Workflow Manager
Installation Guide
Legal Information

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<th>Topic</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Requirements</td>
<td>Lists the hardware and software requirements for the components of Workflow Manager.</td>
</tr>
<tr>
<td>Installing Workflow Manager</td>
<td>Explains how to perform installation preparation tasks, and how to install Workflow Manager.</td>
</tr>
<tr>
<td>Configuring Workflow Manager</td>
<td>Performing post-installation configuration tasks, including how to use the AdminStudio Configuration Wizard.</td>
</tr>
</tbody>
</table>

**Product Support Resources**

The following resources are available to assist you with using this product:

- Flexera Product Documentation
- Flexera Community
- Flexera Learning Center
- Flexera Support

**Flexera Product Documentation**

You can find documentation for all Flexera products on the Flexera Product Documentation site:

https://docs.flexera.com
Flexera Community

On the Flexera Community site, you can quickly find answers to your questions by searching content from other customers, product experts, and thought leaders. You can also post questions on discussion forums for experts to answer. For each of Flexera’s product solutions, you can access forums, blog posts, and knowledge base articles.

https://community.flexera.com

Flexera Learning Center

Flexera offers a variety of training courses—both instructor-led and online—to help you understand how to quickly get the most out of your Flexera products. The Flexera Learning Center offers free, self-guided, online training classes. You can also choose to participate in structured classroom training delivered as public classes. You can find a complete list of both online content and public instructor-led training in the Learning Center.

https://learn.flexera.com

Flexera Support

For customers who have purchased a maintenance contract for their product(s), you can submit a support case or check the status of an existing case by making selections on the Get Support menu of the Flexera Community.

https://community.flexera.com

Contact Us

Flexera is headquartered in Itasca, Illinois, and has offices worldwide. To contact us or to learn more about our products, visit our website at:

http://www.flexera.com

You can also follow us on social media:

- Twitter
- Facebook
- LinkedIn
- YouTube
- Instagram
Before beginning the installation, review the following hardware and software requirements. This information is presented in the following sections:

- System Requirements Reference
- Installing Internet Information Services (IIS)

## System Requirements Reference

This section lists the system requirements for Workflow Manager.

- Workflow Manager Web Server
- Workflow Manager / AdminStudio Database Server
- File Share Server
- Workflow Manager End User Computers
- Portal Web Server for Intranet Clients
- Portal Web Server for Internet Clients
- Workflow Manager System Account Requirements
Workflow Manager Web Server

The following table lists the system requirements for the Web server that hosts the Workflow Manager Data Web service and the actual Workflow Manager Web site.

**Table 2-1 • Workflow Manager Web Server**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>32-bit or 64-bit processor at 2 GHz or greater.</td>
</tr>
<tr>
<td></td>
<td><em>Note • Workflow Manager runs in 32-bit mode on a 64-bit OS.</em></td>
</tr>
<tr>
<td>RAM</td>
<td>4 GB or greater (8 GB preferred)</td>
</tr>
<tr>
<td>Hard Disk Space</td>
<td>100 GB or greater</td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows Server 2012 R2 or later / English base language (Windows Server OS is preferred)</td>
</tr>
<tr>
<td>IIS</td>
<td>IIS 7.0 or later</td>
</tr>
<tr>
<td>.NET Framework</td>
<td>.NET Framework 4.6.1 or later</td>
</tr>
<tr>
<td>ASP.NET</td>
<td>ASP.NET 4.0.30319 or later</td>
</tr>
<tr>
<td>MSXML</td>
<td>MSXML 6.0</td>
</tr>
<tr>
<td></td>
<td><em>Note • MSXML is installed by the Workflow Manager installer.</em></td>
</tr>
</tbody>
</table>

Workflow Manager / AdminStudio Database Server

This following table lists the recommended system configuration for a Workflow Manager/AdminStudio Application Catalog database server:

**Table 2-2 • Workflow Manager / AdminStudio Database Server**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>32-bit or 64-bit processor at 2 GHz or greater</td>
</tr>
<tr>
<td>RAM</td>
<td>4 GB or greater (8 GB preferred)</td>
</tr>
<tr>
<td>Hard Disk Space</td>
<td>80 GB or greater</td>
</tr>
<tr>
<td>Operating System</td>
<td>Windows Server 2012 R2 or later / English base language (Windows Server OS is preferred)</td>
</tr>
</tbody>
</table>
Table 2-2 • Workflow Manager / AdminStudio Database Server

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Database Software</strong></td>
<td>SQL Server 2008 R2 or later databases, including SQL Server 2012 and SQL Server 2014 (latest version preferred)</td>
</tr>
<tr>
<td></td>
<td>• <strong>Dictionary sort order</strong>—SQL Server must be installed with case-insensitive dictionary sort order 52 on Code Page 1252 for non-Unicode data. For more information, use the <code>sp_helpsort</code> T-SQL command, which returns the following: Latin1-General, case-insensitive, accent-sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL Server Sort Order 52 on Code Page 1252 for non-Unicode data</td>
</tr>
<tr>
<td></td>
<td>• <strong>Collation setting</strong>—<code>SQL_Latin1_General_CP1_CI_AS</code> is the required collation setting for AdminStudio database server. It is the only supported collation.</td>
</tr>
</tbody>
</table>

Note • Before attempting to connect to an existing Microsoft SQL Server, open SQL Server Configuration Manager and make sure that the following three protocols are enabled:

- Shared Memory
- Named Pipes
- TCP/IP

File Share Server

This following table lists the system requirements for the machine that stores Workflow Manager’s uploaded source files and the repackaged output files:

Table 2-3 • File Share Server

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>2 GHz or greater</td>
</tr>
<tr>
<td><strong>RAM</strong></td>
<td>2 GB or greater</td>
</tr>
<tr>
<td><strong>Hard Disk Space</strong></td>
<td>1 TB or greater</td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows Server 2012 R2 or later / English base language (Windows Server OS is preferred)</td>
</tr>
</tbody>
</table>
Workflow Manager End User Computers

This following table lists the recommended system configuration for a Workflow Manager end user machine:

**Table 2-4 • Workflow Manager End User Computers**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browser</td>
<td>• Microsoft Edge</td>
</tr>
<tr>
<td></td>
<td>• Microsoft Internet Explorer 9.0 or later</td>
</tr>
<tr>
<td></td>
<td>• Chrome for Windows 33.0 or later</td>
</tr>
<tr>
<td></td>
<td>• Firefox for Windows 25.0 or later</td>
</tr>
<tr>
<td></td>
<td>• Safari for macOS and iOS</td>
</tr>
</tbody>
</table>

Portal Web Server for Intranet Clients

A portal is not required to support Windows NT authentication. You can enable Windows NT authentication directly on the web site.

Single sign-on is only supported when the user that logs into IIS has been imported into the Workflow Manager database using Active Directory. The administrator can either import the complete group or only one user. If a complete group is imported, then all the members of the group can be logged into Workflow Manager using single sign-on.

The system requirements for this machine are the same as for the Workflow Manager Web Server.

Portal Web Server for Internet Clients

For better security and to manage access to the Workflow Manager Web Server, it is recommend to also set up a portal Web server for Internet clients.

If Workflow Manager needs to be accessed over the Internet, it is recommended to set up a portal Web server, residing in a demilitarized zone (DMZ). This Web server:

- accepts the requests from the Internet clients,
- forwards them to the Workflow Manager,
- gets responses from the Workflow Manager, and
- forwards them to the clients

You can configure the Workflow Manager to entertain the request only if it is coming from the Portal Web server, and otherwise reject the request. The Portal Web server manages access to Workflow Manager and ensures that clients are not able to access any data or documents without logging in.

