps1 "Config\FNMS Window Authentication Config.xml" updateConfig
```

- Add the forceUpdateConfig flag to insert any new parameters added by Flexera Software, and restore the default values for all factory-supplied settings, but leaving any custom parameters unchanged:

```
.\Config.ps1 "Config\FNMS Windows Authentication Config.xml" forceUpdateConfig
```

- Add the removeConfig flag to remove the %ProgramFiles(x86)%\Flexera Software\FlexNet Manager Platform\WebUI\web.config file before using Windows Programs and Features to uninstall FlexNet Manager Suite:

```
.\Config.ps1 "Config\FNMS Windows Authentication Config.xml" removeConfig
```

Product Activation

Details of your license were emailed to you as part of the order confirmation process. Continue this process as administrator (fnms-admin), on the appropriate server (the one that includes the batch server):

- The application server (in a single server implementation)
- The processing server (in a two server application implementation)
- The batch server (in a three server application implementation).

To activate FlexNet Manager Suite:

1. On the appropriate server, save a copy of your license in a convenient folder (such as your installation folder), where it is accessible for this activation process.
2. In Windows Explorer, navigate to the `Installation-Dir\DotNet\bin` folder.

Replace `Installation-Dir` with your installation folder. The default location is `C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\DotNet\bin`.
3. Execute (double-click) `ManageSoft.Activation.Wizard.exe`.
4. Import your license to use FlexNet Manager Suite.

Populate the Downloadable Libraries

FlexNet Manager Suite comes with an Application Recognition Library, a SKU (stock keeping unit) Library, and several Product Use Rights Libraries (the latter depending on which products you have purchased for the suite). These are updated regularly by Flexera Software and normally downloaded automatically.

 **Note:** *The automated updates, and the following process, both assume that your server has access to the Internet. Alternatively, if your server has Internet access controlled through a proxy server, the following URLs must be accessible:*

- For the ARL: `http://www.managesoft.com/support/Compliance/RecognitionAfter82.cab`
- For the SKU library: `http://www.managesoft.com/support/Compliance/PURL.cab`
- For the PURLs: `https://update.managesoft.com:443/ProductUseRights`, including access to any sub-directories of this that may be returned to your server in response to its initial request.

If neither direct access nor access through a proxy server can be provided, you can use an alternative process to managed library updates manually (see the following topic).

At installation time, you need to trigger download of the libraries to create a baseline ready for product use.

 **Tip:** *New functionality in the 2015 release, including the recognition of some Microsoft Server applications, relies on the latest updates of the downloadable libraries.*

Complete this procedure as administrator (fnms-admin), having database rights as described in earlier sections.

To download the current libraries:

1. On the batch server (or application server for a single-server implementation), open the Microsoft Task Scheduler.

 **Tip:** Library downloads check the terms of your Flexera Software license. That is why this task cannot be attempted before [Product Activation](#), and must occur on the same server where your license was imported to activate the product.

2. Manually run the **Recognition data import** scheduled task.

By default this task is run at 1am daily. The task places a request for download in the queue of the internal batch scheduler. Given that no other processes are running at this stage of your implementation, it executes almost immediately. A utility downloads all libraries according to the terms of your license, and imports them into FlexNet Manager Suite. Typically for a first download, this may take in the order of a half an hour.

3. Thereafter, in the web interface for FlexNet Manager Suite, navigate to the system menu (in the top right corner), select **System Health > System Health Dashboard**, and check the cards for:

- **ARL**
- **SKU Library**
- **PURL**.

 **Tip:** The cards do not refresh automatically. Use F5 to refresh the display from time to time.

Each card shows the currently installed version of the relevant library, and the date of the last successful download and import of these libraries. Errors display an additional alert icon with some explanatory text. In case of errors, check the following log files, located in %APPDATA%\Local\Temp for the service account running the batch processor (suggested: svc-flexnet):

- ImportPURL-*.log
- PURL-*-log.txt
- Recognition*.log (for the Application Recognition Library).

Manual Updates of Library Data

The downloadable Application Recognition Library, Product Use Rights Library, and SKU Library are intended for automated updates delivered directly to your application server (or, in a multi-server implementation, the server hosting the batch server functionality). This automated process naturally relies on the server having direct Internet access.

However, in some secure environments, the applicable server may not be permitted to have Internet access. For such environments, the process of updating these critical libraries must be maintained manually. The manual process is outlined below; but first there are the following preparations.