The system requirements for this machine are the same as for Workflow Manager Web Server.
Workflow Manager System Account Requirements

The AMS_SYSTEM account on the Workflow Manager server requires the following privileges:

- **IIS_WPG group member**—Must be a member of the local IIS_WPG group (or IIS_USRS) on the web server.
- **Modify permissions on file share**—Must have “modify” permissions on the Workflow Manager file share.
- **Email permissions**—Must have permission to send e-mail through the SMTP server.
- **Active Directory query permission**—Must have permission to query Active Directory.
- **Local Administrators group member**—If Workflow Manager will be calling any of the AdminStudio Platform APIs in the iPlugin DLL, the AMS_SYSTEM account must be a member of the local Administrators group.

Installing Internet Information Services (IIS)

Internet Information Services (IIS) Version 7 or later is required to be installed on the machine on which you are installing Workflow Manager.

For instructions on how to install IIS, see the following information on the Microsoft web site:

- **Installing IIS 7 on Windows Server 2008 or Windows Server 2008 R2**
  http://www.iis.net/learn/install/installing-iis-7/installing-iis-7-and-above-on-windows-server-2008-or-windows-server-2008-r2

- **Installing IIS 8 on Windows Server 2012**
  http://www.iis.net/learn/get-started/whats-new-in-iis-8/installing-iis-8-on-windows-server-2012
Chapter 2 System Requirements
Installing Internet Information Services (IIS)
Installing Workflow Manager

This chapter explains how to install Workflow Manager, and also how to use scripts to either create or upgrade an existing database.

- Preparing to Install
- Running the Workflow Manager Installer
- Installing a Web Portal on a Different Server
- Using Scripts to Create or Update a Workflow Manager Database

**Tip** • For a complete list of known issues that pertain to Workflow Manager, see the AdminStudio Support Knowledge Base.

**Note** • Workflow Manager can be installed side-by-side an earlier version of Workflow Manager. If you already have Workflow Manager installed, the Workflow Manager installer will install the application to the next available port.

Preparing to Install

Before running the Workflow Manager installation, perform these tasks:

- Checking System Requirements
- Checking Workflow Manager System Account Requirements
- Obtaining Your License File
- Gathering Required Information
- Enabling Roles and Features in Windows Server 2012
- Installing a New Version of Workflow Manager on a Server That Has a Previous Version Installed
Checking System Requirements

Workflow Manager components should be installed on a dedicated server. To perform a successful installation, check the System Requirements to make sure that the following requirements have been met:

Table 3-1 • System Requirements Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Server</td>
<td>Make sure that you have an SQL Server which meets the requirements listed in Workflow Manager / AdminStudio Database Server. Check that this SQL Server is running properly by launching the Enterprise Manager and connecting to the server.</td>
</tr>
<tr>
<td>Database Server Account</td>
<td>Make sure you have a database owner account ID and password for the SQL Server that you are installing the Workflow Manager database on.</td>
</tr>
<tr>
<td>Workflow Manager</td>
<td>The machine on which you will be installing Workflow Manager must meet the hardware and software requirements specified in Workflow Manager Web Server.</td>
</tr>
<tr>
<td>File Share Server</td>
<td>The machine which you will designate as the file share server must meet the hardware and software requirements specified in File Share Server.</td>
</tr>
<tr>
<td>Internet Information Services (IIS)</td>
<td>Internet Information Services (IIS) must be installed on the machine on which you will be installing Workflow Manager before you will be permitted to run the installation. See Installing Internet Information Services (IIS).</td>
</tr>
<tr>
<td>.NET Framework</td>
<td>The .NET framework is required to be installed on the machine on which you will be installing Workflow Manager. However, if the .NET framework has not yet been installed on that machine, it will be installed as part of the installation.</td>
</tr>
<tr>
<td>Domain Account</td>
<td>The Domain Account is used for uploading and downloading files and for sending emails. Any operation that needs higher privileges is performed by impersonating the Domain Account. You can set the name of this Domain Account or specify an existing user as the Domain Account on the Logon Information Panel.</td>
</tr>
<tr>
<td>Static IP Addresses</td>
<td>Two static IP addresses need to be specified during installation—one for the Workflow Manager and the other for the Web Portal. For instructions on assigning static IP addresses to a machine, see Assigning Static IP Addresses to a Server.</td>
</tr>
</tbody>
</table>

Checking Workflow Manager System Account Requirements

The AMS_SYSTEM account on the Workflow Manager server requires the following privileges:

- **IIS_WPG group member**—Must be a member of the local IIS_WPG group (or IIS_USRS) on the web server.
- **Modify permissions on file share**—Must have “modify” permissions on the Workflow Manager file share.
- **Email permissions**—Must have permission to send e-mail through the SMTP server.
- **Active Directory query permission**—Must have permission to query Active Directory.
- **Local Administrators group member**—If Workflow Manager will be calling any of the AdminStudio Platform APIs in the iPlugin DLL, the AMS_SYSTEM account must be a member of the local Administrators group.
Chapter 3 Installing Workflow Manager
Preparing to Install

Obtaining Your License File

Workflow Manager is activated by uploading a license file. The number of items listed in the Workflow Manager navigation bar depend upon which products are activated.

Workflow Manager is activated by uploading a license file using the AdminStudio Configuration Wizard. When that license expires, or if you purchase additional functionality, you will need to upload an updated license file.

• Obtaining Your License File
• Uploading a License File Using the AdminStudio Configuration Wizard

Obtaining Your License File

License files are attached to your order confirmation email that you received from Flexera Software Orders Department. You can also obtain your license file from the Flexera Software Product and License Center. To obtain your Workflow Manager license file, perform the following steps:

**Task**

<table>
<thead>
<tr>
<th>To obtain a Workflow Manager license file:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Log on to the Flexera Software Product and License Center:</td>
</tr>
<tr>
<td><a href="https://flexerasoftware.flexnetoperations.com">https://flexerasoftware.flexnetoperations.com</a></td>
</tr>
<tr>
<td>2. In the left navigation, under <strong>Entitlements</strong>, click <strong>Product List</strong>.</td>
</tr>
<tr>
<td>• If you have access to multiple products, the <strong>Product List</strong> page opens and lists all of the products to which your account is entitled. Click the <strong>Workflow Manager</strong> link to proceed to the <strong>Product Information</strong> page.</td>
</tr>
<tr>
<td>• If you do not have access to multiple products, clicking the <strong>Product List</strong> link opens the <strong>Product Information</strong> page directly.</td>
</tr>
<tr>
<td>3. In the <strong>Product and File Downloads</strong> column, click the Workflow Manager link for the version that you want to download a license file for. The <strong>Product Download</strong> page opens.</td>
</tr>
<tr>
<td>4. Open the <strong>Licenses</strong> tab.</td>
</tr>
<tr>
<td>5. Click the download button next to the license file.</td>
</tr>
</tbody>
</table>

Uploading a License File Using the AdminStudio Configuration Wizard

After installation, the AdminStudio Configuration Wizard automatically opens and you are prompted to upload a license file. Until you upload the license file, you will be unable to open the Workflow Manager website. Also, when you license file is nearing its expiration date, you will need to use the AdminStudio Configuration Wizard to upload an updated license file. For instructions, see Configuring Using the AdminStudio Configuration Wizard.

Gathering Required Information

To complete the installation of Workflow Manager, you will need the following information. Please print this page and fill in the blanks below for use during the setup. You may need to consult with your network administrator to determine some of this information. Details on this information can be found on the following pages.
Enter the following information specific to the SQL Server database that you are going to use for the Workflow Manager.