- Subscribe to the Content Library Updates email list through the webpage <http://learn.flexerasoftware.com/SLO-FMS-Software-Content-Library-Updates>. List members receive email notifications when updates to library data are published.
- On your applicable server, navigate to the Microsoft Task scheduler and disable the **Recognition data import** task (in the **FlexNet Manager Platform** group).
This prevents the server from attempting to connect to the Internet to start downloads.
- Ensure that you have a User Name and Password for the Flexera Software Customer Community. If you do not yet have these credentials, you can apply as noted in the process below. (There is a delay for account validation.)

When these preparations are completed, you can use the following process to manually update each of the downloadable libraries as new editions are released.

 **To manually update downloadable libraries:**

1. Navigate to the libraries download page in the Flexera Software Customer Community website:
 - a. On <https://flexeracommunity.force.com/customer/CCLanding>, use the account details emailed to you with your order confirmation from Flexera Software to log in (using the **Login** link in the top right).

 **Tip:** Access requires your Customer Community user name and password. If you do not have one, use the Request Community Access link on the login page to request one. Your credentials are configured for access to content you have licensed.

- b. Select the **Downloads** tab from the row across the top of the page.
A routing page appears to let you Access Product and License Center, displaying lists of products from Flexera Software.
- c. In the lists of products, identify FlexNet Manager Platform, and click the **Access Above Products** button that is *below* that product name.
The Product and License Center site is displayed.
- d. In the Your Downloads section of the Home page, click the link for [FlexNet Manager Platform](#).
- e. In the **FlexNet Manager Platform** page, in the **New Versions** tab, click **FlexNet Manager Platform Content Libraries**.
- f. If this is your first time accessing the libraries this way, accept the End-User License Agreement by clicking **I agree**.

A **Download List** for the content libraries is displayed.

2. When the Application Recognition Library content is updated:
 - a. On a computer with Internet access, download the file RecognitionAfter82.cab (click its name in the **Download List**).
 - b. Log in to your application server (or the server hosting the batch server functionality) as a user in the FNMS Administrators security group.

This is the security group recommended during installation. A suggested account to use is fnms-admin.

- c. Copy the downloaded cab file to a convenient directory (for example, C:\Temp) on this server.
- d. Install the Application Recognition Library content using this command:

```
InstalLDir\DotNet\bin\MgsImportRecognition.exe -ia C:\Temp\
RecognitionAfter82.cab
```

(replacing *InstalLDir* with the installation folder for FlexNet Manager Suite on this server, which by default is C:\Program File (x86)\Flexera Software\FlexNet Manager Platform.)

 **Important:** *The update to the Application Recognition Library asserts locks on various database tables, and other transactions that are queued may time out. You should therefore execute this command only in off-peak times.*

3. When SKU Library content is updated:

- a. On a computer with Internet access, download the file PURL.cab from the **Download List**.
- b. Log in to your application server (or the server hosting the batch server functionality) as a user in the FNMS Administrators security group, such as fnms-admin.
- c. Copy the downloaded cab file to a convenient directory (for example, C:\Temp) on this server.
- d. Install the SKU Library content using this command:

```
InstalLDir\DotNet\bin\MgsImportRecognition.exe -is C:\Temp\PURL.cab
```

(replacing *InstalLDir* with the installation folder for FlexNet Manager Suite on this server, which by default is C:\Program File (x86)\Flexera Software\Flexera Manager Platform.)

 **Important:** *The update to the SKU Library asserts locks on some database tables, and other transactions that are queued may time out. Although this has less impact than updates to the Application Recognition Library, best practice is to execute this command only in off-peak times.*

4. When Product Use Rights Library content is updated, multiple files may be added to the **Download List**. These include PURL.cab (for basic functionality), PURL-Desktop.cab, and others with the naming convention PURL-vendor.cab for different vendor options you may have purchased. Process these one at a time:

- a. On a computer with Internet access, download the files available to you.
- b. Log in to your application server (or the server hosting the batch server functionality) as a user in the FNMS Administrators security group, such as fnms-admin.
- c. Copy the downloaded cab files to a convenient directory (for example, C:\Temp) on this server.
- d. Install each Product Use Rights Library in turn using commands like the following:

```

InstalLDir\DotNet\bin\MgsImportRecognition.exe -is C:\Temp\PURL.cab
InstalLDir\DotNet\bin\MgsImportRecognition.exe -is C:\Temp\PURL-vendor.cab
...

```

(replacing *vendor* with the appropriate name(s), and replacing *InstalLDir* with the installation folder for FlexNet Manager Suite on this server, which by default is C:\Program File (x86)\Flexera Software\Flexera Manager Platform.)

 **Tip:** You must install *PURL.cab* as the first *PURL* library installation, before any *vendor*-related *PURLs*. If the *SKU* library has been released simultaneously, you should have already imported *PURL.cab* in the previous step (it completes the *SKU* library import as well); and if this is the case, you do not need to repeat it now.

 **Important:** The update to the Product Use Rights Library asserts brief locks on some database tables, and other transactions that are queued may time out. Although this has less impact than updates to the Application Recognition Library, best practice is to execute this command only in off-peak times.

Import the Sample Reporting Package

This section is only for those using FlexNet Report Designer (powered by Cognos).

 **Important:** Before attempting this process, be sure that you have imported the latest license for FlexNet Manager Suite, which includes new license terms for FlexNet Report Designer. You should have completed this license import in the topic [Product Activation](#).

If you wish to continue with custom reporting through FlexNet Report Designer, use the following process to update your reports package for the new release. In overview, you need to:

- Position the sample reports package ready for import
- Authorize the service account to complete the import
- Perform the import itself
- Restore normal operational permissions to appropriate accounts.

 **To import the sample reporting package:**

1. Log in to your Report Designer (Cognos) server, and navigate to the following (system-dependent) folder.

 **Tip:** If this folder does not already exist, create it.

On 32-bit systems, navigate to:

```
reportDesignerInstallationDirectory\c10\deployment
```

On 64-bit systems, navigate to:

```
reportDesignerInstallationDirectory\c10_64\deployment
```

2. Copy your Report Designer Package - Single Tenant (FlexNetManagerPlatformReportsAndDashboard.zip) to this folder.

You downloaded this package as you worked through [Download the Materials](#).

 **Important:** Do not change the file name. This file name and location are both requirements.

3. You may log out of the Report Designer (Cognos) server now.

Shortly you will log into your batch server, but first there are permissions required to authorize the installation process.

4. In the web interface for FlexNet Manager Suite 2016 R1 SP1, add your service account (suggested: svc-flexnet) as an Analytics Administrator for the business reporting portal as follows:

 **Tip:** You need to have administrator privileges within FlexNet Manager Suite to make these changes.

- a. Navigate through the system menu (in the top right corner) > **Accounts**.

The **Accounts** page opens.

- b. Select the **Roles** tab, and check for the existence of the Business Reporting Portal Admin role.

If the role does not already exist, you can create it.

- c. Click the edit (pencil) icon at the right-hand end of the card for this role.

The properties page for this role appears.

- d. Expand the **Business reporting portal** tab of the accordion, and from the **Privileges** drop-down list, ensure the **Analytics Administrator** feature has **Allow** permissions.

- e. Switch to the **All Accounts** tab, locate your service account (suggested: svc-flexnet) in the list, and click the account name hyperlink.

The page switches to show **Account Properties** for your account.

- f. Under the **Permissions** section, check whether your Business Reporting Portal Admin role is already listed against the service account. If so, you are set for upload permissions, and should continue with the next step.

- g. Click the + button to the right of the current **Role** to add this account to another role.

A duplicate line appears with another drop-down list of all the roles defines so far.

 **Tip:** Each enterprise is licensed for only a single operator in the Analytics Administrator role. If one has already been assigned this privilege, you need to move that account out before you can add the service account.

- h. From the duplicate drop-down list, select your Business Reporting Portal Admin role.

The **Business reporting portal** tab of your resulting list of privileges is updated. If you expand this tab of the accordion, you see that **Analytics Administrator** now displays Allowed access.

- i. Scroll to the bottom of this page, and click **Save**.

Your services account is now the (only) **Analytics Administrator** for use of the Report Designer.

 **Tip:** Report Designer also requires that this account is valid in Active Directory.

This privilege level allows the account to complete the import of the sample reports package. Keep this web page available for further use shortly.

5. Using the service account (suggested: svc-flexnet), log into your batch server directly.

Refer to your block diagram of servers to identify this machine. If you have combined servers, this may be your processing server, or your application server.

6. Navigate in Windows Explorer to *installation-folder\Cognos\BusinessReportingAuthenticationService\bin*.

Example:

```
C:\Program Files (x86)\Flexera Software\FlexNet Manager Platform\Cognos\
BusinessReportingAuthenticationService\bin
```

7. Right-click CognosPackageImport.exe and **Run as Administrator**.

A window appears for the **Flexera Report Designer Package Import Utility**.