Table 3-2 • SQL Server Database Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Server Name:</td>
<td></td>
</tr>
<tr>
<td>SQL Database Name:</td>
<td></td>
</tr>
<tr>
<td>Database Owner User ID and Password for this SQL Database:</td>
<td></td>
</tr>
<tr>
<td>File Server Domain (UNC Path):</td>
<td></td>
</tr>
<tr>
<td>Workflow Manager Static IP Address:</td>
<td></td>
</tr>
<tr>
<td>Portal IP Address:</td>
<td></td>
</tr>
</tbody>
</table>

Enabling Roles and Features in Windows Server 2012

If you are installing Workflow Manager on Windows Server 2012, it is recommended that you perform the following steps to enable roles and features.

Task

To enable roles and features in Windows Server 2012:

1. Open the Windows Server 2012 Server Manager.
2. Open the Add Roles and Features wizard.
3. Select Server Roles in the tree. A list of roles is displayed.
4. Under **Server Roles**, expand **Web Server (IIS) > Web Server**, and select all of the roles in the following subsections (except where noted):

- **Application Development**
- **Security**
- **Performance**
- **Health and Diagnostics** (select all subroles except **ODBC Logging**)
- **Common HTTP Features** (select all subroles except **WebDAV Publishing**)

5. Select **Features** in the tree. A list of features is displayed.
6. Under Features, select the following features:

- .NET Framework 3.5 Features
  - .NET Framework 3.5 (includes .NET 2.0 and 3.0)
  - HTTP Activation
- .NET Framework 4.5 Features
  - .NET Framework 4.5
  - ASP.NET 4.5
- WCF Services (select all subfeatures except Message Queuing (MSMQ Activation))
- Background Intelligent Transfer Service
  - IIS Server Extension
  - Compact Server
- SMB 1.0/CIFS File Sharing Support
- Windows Process Activation Service
- Remote Server Administration Tools > Feature Administration Tools > BITS Server Extensions Tools
- WoW64 Support
Installing a New Version of Workflow Manager on a Server That Has a Previous Version Installed

Starting with Workflow Manager 2019, when you install a new version of Workflow Manager on a server that already has a previous version installed on it, the installer will update the existing version to the new version. When the Workflow Manager releases an Update, the updated installer will upgrade the existing version in the same instance.

Running the Workflow Manager Installer

This section explains how to run the Workflow Manager installer.

Note • Workflow Manager can be installed side-by-side an earlier version of Workflow Manager. If you already have Workflow Manager installed, the Workflow Manager installer will install the application to the next available port.

To install Workflow Manager, perform the following steps.

Task | To install Workflow Manager:

1. Launch the installation program. The Welcome panel opens.

    Note • If you are installing Workflow Manager on a Windows Server 2012 R2 x64 machine and you have not already installed Windows Update for Microsoft KB2919355, you will first see a panel that prompts you to make sure that your machine is up-to-date on all Windows updates before proceeding.

    Note • If installing from a compressed version of the installation software, you may be prompted for a password when you attempt to extract the installation program. This password can be found in the Order Confirmation email you received when you purchased this product.

    Note • If not already installed, before the Welcome panel opens, you will be first prompted to install MSXML, Microsoft .NET Framework Component, and Microsoft ReportViewer.

2. Click Next. The License Agreement panel opens.

3. Select the I accept the terms of the license agreement option and click Install. The Custom Setup panel opens.

4. Select Application Website and click Next. The Destination Folder panel opens.

5. If you want to change the default installation directory of Workflow Manager, click the Change button and select a different directory.

    Important • It is recommended that you do not install Workflow Manager in the Program Files or Program Files (x86) directory.
6. Click **Install**. The **Installing Workflow Manager** panel opens.

   **Note** • A reboot may be required during installation.

   When installation is complete, **InstallShield Wizard Completed** is displayed.

7. Click **Finish** to close the installer and launch the AdminStudio Configuration Wizard.

8. Continue with the steps in Configuring Using the AdminStudio Configuration Wizard.

### Installing a Web Portal on a Different Server

For better security and to manage access to the Workflow Manager Web Server, it is recommend to also set up a portal Web server for Internet clients.

When you run the main Workflow Manager setup, you have options to set up a Web Portal (used to access the Workflow Manager website) on the same machine that you have installed the Workflow Manager website. However, if you want to install a Web Portal on a separate machine (typically in an Internet scenario), you can run the Web Portal setup separately.

**Note** • Starting with Workflow Manager 5.6, a web portal is no longer required to support Windows NT authentication for Intranet clients. You can enable Windows NT authentication directly on the web site. For more information, see Portal Web Server for Intranet Clients.

### Task

**To install a Workflow Manager Web Portal:**

1. Launch the installation program. The **Welcome** panel opens.

   **Note** • If you are installing Workflow Manager on a Windows Server 2012 R2 x64 machine and you have not already installed Windows Update for Microsoft KB2919355, you will first see a panel that prompts you to make sure that your machine is up-to-date on all Windows updates before proceeding.

   **Note** • If installing from a compressed version of the installation software, you may be prompted for a password when you attempt to extract the installation program. This password can be found in the Order Confirmation email you received when you purchased this product.

   **Note** • If not already installed, before the **Welcome** panel opens, you will be first prompted to install MSXML, Microsoft .NET Framework Component, and Microsoft ReportViewer.

2. Click **Next**. The **License Agreement** panel opens.

3. Click **Next**. The **License Agreement** panel opens.

4. Select the **I accept the terms of the license agreement** option and click **Next**. The **Custom Setup** panel opens.
5. Select **Portal Website** and click **Install**. The **Installing Workflow Manager** panel opens. When installation is complete, **InstallShield Wizard Completed** is displayed.

6. Click **Finish** to close the installer and launch the AdminStudio Configuration Wizard.

7. In order to set the system account, locate the following file on the machine where you installed the web portal:

   [WorkflowManagerWebPortalInstallDirectory]\web.config

8. Open the **web.config** file and locate the keys:

   ```xml
   <add key="RemoteServer" value="IP_Address" />
   <add key="AMS_SystemUsername" value="User_Name" />
   <add key="AMS_SystemPassword" value="Password" />
   <add key="AMS_SystemDomain" value="Domain_Name" />
   ```

   **Note**: Workflow Manager performs many operations, such as sending emails and uploading/downloading files, by impersonating the user specified here. This user is known as the System Account. Any operation that needs higher privileges is performed by impersonating the System Account.

9. Enter the following values:

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RemoteServer</td>
<td>Enter the IP address and port (if necessary) of the machine where the Workflow Manager website is installed.</td>
</tr>
<tr>
<td>AMS_SystemUsername</td>
<td>Enter the user account and password of an account that has permissions on the Workflow Manager website machine.</td>
</tr>
<tr>
<td>AMS_SystemPassword</td>
<td></td>
</tr>
<tr>
<td>AMS_SystemDomain</td>
<td>Enter the domain of the user account name listed above.</td>
</tr>
</tbody>
</table>

---

**Managing Multiple Workflow Manager Instances on the Same Server**

If you are already an existing customer of Workflow Manager, you can upgrade your instance to a new major version, while also being able to use your previous instances.

- **Types of Workflow Manager Releases**
- **Configuring Multiple Instances of Workflow Manager**
- **Upgrading to Minor Versions of Workflow Manager**

**Types of Workflow Manager Releases**

In Workflow Manager user interface, you can see the version details of any installed instance in the left corner of the footer. The version of a Workflow Manager instance consist of 8 digits. For example, if the version is **18.02.2107**:

- **18** - The first two digits indicate the Major Version.
Configuring Multiple Instances of Workflow Manager

You can install multiple instances of Workflow Manager (Major Version) on the same server, and you can use one instance at a time. For example, you can have Workflow Manager 2018 Update 2 and Workflow Manager 2019 installed on the same server, but you can use only one instance at a time.