8. Click **Update....**

An **Update Value** dialog appears.

9. In the **Value** field, enter the value for Report Designer's Dispatch URL.

In a typical installation, this has the following form:

```
http://RD-Server:9300/p2pd/servlet/dispatch
```

where you should replace *RD-Server* with the name of your server hosting Report Designer (powered by Cognos).

10. Click **Update**.

The value entered is written into the registry on this server, and the additional dialog disappears.

 **Tip:** If you run this import utility on the same machine in future, it displays the value stored in the registry in its read-only **Dispatch URL** field.

11. Click **Install Reports Package**.

Progress is logged in the text window of this dialog as the package is imported into the Cognos database. When successfully completed, the last line displays Finished publishing the Report Designer package.

 **Important:** Do not close the utility until it has finished the import! This process may take several minutes.

12. Restore the Analytics Administrator privilege to an appropriate interactive operator account.

- a. Back in the web interface for FlexNet Manager Suite 2016 R1 SP1 (in the **Accounts** tab of the same page), remove your service account (suggested: svc-flexnet) from the Business Reporting Portal Admin role that includes the sole Analytics Administrator privilege (do this in the account properties, by deleting the appropriate line in the **Roles** group). Save the account properties that you have changed.
- b. Switch to the appropriate administrator account (suggestion: fnms-admin), and for this account add the Business Reporting Portal Admin role. Save the changed account properties.

FlexNet Report Designer reports are now available as baselines for your own customization and extension as required. The reports can be accessed in a web browser through the web interface for FlexNet Manager Suite: select **Reports** in the modal bar at the very top, then select **Analytics** in the menu bar.

As well, the appropriate administrator's account is configured to manage Cognos rights for other users.

Remember that FlexNet Report Designer requires that you allow pop-ups (otherwise, for example, the **Launch** menu in the toolbar cannot operate), and that the URL for your reports (where this is separate from the URL for your web interface) must be a trusted site for your web browser.

 **Tip:** There is a known issue where some Report Designer menus do not appear in Chrome. This issue does not present in Microsoft Internet Explorer or Firefox, which are recommended.

Review Scheduled Tasks

The PowerShell configuration scripts have created a number of scheduled tasks on the batch server, in the **FlexNet Manager Platform** folder for Microsoft Scheduled Tasks. These are 'wrappers' which trigger activities in the internal batch scheduler within FlexNet Manager Suite.

You may review these tasks, and disable any that you are certain you do not need. For example, if you never require SAP license reconciliation, you could disable the three Windows scheduled tasks that relate to SAP licensing.

Scheduled tasks across all central servers are listed in [Password Maintenance](#). On the batch server, the Windows scheduled tasks include:

- Data warehouse export
- Export to ServiceNow
- FlexNet inventory data maintenance
- FNMP database support task
- Import Active Directory
- Import application usage logs
- Import discovery information
- Import installation logs
- Import inventories
- Import Inventory Beacon activity status

- Import Inventory Beacon status
- Import remote task status information
- Import security event information
- Import SAP inventories
- Import SAP package license
- Import SAP user and activity information
- Import system status information
- Import VDI access data
- Inventory import and license reconcile
- Recognition data import
- Regenerate Business Import config
- Send contract notifications.

Link to Flexera Service Gateway

Flexera Service Gateway allows interaction between separate products from Flexera Software.

The ability to link FlexNet Manager Suite to the Flexera Service Gateway is subject to a separate license option. If you have licensed this option (you can check using the process below), you need to configure the connection as part of your configuration process.

To complete this process, you must know credentials that can log into your Flexera Service Gateway server with administrator privileges.



To link to Flexera Service Gateway:

1. Log into the web interface for FlexNet Manager Suite.



Tip: *Either log in from a computer other than your web application server; or if running on that server, ensure that you access the full server name (and not Localhost) in the URL. The URL in your web browser is taken into account in preparing the integration file, and should not include Localhost if you want to integrate with other products from Flexera Software.*

2. Optionally, check that you have licensed the option to link to Flexera Service Gateway:
 - a. Navigate to the system menu (in the top right corner) > **FlexNet Manager Suite License**.

The **Your FlexNet Manager Suite License** page appears.

- b. Check the **License details** section.

If you have licensed this option, FNMP API integration enabled: Yes appears in the list. If it is not visible, you cannot continue with this procedure.