Whether or not you have two instances of Workflow Manager available depends upon whether the second installation is a major version or a minor version:

<table>
<thead>
<tr>
<th>If you ...</th>
<th>Number of instances available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install a two different major versions of Workflow Manager on the same server ...</td>
<td>Two different instances of Workflow Manager will get created, as described in Configuring Multiple Instances of Workflow Manager. For example, if you already have Workflow Manager 18.00.1635 installed and then you install Workflow Manager 19.02.2107 on the same server, both the instances of Workflow Manager will be available.</td>
</tr>
<tr>
<td>Install a minor version for the major version which is already installed on the same server ...</td>
<td>The major version will be upgraded to the minor version, and only one instance of Workflow Manager will be available. For example, if you already have major version of Workflow Manager 18.00.1635 installed, and then you install minor version of Workflow Manager 18.02.2107 on the same server, only one instance of Workflow Manager will be available: 18.02.2107.</td>
</tr>
</tbody>
</table>

To configure multiple instances of Workflow Manager, perform the following steps.

**Task**

1. Open Internet Information Services (IIS) Manager

   *Note* • Enter INETMGR in the Run dialog box (Windows + R) to open the Internet Information Services (IIS) Manager
2. Expand the server tree on the left, under Sites you can see a list of installed Workflow Manager Instances. For example, both Workflow Manager 2018 and 2019 could be listed.

3. Under Sites, a list of allotted port numbers for the installed applications will be listed in the Binding column. To change the port number, right click on the application site and select Edit Bindings. The Site Bindings wizard opens.

4. In the Site Bindings wizard, click Edit. The Edit Site Binding dialog box opens.

5. Edit the port number and click OK.

6. To start the Workflow Manager website, select the Workflow Manager Instance under the server tree, and under Manage Websites, click Start.

   You can stop other instances while you are using one instance.

## Upgrading to Minor Versions of Workflow Manager

Flexera releases minor versions of Workflow Manager to include the bug fixes or enhancements for the features or functionalities which are introduced in a major version of Workflow Manager.

For example, let’s say that new features are introduced in the major version 18.00.1635 and enhancements are added to the minor version 18.01.2107. Because the major version is already installed in your server, if you install the minor version on the same server, only one instance of Workflow Manager with the version of 18.01.2107 will be available because the first two digits of minor and major version are same: 18, as described in Types of Workflow Manager Releases.

To upgrade to a minor version of Workflow Manager for the same major version already installed on your server, you must first uninstall the older version of Workflow Manager.

To upgrade an older major version of Workflow Manager to a minor version of the same release, perform the following steps.

<table>
<thead>
<tr>
<th>Task</th>
<th>To upgrade to a minor version of Workflow Manager:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Uninstall the older major version of Workflow Manager.</td>
</tr>
<tr>
<td>2.</td>
<td>Download the installer for the minor version of Workflow Manager from the Flexera Product and License Center.</td>
</tr>
<tr>
<td>3.</td>
<td>Launch the installer you downloaded. Follow the instructions in the Installation Wizard until installation is completed.</td>
</tr>
<tr>
<td>4.</td>
<td>After successful installation, the AdminStudio Configuration Wizard will automatically launch.</td>
</tr>
</tbody>
</table>
5. On the Create or Update an AdminStudio database panel of the AdminStudio Configuration Wizard, provide the details and credentials of the SQL Server and database that was used in the older version of Workflow Manager.

6. Follow the instructions in the Configuration Wizard until it is completed. The wizard will upgrade the database and make it compliant with the new version of Workflow Manager.

7. Refresh/restart IIS on the Workflow Manager server.

8. After performing these steps, you can launch the updated version of Workflow Manager.

Using Scripts to Create or Update a Workflow Manager Database

Because of security concerns, some database administrators may be hesitant to grant to Workflow Manager or AdminStudio users the database rights necessary to create or upgrade an Application Catalog database using SQL Server. Consequently, the database administrator must manually create or upgrade the database using scripts and provide the necessary read and write access for users to that database.

Workflow Manager and AdminStudio are shipped with database creation and upgrade SQL scripts to make it easy for database administrators to manually create or upgrade Workflow Manager / AdminStudio databases.

- Using Scripts to Create the Workflow Manager Database
- Using Scripts to Upgrade Existing AdminStudio/Workflow Manager Tables

Using Scripts to Create the Workflow Manager Database

You can choose to create the Workflow Manager Application Catalog database as part of the main installation, or you can choose to create an SQL Server database manually using scripts.
**Scripts to Run**

When creating a Workflow Manager / AdminStudio database using scripts, you need to execute both standard scripts and scripts for plug-ins:

- **Standard Scripts**
- **Plug-In Scripts**

**Standard Scripts**

Workflow Manager and AdminStudio are shipped with the following database creation SQL scripts:

**Table 3-4 • Scripts to Create Workflow Manager / AdminStudio Databases on SQL Server**

<table>
<thead>
<tr>
<th>Script Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMS_System_Schema.SQL</td>
</tr>
<tr>
<td>WFM_System_Data.SQL</td>
</tr>
<tr>
<td>AMSCreateIndex.SQL</td>
</tr>
<tr>
<td>WFM_SampleTemplates.SQL</td>
</tr>
<tr>
<td>AS,System_Schema.SQL</td>
</tr>
<tr>
<td>AS_ApplicationModel.SQL</td>
</tr>
<tr>
<td>OsSecurityPatch.SQL</td>
</tr>
<tr>
<td>MergeModule.SQL</td>
</tr>
<tr>
<td>PredeploymentTest.SQL</td>
</tr>
<tr>
<td>SystemManagementServer.sql</td>
</tr>
<tr>
<td>WFM_JobManager.SQL</td>
</tr>
<tr>
<td>AS_TestCenter_Schema.SQL</td>
</tr>
<tr>
<td>Seed_Data.SQL</td>
</tr>
<tr>
<td>AS_ApplicationModelSeedData.SQL</td>
</tr>
<tr>
<td>AS_TestCenter_SeedData.SQL</td>
</tr>
<tr>
<td>CustomReportWizard.SQL</td>
</tr>
<tr>
<td>AS_StoredProcedures.SQL</td>
</tr>
<tr>
<td>VirtualizationReadiness.SQL</td>
</tr>
<tr>
<td>AS_UI_Support.sql</td>
</tr>
<tr>
<td>GroupPackageTree.SQL</td>
</tr>
<tr>
<td>AS_TestCenter_StoredProcedures.SQL</td>
</tr>
<tr>
<td>Reporting.StoredProcedures.SQL</td>
</tr>
<tr>
<td>ApplicationExtendedAttributes.SQL</td>
</tr>
<tr>
<td>MobileTables.sql</td>
</tr>
<tr>
<td>MobileProgrammability.sql</td>
</tr>
<tr>
<td>MobileSeedData.sql</td>
</tr>
<tr>
<td>DAR_Schema.sql</td>
</tr>
<tr>
<td>AS_ShimDB_Schema.sql</td>
</tr>
<tr>
<td>AS_ShimDB_SeedData.sql</td>
</tr>
</tbody>
</table>

The scripts that you can use to create databases can be found in subdirectory called SQL_Scripts in the following locations:

**Table 3-5 • Location of Database Creation Scripts**

<table>
<thead>
<tr>
<th>Installation</th>
<th>Default Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdminStudio Client Tools</td>
<td>[AdminStudioInstallDirectory]\Support\SQL_Scripts</td>
</tr>
</tbody>
</table>
You can also find the list of the standard scripts that you are required to run to create a new database in the following nodes of the upgrade.xml file (in the AdminStudio Support folder):

//AdminStudioUpgrade/WorkflowManager/Create/SQLServer
//AdminStudioUpgrade/AdminStudio/Create/SQLServer

**Plug-In Scripts**

In addition to the standard scripts, you also need to run all of the SQL script files for plug-ins, which are found in the following directories:

**Table 3-6 • Location of Plug-in Scripts**

<table>
<thead>
<tr>
<th>Installation</th>
<th>Default Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdminStudio Client Tools</td>
<td>[AdminStudioInstallDirectory]\Common\Plugins</td>
</tr>
<tr>
<td>Workflow Manager</td>
<td>C:\AdminStudioWebComponents_v20\Support\SQL_Scripts</td>
</tr>
</tbody>
</table>

Because AdminStudio provides extensible plug-in functionality, the list of SQL scripts in this directory is not fixed. However, the following table lists the plug-in scripts that are shipped with the product:

**Table 3-7 • Plug-In Scripts**

- AirWatch.sql
- Altiris.sql
- ApkDeepLink.sql
- AppV.sql
- AppV5Conversion.sql
- AppvServer.sql
- AutomatedApplicationConverter.sql
- Casper.sql
- IpaDeepLink.sql
- Msi.sql
- WebDeploy.sql
- XenApp.sql
- Xpf.sql

**Important** • The order in which these scripts are run is not important; however, they must be run after the set of scripts listed in Standard Scripts.
Creating an Application Catalog Using Scripts

To create a Workflow Manager / AdminStudio Application Catalog database on SQL Server, perform the following steps:

1. Log on to your SQL Server.
2. Launch the Enterprise Manager and Query Analyzer.
3. In Query Analyzer, execute a `CREATE DATABASE` command to create and identify the new Application Catalog database.
4. Select the newly created database in Query Analyzer.
5. Execute the following scripts in this order:
   - AMS_System_Schema.SQL
   - WFM_System_Data.SQL
   - AMSCreateIndex.SQL
   - WFM_SampleTemplates.SQL
   - AS_System_Schema.SQL
   - AS_ApplicationModel.SQL
   - OsSecurityPatch.SQL
   - MergeModule.SQL
   - PredeploymentTest.SQL
   - SystemManagementServer.sql
   - WFM_JobManager.SQL
   - AS_TestCenter_Schema.SQL
   - Seed_Data.SQL
   - AS_ApplicationModelSeedData.SQL
   - AS_TestCenter_SeedData.SQL
   - CustomReportWizard.SQL
   - AS_StoredProcedures.SQL
   - VirtualizationReadiness.SQL
   - AS_UF_Support.sql
   - GroupPackageTree.sql
   - AS_TestCenter_StoredProcedures.sql
   - Reporting.StoredProcedures.SQL
   - ApplicationExtendedAttributes.SQL
   - MobileTables.sql
   - MobileProgrammability.sql
   - MobileSeedData.sql
   - DAR_Schema.sql
   - AS_ShimDB_Schema.sql
   - AS_ShimDB_SeedData.sql
6. Execute all of the SQL Plug-In Scripts. By default, the following plug-in scripts are shipped with the product:
   - AirWatch.sql
   - Altiris.sql
   - ApkDeepLink.sql
   - AppV.sql
   - AppV5Conversion.sql
   - AppvServer.sql
   - AutomatedApplicationConverter.sql
   - Casper.sql
   - IpadeepLink.sql
Using Scripts to Upgrade Existing AdminStudio/Workflow Manager Tables

Before running the setup, if you created the database manually in a previous release, perform these steps to upgrade the database to the existing AdminStudio/Workflow Manager tables.

Note • It is recommended that you use the AdminStudio Configuration Wizard to upgrade your database. However, if you created it manually in a previous release, and want to continue to do so, perform these steps.

Important • This is an advanced method of upgrading a database which requires running scripts manually on a database server.

Task To upgrade an existing Application Catalog database:

1. Open the CSSYSSCHEMAINFO table of your existing Application Catalog database, and locate the record with the highest SchemaVersion value. This is the SchemaVersion that you are upgrading from.

2. Locate the same SchemaVersion number in the table below, and note the corresponding Product Version number.

3. Run all of the scripts listed in the Scripts to Run column for that Product Version, in order.

4. Next, run all of the scripts listed in the Scripts to Run column for subsequent product versions. If a script listed in a subsequent product version has already been run, it does not need to be run again.

For example, if you are upgrading from SchemaVersion 13286609, first run all of the scripts in the 14.0 row of the table, and then run all of the scripts in the 14.01 row of the table that have not already been run.

<table>
<thead>
<tr>
<th>Product Version (SchemaVersion) Upgrading From</th>
<th>Product Version Upgrading To</th>
<th>Scripts to Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00 (13286602)</td>
<td>12.01</td>
<td>1201Upgrade.sql</td>
</tr>
<tr>
<td>12.01 (13286603)</td>
<td>12.02</td>
<td>DarwinFixes.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1202Upgrade.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1202UpgradeWFM.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1202UpgradeWFMEmailTemplate1.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1202UpgradeWFMEmailTemplate2.sql</td>
</tr>
<tr>
<td>Product Version (SchemaVersion) Upgrading From</td>
<td>Product Version Upgrading To</td>
<td>Scripts to Run</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>12.02 (13286605)</td>
<td>13.00</td>
<td>AS_System_Schema.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_ApplicationModel.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OsSecurityPatch.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MergeModule.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PredeploymentTest.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SystemManagementServer.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WFM_JobManager.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_TestCenter_Schema.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CustomReportWizard.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VirtualizationReadiness.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GroupPackageTree.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_TestCenter_StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reporting.StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ApplicationExtendedAttributes.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MobileTables.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MobileProgrammability.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1300Upgrade.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MobileSeedDataEUCLID.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1301UpgradeWFM.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1302UpgradeWFM.SQL</td>
</tr>
</tbody>
</table>

You also need to run any SQL scripts that are found in the Common\Plugins directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- AppV.sql
- AppvServer.sql
- Msi.sql
- XenApp.sql
- Xpf.sql
<table>
<thead>
<tr>
<th>Product Version (SchemaVersion) Upgrading From</th>
<th>Product Version Upgrading To</th>
<th>Scripts to Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00 (13286607)</td>
<td>14.00</td>
<td>AS_System_Schema.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_ApplicationModel.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OsSecurityPatch.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MergeModule.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PredeploymentTest.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SystemManagementServer.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WFM_JobManager.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_TestCenter_Schema.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CustomReportWizard.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VirtualizationReadiness.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_UI_Support.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GroupPackageTree.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AS_TestCenter_StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reporting.StoredProcedures.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ApplicationExtendedAttributes.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MobileTables.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MobileProgrammability.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1400Upgrade.sql</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DARSchemaUpdate.sql</td>
</tr>
</tbody>
</table>

You also need to run any SQL scripts that are found in the Common\Plugins directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- AppV.sql
- AppvServer.sql
- Msi.sql
- XenApp.sql
- Xpf.sql
### Using Scripts to Create or Update a Workflow Manager Database