3. Navigate to the system menu > **System Settings**, and select the **Web API** tab.

 **Note:** This tab is available only if your enterprise has licensed the FNMP API integration option.

4. Click each of the links in turn to download the two files, and save them to a convenient location (such as C:\temp).

There must be network access to your Gateway server from the location where you save the files.

5. Either, in your web browser's list of recent downloads, click the registration tool to open it; or
 - a. Open a Command Window, and navigate to the location where you downloaded the files.
 - b. Run RegisterFlexeraServiceGateway.exe.

The **Flexera Service Gateway Registration** dialog appears.

6. Identify the **Flexera Service Gateway host**, the server in your enterprise where the Gateway is installed, and the **Port** number.

You may use an IP address, a fully qualified domain name, or (if your DNS is correctly configured and accessible) the server's host name. The default port number is 9443.

7. Provide the credentials for administrator access to the Gateway account.

In the absence of any better information, try the account admin with the password password.

8. Use the **Import** button to browse to the other downloaded file, webapi.config, and import it into the registration tool.
9. Click **OK**.

Registration is complete. (You do not need to repeat this registration on others of your central servers.)

Configure Beacon Connections

Inventory beacons are the data-gathering arms of your compliance system.

Remember that it is both common and helpful to install an inventory beacon on your batch server. Uniquely amongst your beacons, this one has access to the operations databases, which (for example) gives extra functionality to business adapters created and run on this inventory beacon.

 **Important:** When you install an inventory beacon on your batch server, you must manually configure that inventory beacon to use Microsoft IIS, as described in the online help. In particular, see *FlexNet Manager Suite Help > What Is an Inventory Beacon? > Configuring Direct Inventory Gathering*.

The process for installing and configuring inventory beacons starts from the web UI for FlexNet Manager Suite.

 **Note:** Any computer on which you will install an inventory beacon must have at least version 3.0 of PowerShell installed. For more information, see [Upgrade PowerShell on Inventory Beacons](#).

 **To install and configure an inventory beacon:**

1. Use a web browser on another computer to access the URL `server-name-or-IP-address/Suite/`.
- 2.

3. In the web interface for FlexNet Manager Suite, expand the accordion sections (and see the related help) for guidance on how to deploy and configure your inventory beacon(s).

 **Remember:** When installing an inventory beacon on your batch server, you must manually configure that inventory beacon. In the online help, see *FlexNet Manager Suite Help > What Is an Inventory Beacon? > Configuring Direct Inventory Gathering*, and be sure to select the IIS option.

4. With your inventory beacon(s) configured, in the web interface for FlexNet Manager Suite, navigate to **Discovery & Inventory > Discovery > Discovery and Inventory Rules** to set up FlexNet inventory collection rules.
5. Refer to the online help for details about configuring your inventory beacon(s) to connect to other data sources to import third-party inventory.

For example, in the section *FlexNet Manager Suite Help > Inventory Beacons*, see (amongst others) the following topics:

- *Inventory Systems Page*
- *SAP Systems Page*
- *Engineering Apps Agent Page*.

When the inventory collections rules are established, and the connections set up on the inventory beacon(s), FlexNet Manager Suite is ready to import data and start calculating your license position.

Set Up Initial Accounts and Access Rights

The installing account (example: fnms-admin) defaults to having administrator privileges in your new implementation. An account (such as that installing account) with administrator privileges must do three things to make other operators functional in FlexNet Manager Suite:

- Gather records of users from Active Directory. For your on-premises implementation, each of your operators must first be known to FlexNet Manager Suite as a user within your enterprise. Since authentication in FlexNet Manager Suite is based on Active Directory accounts, the user must be known within the Active Directory domain where your central application server is located (or a domain that is trusted by the application server's domain).
- Create an account in FlexNet Manager Suite for each operator, referencing their Active Directory user account.
- Assign each operator account to the appropriate role(s). All access rights are controlled by roles, and individual operator accounts are assigned to the appropriate role(s) for the access rights they require.

To set up accounts and access rights:

1. Import data from Active directory:
 - a. Log into an inventory beacon in the same domain as your central application server using an account that has local Windows administrator privileges, and open the FlexNet Beacon interface.

 **Tip:** This may be a convenient time to schedule regular imports from Active Directory. For more information, see the help on *Creating a Data Gathering Schedule*.

- b. In the **Data collection** group, click **Active Directory**, and select the default connection for Current domain.

 **Tip:** If you do not have an Active Directory connection listed, or you need to import users from a different domain, click the help button and see *Inventory Beacons > Importing from Active Directory*.

- c. Click **Execute Now**.

The Active Directory data is gathered, uploaded to your central application server, saved in the inventory database, and shortly thereafter imported into the compliance database. This process may take some time (in the order of 30 minutes for each 10,000 users recorded in the Active Directory domain).

- d. Return to the web interface for FlexNet Manager Suite, and navigate to **Enterprise > All Users**, and validate that the user accounts have been imported from Active Directory.

Once displayed, this listing is not refreshed automatically. Press F5 or use your browser's refresh control to update the display until the data appears.

2. Ensure that appropriate roles are ready to assign to the future operators:

- a. Navigate to the system menu (in the top right corner), choose **Accounts**, and select the **Roles** tab.
- b. For each *unique* set of access rights that you need to assign to operators, ensure that there is (or create) a distinct role, and set its rights by expanding the various headings in the accordion and using the controls inside. (For advanced combinations, start by selecting Custom from the drop-down list in each section.) Remember to scroll down and click **Save** (or **Create**) when you make any changes.

For more information, see the online help.

3. Set up the account for each operator:

- a. Switch to the **All Accounts** tab.

This tab lists all existing operator accounts permitted to log in to FlexNet Manager Suite. At this stage, you should expect to see only the installing user's operator account.

- b. Click **Create an account**.

- c. Enter part of the Active Directory user name in the search field, and click **Search**.

- d. In the search results list, select the desired user account, and click **Get account details**.

FlexNet Manager Suite populates the **Name**, **Email**, and **Job title** (if known) into the respective fields. If desired, you can add further information about this operator's account.

- e. Ensure that the **Status** is set to Enabled.

This setting is mandatory to allow the operator to log in. (Conversely, you can disable an account here, if necessary for any reason.)

- f. From the **Role** drop-down list, select the first role for this operator. You can add additional roles for each operator as required.

The net effect of all roles on permissions for this account is displayed in read-only mode in the accordion below as you make changes. (Remember that a 'deny' in one role over-rides an 'allow' in another role when the same account is assigned to both roles.)

g. Click **Create**.

A FlexNet Manager Suite operator account is created for the existing Active Directory user. Repeat the account creation process for each operator.

3

Notes on Issues

This chapter includes a few brief guidelines for dealing with common issues. If you discover additional issues not described here, please contact Flexera Software Support for assistance.

For help on problems uploading inventory data, access the online help through the web interface for FlexNet Manager Suite, and navigate to **FlexNet Manager Suite Help > Inventory Beacons > Inventory Beacon Reference > Troubleshooting: Inventory Not Uploading**.

Password Maintenance

When a password on the service account expires, services cease to operate. At password refresh time, ensure that the password is updated for all of the following.

 **Note:** For accuracy, the changes are listed for distinct servers. In smaller implementations:

- If you have only a web application server and a processing server, then combine the lists for the batch server and inventory server for use on your processing server.
- In a single server implementation, combine all three lists on your application server.

The configuration scripts used during product installation cannot be re-run simply to update passwords. The following passwords must all be maintained manually.

On the web application server

- The identity configured on the following IIS application pools:
 - **FlexNet Manager Platform**
 - **ManageSoftWebServiceAppPool**
 - **SAP Optimization**
 - **SAPServiceAppPool**

On the batch server

- The identity configured on the IIS application pool: **Flexera Beacon**
- In Services:
 - **FlexNet Manager Suite Batch Process Scheduler**
 - **FlexNet Manager Suite Batch Processor**
- In the **FlexNet Manager Platform** folder for Microsoft Scheduled Tasks:
 - Data warehouse export
 - Export to ServiceNow
 - FlexNet inventory data maintenance
 - FNMP database support task
 - Import Active Directory
 - Import application usage logs
 - Import discovery information
 - Import installation logs
 - Import inventories
 - Import Inventory Beacon activity status
 - Import Inventory Beacon status
 - Import remote task status information
 - Import security event information
 - Import SAP inventories
 - Import SAP package license
 - Import SAP user and activity information
 - Import system status information
 - Import VDI access data
 - Inventory import and license reconcile
 - Recognition data import
 - Regenerate Business Import config
 - Send contract notifications.

On the inventory server

- The identity configured on the following IIS application pools:

- **Flexera Importers**
- **Flexera Package Repository**
- In the **FlexNet Manager Platform** folder for Microsoft Scheduled Tasks:
 - Import Active Directory
 - Import application usage logs
 - Import discovery information
 - Import installation logs
 - Import inventories
 - Import Inventory Beacon activity status
 - Import Inventory Beacon status
 - Import remote task status information
 - Import security event information
 - Import system status information
 - Import VDI access data.