<table>
<thead>
<tr>
<th>Product Version (SchemaVersion)</th>
<th>Product Version Upgrading To</th>
<th>Scripts to Run</th>
</tr>
</thead>
</table>
| 14.0 (13286609)                 | 14.01                       | AS_System_Schema.sql
                                          |                | AS_ApplicationModel.sql
                                          |                | OsSecurityPatch.sql
                                          |                | MergeModule.sql
                                          |                | PredeploymentTest.sql
                                          |                | SystemManagementServer.sql
                                          |                | WFM_JobManager.sql
                                          |                | AS_TestCenter_Schema.sql
                                          |                | CustomReportWizard.sql
                                          |                | AS_StoredProcedures.sql
                                          |                | VirtualizationReadiness.sql
                                          |                | AS_UI_Support.sql
                                          |                | GroupPackageTree.sql
                                          |                | AS_TestCenter_StoredProcedures.sql
                                          |                | Reporting.StoredProcedures.sql
                                          |                | ApplicationExtendedAttributes.sql
                                          |                | MobileTables.sql
                                          |                | MobileProgrammability.sql
                                          |                | AS_ShimDB_Schema.sql
                                          |                | AS_ShimDB_SeedData.sql
                                          |                | 1401Upgrade.sql
                                          |                | 1401UpgradeWFM.sql
                                          |                | 1401UpgradeAIR.sql
                                          |                | 1401UpgradeAIRProjectData.sql

You also need to run any SQL scripts that are found in the `Common\Plugins` directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- AppV.sql
- AppvServer.sql
- Msi.sql
- WebDeploy.sql
- XenApp.sql
- Xpf.sql
### Using Scripts to Create or Update a Workflow Manager Database

You also need to run any SQL scripts that are found in the `Common\Plugins` directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- ApkDeepLink.sql
- AppV.sql
- AppV5Conversion.sql
- AppvServer.sql
- AutomatedApplicationConverter.sql
- Casper.sql
- IpadeepLink.sql
- Msi.sql
- WebDeploy.sql
- XenApp.sql
- Xpf.sql

<table>
<thead>
<tr>
<th>Product Version (SchemaVersion) Upgrading From</th>
<th>Product Version Upgrading To</th>
<th>Scripts to Run</th>
</tr>
</thead>
</table>
| 14.01 (13286611)                              | 15.00                       | AS_System_Schema.sql  
|                                               |                             | AS_ApplicationModel.sql  
|                                               |                             | OsSecurityPatch.sql  
|                                               |                             | MergeModule.sql  
|                                               |                             | PredeploymentTest.sql  
|                                               |                             | SystemManagementServer.sql  
|                                               |                             | WFM_JobManager.sql  
|                                               |                             | AS_TestCenter_Schema.sql  
|                                               |                             | CustomReportWizard.sql  
|                                               |                             | AS_StoredProcedures.sql  
|                                               |                             | VirtualizationReadiness.sql  
|                                               |                             | AS_UI_Support.sql  
|                                               |                             | GroupPackageTree.sql  
|                                               |                             | AS_TestCenter_StoredProcedures.sql  
|                                               |                             | Reporting.StoredProcedures.sql  
|                                               |                             | ApplicationExtendedAttributes.sql  
|                                               |                             | MobileTables.sql  
|                                               |                             | MobileProgrammability.sql  
|                                               |                             | 1500Upgrade.sql  
|                                               |                             | 1500UpgradeWF.M.sql  
|                                               |                             | 1500UpgradeAIR.sql  

You also need to run any SQL scripts that are found in the `Common\Plugins` directory. The following plug-in scripts are shipped with the product:
### Product Version (SchemaVersion) Upgrading From 15.0 (13286613)
### Product Version Upgrading To 15.01
### Scripts to Run

- AS_System_Schema.sql
- AS_ApplicationModel.sql
- OsSecurityPatch.sql
- MergeModule.sql
- PredeploymentTest.sql
- SystemManagementServer.sql
- WFM_JobManager.sql
- AS_TestCenter_Schema.sql
- CustomReportWizard.sql
- AS_StoredProcedures.sql
- VirtualizationReadiness.sql
- AS_UI_Support.sql
- GroupPackageTree.sql
- AS_TestCenter_StoredProcedures.sql
- Reporting.StoredProcedures.sql
- ApplicationExtendedAttributes.sql
- MobileTables.sql
- MobileProgrammability.sql
- AS_ShimDB_Schema.sql
- AS_ShimDB_SeedData.sql
- 1500UpgradeGalileoFix.sql
- 1501Upgrade.sql
- 1501UpgradeWFM.sql
- 1500UpgradeGalileoAIRFix.sql
- 1501UpgradeAIR.sql

You also need to run any SQL scripts that are found in the Common\Plugins directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- ApkDeepLink.sql
- AppV.sql
- AppV5Conversion.sql
- AppvServer.sql
- AutomatedApplicationConverter.sql
- Casper.sql
- IpaDeepLink.sql
- Msi.sql
- WebDeploy.sql
- XenApp.sql
- Xpf.sql
## Chapter 3  Installing Workflow Manager
### Using Scripts to Create or Update a Workflow Manager Database

<table>
<thead>
<tr>
<th>Product Version (SchemaVersion)</th>
<th>Upgrading From</th>
<th>Product Version</th>
<th>Upgrading To</th>
<th>Scripts to Run</th>
</tr>
</thead>
</table>
| 15.01 (13286615)                |                | 15.02           |              | AS_System_Schema.sql  
|                                 |                |                 |              | AS_ApplicationModel.sql  
|                                 |                |                 |              | OsSecurityPatch.sql  
|                                 |                |                 |              | MergeModule.sql  
|                                 |                |                 |              | PredeploymentTest.sql  
|                                 |                |                 |              | SystemManagementServer.sql  
|                                 |                |                 |              | WFM_JobManager.sql  
|                                 |                |                 |              | AS_TestCenter_Schema.sql  
|                                 |                |                 |              | CustomReportWizard.sql  
|                                 |                |                 |              | AS_StoredProcedures.sql  
|                                 |                |                 |              | VirtualizationReadiness.sql  
|                                 |                |                 |              | AS_UI_Support.sql  
|                                 |                |                 |              | GroupPackageTree.sql  
|                                 |                |                 |              | AS_TestCenter_StoredProcedures.sql  
|                                 |                |                 |              | Reporting.StoredProcedures.sql  
|                                 |                |                 |              | ApplicationExtendedAttributes.sql  
|                                 |                |                 |              | MobileTables.sql  
|                                 |                |                 |              | MobileProgrammability.sql  
|                                 |                |                 |              | AS_ShimDB_Schema.sql  
|                                 |                |                 |              | AS_ShimDB_SeedData.sql  
|                                 |                |                 |              | 1502Upgrade.xml  

You also need to run any SQL scripts that are found in the Common\Plugins directory. The following plug-in scripts are shipped with the product:

- AirWatch.sql
- Altiris.sql
- ApkDeepLink.sql
- AppV.sql
- AppV5Conversion.sql
- AppvServer.sql
- AutomatedApplicationConverter.sql
- Casper.sql
- IpaDeepLink.sql
- Msi.sql
- WebDeploy.sql
- XenApp.sql
- Xpf.sql

---

**Note** • All of the information in this table can be found in the Upgrade.xml file, which is installed in the Support subdirectory of the AdminStudio installation directory. This file also includes information on upgrading from versions prior to version 12.0 (AdminStudio 2013).
This chapter explains how to perform post-installation Workflow Manager configuration.

- Configuring Using the AdminStudio Configuration Wizard
- Launching Workflow Manager
- Performing Other Configuration Tasks

Tip • For a complete list of known issues that pertain to the AdminStudio and Workflow Manager, see the AdminStudio Support Knowledge Base.

Configuring Using the AdminStudio Configuration Wizard

The AdminStudio Configuration Wizard automatically opens after you close the installer and prompts you to set Workflow Manager’s mandatory configuration settings: SQL Server database information, default connection, and location of your license file.