On the Cognos server

The password on the IBM Cognos service also needs to be maintained.

On the inventory beacon

By default, the FlexNet Beacon Engine service and scheduled tasks run as the local SYSTEM account. If these defaults have been modified:

- The following service in the **Services (local)** folder of Component Services (this may have been modified to run as a service account with administrator privileges):
 - FlexNet Beacon Engine.

 **Note:** *The following services are also present, but must be running as the local SYSTEM account:*

- *Flexera Inventory Manager installation agent*
- *Flexera Inventory Manager managed device vversionNumber*
- *Flexera Inventory Manager security service.*
- In the **FlexNet Inventory Beacon** folder for Microsoft Scheduled Tasks (by default, these tasks run as the local SYSTEM account, but you may have modified the installation to run these as a named user account in order to manage proxy access):
 - Upload Flexera logs and inventories
 - Upload third party inventory data

Identifying IIS Application Pool Credential Issues

A password change on (any of the) application server(s) may require an update of the IIS configuration.

Background

During installation of an on-premises implementation, PowerShell scripts run on the application server (or, in a multi-server implementation, on each of the component servers in turn) ask you to provide credentials for the application pools used within IIS for FlexNet Manager Suite. The scripts save these as part of the IIS configuration.

 **Note:** *If, as recommended, you have used a service account (suggested: svc-flexnet) for this purpose, it is very unusual to require a password change for such an account. If you used a normal user account, you require this additional maintenance each time that the password on that account is changed.*

If, at any time after installation, the password for this user account is updated, the IIS configuration is now out of date, and IIS will refuse to run the application pools for FlexNet Manager Suite.

 **Tip:** *In this case, as well as IIS configuration, you may also need to update passwords on scheduled tasks and on services. For a complete list, see .*

Diagnosis

First symptom: The web interface for FlexNet Manager Suite will not load, producing the following error:

```
HTTP Error 503 - Service unavailable
```

Investigation: If you examine the Microsoft IIS application pools, you will find that the application pool for FlexNet Manager Platform is disabled after any attempt to run the web interface. An examination of the IIS log file shows entries like the following:

```
server-name 5057 Warning Microsoft-Windows-WAS System date time
Application pool FlexNet Manager Platform has been disabled. Windows Process Activation
Service (WAS) did not create a worker process to serve the application pool because the
application pool identity is invalid.
```

```
server-name 5059 Error Microsoft-Windows-WAS System date time
Application pool FlexNet Manager Platform has been disabled. Windows Process Activation
Service (WAS) encountered a failure when it started a worker process to serve the
application pool.
```

```
server-name 5021 Warning Microsoft-Windows-WAS System date time
The identity of application pool FlexNet Manager Platform is invalid. The user name or
password that is specified for the identity may be incorrect, or the user may not have
batch logon rights. If the identity is not corrected, the application pool will be
disabled when the application pool receives its first request. If batch logon rights
are causing the problem, the identity in the IIS configuration store must be changed
```

after rights have been granted before Windows Process Activation Service (WAS) can retry the logon. If the identity remains invalid after the first request for the application pool is processed, the application pool will be disabled. The data field contains the error number.

Repair

Update the credentials for the applications pool on each of your application servers, using the process in [Update Credentials in IIS Application Pools](#).

Update Credentials in IIS Application Pools

To update the password for the FlexNet Manager Suite application pools within Microsoft IIS, complete the following process on each of your servers in turn:

 **Tip:** Servers are here named in a series from most specific (in large scale implementations) to most general (for small scale implementations). Use the first-listed server type that applies to you. For example, if the list item says 'on the inventory server/processing server/application server', and you have a separate inventory server, make the change there. If you do not have a separate inventory server, but you have scaled to a separate processing server (that combines your inventory server and your batch server), make the change on your processing server. For a single-server implementation, you make this change on your application server.

To update credentials in IIS Application Pools:

1. Open IIS Manager (**Start > Administrative Tools > Internet Information Service (IIS) Manager**).
2. In the navigation area on the left, expand the **SERVER-NAME (account-name)** node, and select **Application Pools**.

Any application pool accessed since the user account password was changed displays a status of Stopped. On each server type, the relevant application pools are:

- **Flexera Beacon** on the batch server/processing server/application server
- **Flexera Importers** on the inventory server/processing server/application server
- **Flexera Package Repository** on the inventory server/processing server/application server
- **FlexNet Manager Platform** on the web application server/application server
- **ManageSoftWebServiceAppPool** on the web application server/application server
- **SAP Optimization** on the web application server/application server
- **SAPServiceAppPool** on the web application server/application server.