You can also open the AdminStudio Configuration Wizard at any time to update mandatory configuration settings, connect to the Flexera Service Gateway or set optional advanced configuration settings.

- Specifying Mandatory Configuration Settings
- Configuring Windows Authentication in Internet Information Services
- Connecting to the Flexera Service Gateway
- Setting Advanced Configuration Settings
Specifying Mandatory Configuration Settings

After running the installer, as described in Running the Workflow Manager Installer, the AdminStudio Configuration Wizard automatically opens. You will be prompted to enter the information described in Gathering Required Information, and you will be prompted to upload your license file.

**Note** • You are required to specify these mandatory settings immediately after installation. You can also update these settings at any time by launching the AdminStudio Configuration Wizard manually and selecting **Create/update AdminStudio database** and/or **Activate AdminStudio license** on the Welcome panel of the wizard. To manually launch the AdminStudio Configuration Wizard, open the following file:

C:\AdminStudioWebComponents_v20\Support\Config\Config.exe

**Task**  
**To specify settings in the AdminStudio Configuration Wizard:**

1. When installation is complete, the AdminStudio Configuration Utility will automatically launch. The **Create or Update an AdminStudio** database panel opens.
2. On the Create or Update an AdminStudio Database panel, you are prompted to enter the database server and database name of the database where you will be storing your Workflow Manager data, and login the credentials to that database. Enter the following information:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>Select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>• Create a new database</td>
</tr>
<tr>
<td></td>
<td>• Update/connect to an existing Workflow Manager or AdminStudio database</td>
</tr>
<tr>
<td></td>
<td><em>Note</em> • To connect an existing catalog by Windows Authentication which was created using Server Authentication, see Configuring Windows Authentication in Internet Information Services</td>
</tr>
<tr>
<td>Server</td>
<td>Either select a server from the list of available SQL Servers on the network, or manually enter the name of the SQL Server to which you want to connect.</td>
</tr>
<tr>
<td>Authentication</td>
<td>Select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>• Windows Authentication—Choose to use Windows network authentication (your network login ID) to log into this database.</td>
</tr>
<tr>
<td></td>
<td>• Server Authentication—Choose to use SQL Server login identification for authentication. If you choose this option, you need to also enter the appropriate User ID and Password.</td>
</tr>
<tr>
<td></td>
<td><em>Note</em> • Workflow Manager / App Portal integration only—If you plan to integrate Workflow Manager with App Portal, you must use Windows Authentication. Also, anonymous and forms authentication needs to be turned off for the site in IIS.</td>
</tr>
<tr>
<td>Database</td>
<td>If creating a new database, enter its name. If connecting to an existing database, enter its name or select the database name from the list.</td>
</tr>
</tbody>
</table>

3. Click Next. The Set Default Connection panel opens, prompting you to enter the default connection information for web site users.
Important • To connect to a catalog created using server authentication and now using Windows Authentication, see Configuring Windows Authentication in Internet Information Services

4. Do one of the following based upon the Authentication selection you made on the previous panel:

   - **Windows Authentication**—Enter the User ID and Password that the Web Sites Application Pool will run as in order to access the database.
   - **SQL Server Authentication**—Confirm that the User ID and Password that you entered in the previous panel are displayed here.

5. Click Next. The Configuration Settings: Administrative panel opens.
6. Specify the following settings:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollback keep condition</td>
<td>Not currently used.</td>
</tr>
<tr>
<td>Disable step-level SLA</td>
<td>If this option is selected, the Track for Workflow SLA option on the Template Details view is not available. That means that all workflow steps will be included in SLA calculations.</td>
</tr>
<tr>
<td>Show performance parameters</td>
<td>Not currently used.</td>
</tr>
<tr>
<td>Login page timeout value</td>
<td>Identifies the length of time that you can leave the login page open before it times out.</td>
</tr>
<tr>
<td>Default AdminStudio user work assignment</td>
<td>Specify which AdminStudio user is automatically assigned to an AdminStudio project that is created as part of a Workflow Manager phase.</td>
</tr>
<tr>
<td>SMTP Server Address</td>
<td>Enter the address of your email server.</td>
</tr>
<tr>
<td>Web Server Address</td>
<td>Edit to modify the Workflow Manager website IP address. By default, it is <a href="http://localhost/">http://localhost/</a>.</td>
</tr>
</tbody>
</table>

8. Enter the following information:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name</td>
<td>Enter a user name and password for the system account. Enter the user name in DOMAIN_NAME\USER_NAME format.</td>
</tr>
<tr>
<td>Password</td>
<td></td>
</tr>
<tr>
<td>Local file share directory will be created and shared on network</td>
<td>Select this option if your file share location is on the local machine.</td>
</tr>
<tr>
<td>Local file share install directory</td>
<td>Enter the local file share directory path.</td>
</tr>
<tr>
<td>Network share name</td>
<td>Specify the name of the shared directory when it is viewed from other machines in the network.</td>
</tr>
<tr>
<td>UNC path to existing shared folder on local or remote machine</td>
<td>Select this option if your file share location is in a shared folder on a local or remote machine, and enter the location in UNC path format.</td>
</tr>
</tbody>
</table>

9. Click Next. The Activation panel opens.
10. Click the browse button and upload your license file, and then click Next. The configuration begins and messages are displayed.

11. When the configuration steps are complete, click Finish to close the wizard.
Configuring Windows Authentication in Internet Information Services

Before connecting to an Application Catalog database created using Server Authentication to now use Windows authentication, you must configure Windows Authentication to be used under both Workflow Manager and Internet Information Services (IIS) Manager.

**Task**

*To configure the Windows authentication in the Internet Information Services (IIS Server) follow the below steps:*

1. Open Internet Information Services (IIS) Manager

   ![Open Internet Information Services (IIS) Manager](image)

   *Note* - Enter INETMGR in the Run dialog box (Windows + R) to open the Internet Information Services (IIS) Manager

2. Expand the Server tree on the left and click on Application Pools. Select AdminStudioWebComponentsv20 and choose Advanced Settings… on the Actions panel on the right.

   ![Select AdminStudioWebComponentsv20](image)

3. In the Advanced Settings panel, Select Identity under Process Model and click on the ellipse (...) button.
4. Under the **Application Pool Identity** panel, click on the **Custom account** radio button and click **Set**...

5. Under the **Set Credentials** Panel, type in the Windows user account user name and password that was provided in **AdminStudio Configuration Wizard** (Refer page 37).

6. Click **OK** on the **Set Credentials**, **Application Pool Identity**, and **Advanced Settings** dialog panels.

*Note* • Type the Windows account name using the DOMAIN\username format.
7. Click on **Recycle…** action on the Actions panel to recycle the Application Pool.

---

**Connecting to the Flexera Service Gateway**

The Flexera Service Gateway is a component that enables AdminStudio, Workflow Manager, App Portal, and FlexNet Manager Platform to communicate. When Workflow Manager is connected to the Flexera Service Gateway, you can connect an App Portal catalog item to a Workflow Manager workflow request.

In App Portal, you select an event that you want to trigger a Workflow Manager workflow (such as **On Submit Approval**) and the Workflow Manager project that you want to use. A workflow request is then created in Workflow Manager. When Workflow Manager completes the workflow request, the status in App Portal changes to **Complete**.

To connect Workflow Manager to the Flexera Service Gateway, perform the following steps:

**Task**

**To connect to the Flexera Service Gateway:**

1. Launch the following file on the machine where you installed Workflow Manager:

   ```
   C:\AdminStudioWebComponents_v20\Support\Config\Config.exe
   ```

   The AdminStudio Configuration Wizard Welcome panel opens.
2. Select **Configure Flexera Service Gateway** and click **Next**. The **Configuration Settings: Flexera Service Gateway** panel opens.

3. In the **Gateway Host Name** field, enter the name of your Flexera Service Gateway Server.

4. By default, the user name and login to the Flexera Service Gateway is **admin / admin**. If your organization is using a different user name and password, click **Advanced** and enter the appropriate credentials.
5. Leave the **Access Token** and **Application Recognition Service URL** fields blank.

*Note* • These fields are used if you have also purchased AdminStudio Inventory and Rationalization.

6. Click **Test** to test the connection. You should receive the following message:

Connection to Flexera Service Gateway successful!

7. Click **Next**. The configuration begins and messages are displayed.

8. When the configuration steps are complete, click **Finish** to close the wizard.

### Setting Advanced Configuration Settings

To set advanced Workflow Manager settings, perform the following steps:

**Task**  
**To set advanced configuration settings:**

1. Launch the following file on the machine where you installed Workflow Manager:

   ```
   C:\AdminStudioWebComponents_v20\Support\Config\Config.exe
   ```

   The AdminStudio Configuration Wizard Welcome panel opens.

2. Select **Update website configuration settings (Advanced)** and click **Next**. The Set Default Connection panel opens, prompting you to enter the default connection information for web site users.
3. Do one of the following based upon whether you are using Windows authentication or server authentication when connecting to the Workflow Manager database:

- **Windows Authentication**—Enter or edit the **User ID** and **Password** that the Web Sites Application Pool will run as in order to access the database.

- **SQL Server Authentication**—Confirm that the **User ID** and **Password** that you entered when you configured the database connection are displayed here.

4. Click **Next**. The **Configuration Settings: Administrative** panel opens.
5. Specify the following options:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollback keep condition</td>
<td>When a workflow request that contains branching is rolled back, the selections of the branching condition will be cleaned up. If this option is selected, the selection will be preserved and the workflow request will move forward through the same branches as it did before the rollback.</td>
</tr>
<tr>
<td>Disable step-level SLA</td>
<td>If this option is selected, the Track for Workflow SLA option on the Template Details view is not available. That means that all workflow steps will be included in SLA calculations.</td>
</tr>
<tr>
<td>Show performance parameters</td>
<td>Select this option to prevent individual user account names to be displayed in summary reports.</td>
</tr>
<tr>
<td>Login page timeout value</td>
<td>Identifies the length of time that you can leave the login page open before it times out.</td>
</tr>
<tr>
<td>Default AdminStudio user work assignment</td>
<td>Specify which AdminStudio user is automatically assigned to an AdminStudio project that is created as part of a Workflow Manager phase.</td>
</tr>
</tbody>
</table>

6. Click **Next**. The **Configuration Settings: Network Share** panel opens.
7. Specify the following options:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name</td>
<td>Enter a user name and password for the system account. Enter the user name in DOMAIN_NAME\USER_NAME format.</td>
</tr>
<tr>
<td>Password</td>
<td></td>
</tr>
<tr>
<td>Local file share directory will be created and shared on network</td>
<td>Select this option if your file share location is on the local machine.</td>
</tr>
<tr>
<td>Local file share install directory</td>
<td>Enter the local file share directory path.</td>
</tr>
<tr>
<td>Network share name</td>
<td>Specify the name of the shared directory when it is viewed from other machines in the network.</td>
</tr>
<tr>
<td>UNC path to existing shared folder on local or remote machine</td>
<td>Select this option if your file share location is in a shared folder on a local or remote machine, and enter the location in UNC path format.</td>
</tr>
</tbody>
</table>

8. Click Next. The configuration begins and messages are displayed.

9. When the configuration steps are complete, click Finish to close the wizard.

Launching Workflow Manager

After you perform the steps in Specifying Mandatory Configuration Settings, you are now ready to launch Workflow Manager.
Task | To launch Workflow Manager:
--- | ---
1. | Do one of the following:
   a. If you are on the machine where you installed Workflow Manager, select **Workflow Manager** from the Start menu.
   b. If you are on another machine in the network, open a browser window and enter the **Web Site IP Address** you specified on the **IP Address** panel, such as:
      ```
      http://111.22.333.44
      ```
      The **Workflow Manager Login** page opens:

      ![Workflow Manager Login Page]

2. | You can log on using the default administrator account of the default workflow administrator company.
   - **User Name**: admin@company.com
   - **Password**: admin

3. | Continue with the steps described in **Getting Started** in the Workflow Manager Help Library.

### Performing Other Configuration Tasks

You may want to perform some of the following configuration tasks:
- Additional Verification Steps After Installation
- Enabling Login to Workflow Manager Using Windows NT Authentication (Without Portal)
- Assigning Static IP Addresses to a Server
Additional Verification Steps After Installation

You may want to perform these additional verification steps after the installation is complete to ensure that Workflow Manager was installed properly.

**Task**

*To verify that installation was successful:*

You may want to perform these additional verification steps after the installation is complete to ensure that Workflow Manager was installed properly.

**Task**

*To verify that installation was successful:*

1. Open Internet Information Services (IIS) Manager.
2. Select your server name in the tree. The Home view opens.
3. Under IIS, select ISAPI and CGI Restrictions and select Open Feature from the context menu.
4. Make sure that all ASP .NET features have Allowed listed in the Restriction column.
5. In the tree under Sites, make sure that there is a node named AdminStudio Web Components v20
7. Make sure that AdminStudioWebComponents v20 is listed and that its Status is set to Started.
8. Open the Windows Services dialog box.
9. In the Services (Local) list, make sure that the Status of ASP.NET State Service is set to Started.

Enabling Login to Workflow Manager Using Windows NT Authentication (Without Portal)

To enable login to the Workflow Manager website using Windows NT authentication (without installing the Workflow Manager portal), perform the following steps:

**Task**

*To enable Windows NT Authentication without using a portal:*

1. On the Workflow Manager web server, open the Control Panel.
2. Click Administrative Tools. The Administrative Tools dialog box opens.
3. In the list, select Internet Information Services (IIS) Manager and select Open from the context menu. The Internet Information Services (IIS) Manager dialog box opens.
4. Expand the nodes in the tree, and under Sites, select AdminStudio Web Components v20. The Workflow Manager Application Home view opens.
5. Under IIS, select Authentication and select Open Feature from the context menu. The Authentication view opens.
7. Set Windows Authentication to Enabled.

Assigning Static IP Addresses to a Server

Perform the following steps to assign static IP addresses to a Server.

<table>
<thead>
<tr>
<th>Task</th>
<th>To assign static IP addresses to a server</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Log on to the Workflow Manager web server.</td>
</tr>
<tr>
<td>2.</td>
<td>Open the Network and Sharing Center.</td>
</tr>
<tr>
<td>3.</td>
<td>Click Change adapter settings. The Network Connections dialog box opens.</td>
</tr>
<tr>
<td>4.</td>
<td>Select your adapter and select Properties from the context menu. The Local Area Connection Properties dialog box opens.</td>
</tr>
<tr>
<td>6.</td>
<td>Enter the static IP address.</td>
</tr>
<tr>
<td>7.</td>
<td>If installing the Workflow Manager Portal on the same machine, you may want to add additional IP addresses. To add additional IP addresses, click Advanced. The Advanced TCP/IP Settings panel opens.</td>
</tr>
<tr>
<td>8.</td>
<td>Under IP addresses, click Add. The TCP/IP Address dialog box opens.</td>
</tr>
<tr>
<td>9.</td>
<td>Enter the IP address for the portal and click Add.</td>
</tr>
<tr>
<td>10.</td>
<td>Click OK to close the remaining dialog boxes.</td>
</tr>
</tbody>
</table>
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