3. Select the appropriate application pool, and in the **Actions** list on the right, click **Advanced Settings**.

The **Advanced Settings** dialog appears.

4. In the **Process Model** section, select **Identity**, and click the ellipsis button next to the account name.
5. Next to **Custom Account**, click **Set**.

The **Set Credentials** dialog appears.

6. Enter the full **User name** for the account and enter the updated password in the two required fields.
7. Click **OK** to close all the open dialogs and save the new settings.
8. With the appropriate application pool still selected, in the **Actions** list on the right, click **Start**.

IIS Roles/Services

Below are the Microsoft Internet Information Services (IIS) roles and services utilized by FlexNet Manager Suite. In the event of misbehavior, it is often helpful to validate that all of the following are enabled on all your central servers (depending on the scale of your implementation, the ones that you have implemented from the application server, the web application server, the processing server, the batch server, and the inventory server). The process for checking whether the services are enabled is summarized below the list.

- Web Server > Application Development > .NET Extensibility
- Web Server > Application Development > ASP.NET
- Web Server > Application Development > CGI
- Web Server > Application Development > ISAPI Extensions
- Web Server > Application Development > ISAPI Filters
- Web Server > Common HTTP Features > Default Document
- Web Server > Common HTTP Features > Directory Browsing
- Web Server > Common HTTP Features > HTTP Errors
- Web Server > Common HTTP Features > HTTP Redirection
- Web Server > Common HTTP Features > Static Content
- Web Server > Health and Diagnostics > HTTP Logging
- Web Server > Performance > Dynamic Content Compression
- Web Server > Performance > Static Content Compression
- Web Server > Security > Basic Authentication
- Web Server > Security > Request Filtering
- Web Server > Security > Windows Authentication



To check available services in the Windows Server operating system:

1. Starting from the Windows start menu, navigate to **Control Panel > Administrative Tools > Server Manager**.
2. In the navigation bar on the left, under the **Server Manager** node, select the **Roles** node.

3. Locate the **Web Server (IIS)** section, and within that, identify the **Role Services** section.

This section lists the status for each service. All of those in the list above should be both installed and enabled on all your central servers.

4

Additional Information

Details about installing, configuring and operating the inventory beacon are summarized directly in the web interface for FlexNet Manager Suite, and are detailed in the online help available through those pages.

Additional documentation is available through the title page of online help for your implementation:

- [Gathering FlexNet Inventory](#) provides a structured reference to the different ways of deploying and using the FlexNet inventory agent and its various components, as well as command lines and preference settings for some of the code agents that are deployed to the adopted device.
- [FlexNet Manager Suite Adapters Reference](#) covers standard adapters available for the system that manipulate data from external systems into a format useable by FlexNet Manager Suite.
- [Using FlexNet Business Importer](#) covers the use of this command-line executable, which is also the tool used by the Business Adapter Studio to drive imports from adapters defined there. This document includes the data model common to the Business Importer and the Business Adapter Studio, as well as some sample adapters (called the Data Domain Interface, or DDI).
- [FlexNet Manager Suite System Reference](#) collects a variety of reference material, including:
 - How to customize FlexNet Manager Suite
 - How to use spreadsheets (or CSV files) of inventory data for one-time or scheduled imports
 - Discovering Oracle systems and collecting inventory from them
 - How to use the Business Adapter Studio and the Inventory Adapter Studio
 - How to set up in a single sign-on environment.
- [FlexNet Manager Suite Schema Reference](#) provides a working reference to the database tables and columns for FlexNet Manager Suite. This is particularly useful if you want to prepare (or specify) customizations, or to understand more as you prepare custom adapters.
- [FlexNet Manager for SAP Applications Installation Guide](#) is for those who have purchased the FlexNet Manager for SAP Applications product, and provides implementation details.
- [FlexNet Manager for SAP Applications User Guide](#) is for those who licensed the FlexNet Manager for SAP Applications product, and provides operational details. This content is more extensive than the information available in the online help (see table of contents at left).

- [Non-Commercial Software Disclosures](#) lists all third-party non-commercial code used in FlexNet Manager Suite, with attributions and license terms.
- For your convenience, the [Release Notes](#) for the current version are also available. These include issues resolved in this release, new and updated features, system requirements and the like.

Additional documentation for FlexNet Manager for SAP Applications is available through the Customer Community portal.

