



Workflow Manager 2015 / AdminStudio Enterprise Server 2015 Installation Guide

Legal Information

Version: Workflow Manager 2015 / AdminStudio Enterprise Server 2015 Installation Guide
Part Number: WFM-2015-IG03
Product Release Date: 10 September 2015

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1

AdminStudio Enterprise Server / Workflow Manager 2015 Installation Guide

Information about installing Workflow Manager / AdminStudio Enterprise Server is presented in the following sections:

Table 1-1 • Installing Workflow Manager / AdminStudio Enterprise Server

Topic	Content
System Requirements	Lists the hardware and software requirements for the components of Workflow Manager / AdminStudio Enterprise Server.
Installing Workflow Manager / AdminStudio Enterprise Server	Explains how to perform installation preparation tasks, and how to install Workflow Manager / AdminStudio Enterprise Server.
Configuring Workflow Manager / AdminStudio Enterprise Server	Performing post-installation configuration tasks, including how to use the AdminStudio Configuration Wizard.

Integration of AdminStudio Enterprise Server and Workflow Manager

The AdminStudio Enterprise Server tools are integrated with Workflow Manager and use the same security model and a single interface. You define users and roles/permissions for AdminStudio client tools, AdminStudio Enterprise tools, and Workflow Manager all from the same user interface. Security can still be server-based or Windows authenticated (LDAP).

The configuration of web tools that is available to you depends upon the software bundle that you purchased:

Table 1-2 • AdminStudio Enterprise Server and Workflow Manager Tool Bundles

Bundle Purchased	Security Console	Report Center	Workflow Manager
AdminStudio Enterprise Edition	Included	Includes AdminStudio component	
AdminStudio Workflow Manager	Included	Includes Workflow Manager component	Included
AdminStudio Enterprise Edition and AdminStudio Workflow Manager	Included	Includes both components	Included

Using Help

Help is available both from the product interface and directly from certain individual interface elements.

When you have questions about this product, first consult the Workflow Manager / AdminStudio Enterprise Server Help Library, which is the complete user's guide for using the product.

Web-Based Online Help

Web-based online help is available to you 24 hours a day, seven days a week, on our Web site at:

<http://helpnet.flexerasoftware.com>

Documentation as PDF

AdminStudio and Workflow Manager documentation is also available as a PDF. Visit the Flexera Software Documentation Center at:

<http://support.flexerasoftware.com/doc/>

Help Conventions

In this documentation, reader alert and style conventions are used to bring your attention to specific information or help you identify information.

- [Reader Alert Conventions](#)
- [Style Conventions](#)

Reader Alert Conventions

Reader alerts are used throughout this documentation to notify you of both supplementary and essential information. The following table explains the meaning of each alert.

Table 1-3 • Reader Alert Conventions








Image	Alert Name	Description
	Note	Notes are used to draw attention to pieces of information that should stand out.
	Important Note	Important notes are used for information that is essential for users to read.
	Caution	Cautions indicate that this information is critical to the success of the desired feature or product functionality.
	Tip	Tips are used to indicate helpful information that could assist you in better utilizing the desired function or feature.

Table 1-3 • Reader Alert Conventions (cont.)

Image	Alert Name	Description
	Best Practices	Best Practices alerts instruct you on the best way to accomplish a task.
	Edition-Specific Note	Edition-specific notes indicate that the information applies to a specific edition of a product (such as Professional or Premier edition).
	Procedure	The Procedure graphic indicates that procedural instructions follow.

Style Conventions

The following style conventions are used throughout this documentation.

Table 1-4 • Style Conventions

Style	Example	Description
User Interface Elements	On the File menu, click Open .	User interface elements appear in bold when referenced in tasks.
Variables	<i>fileName</i>	Variables appear in italics.
Code	<code>#define HWND_BROADCAST 0xffff</code>	Code snippets appear in a monospace typeface.
User-Inputted Text	Type <code>\$D(install)</code> .	Text that is to be entered as a literal value is displayed in a monospace typeface, in bold, and in blue.
File Names and Directory Paths	My files are located in the <code>C:\MyDocuments\SampleCode</code> directory.	File names and directory paths are presented in a monospace typeface.
.INI File Text	Insert the line <code>LimitedUI=Y</code> into the file to display only the Welcome dialog box when the Windows Installer package is run.	Text in .INI files is presented in a monospace typeface.
Command-Line Statements	To run the installation silently, enter: <code>Setup.exe /s /v/qn</code>	Command-line statements and parameters are presented in a monospace typeface.
Environment Variables	Set the value of the <code>windir</code> environment variable.	Environment variables are presented in a monospace typeface.
Examples	Create two groups, one called Admins and the other called General .	Examples are presented in bold.

Table 1-4 • Style Conventions (cont.)

Style	Example	Description
Functions	FeatureAddItem adds a new feature to a script-created feature set.	Functions are presented in presented in bold.
Properties	In the Name property, enter a name for this custom control that is unique among all of the controls in your project.	Properties are presented in bold.
Screen Output	If you type an incorrect parameter, the message <code>The system cannot find the path specified.</code> is displayed.	Screen output (from a log file or from the console) is displayed in a monospace typeface, and in blue.
Links	Obtain the latest modules, white papers, project samples, and more from: http://www.mycompany.com/downloads.htm	Links appear in blue.

Contacting Us

You may contact us from anywhere in the world by visiting our Web site at:

<http://www.flexerasoftware.com>

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System Requirements

Before beginning the installation, review the following hardware and software requirements. This information is presented in the following sections:

- [System Requirements](#)
- [Database Server Permissions](#)
- [Installing Internet Information Services \(IIS\)](#)

System Requirements


This section lists the system requirements for Workflow Manager / AdminStudio Enterprise Server.

- [Workflow Manager Web Server / AdminStudio Enterprise 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 / AdminStudio Enterprise 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 and/or AdminStudio Enterprise Server.

Table 2-1 • Workflow Manager Web Server / AdminStudio Enterprise Server

Item	Description
Processor	32-bit or 64-bit processor at 2 GHz or greater.  <i>Note</i> • AdminStudio Enterprise Server / Workflow Manager runs in 32-bit mode on a 64-bit OS.
RAM	4 GB or greater (8 GB preferred)
Hard Disk Space	100 GB or greater
Operating System	Windows Server 2008 R2 or later / English base language (Windows Server 2012 preferred)
IIS	IIS 7.0 or later
.NET Framework	.NET Framework 4.5.2 or later
ASP.NET	ASP.NET 4.0.30319 or later
MSXML	MSXML 4.0

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

Item	Description
Processor	32-bit or 64-bit processor at 2 GHz or greater
RAM	4 GB or greater (8 GB preferred)
Hard Disk Space	80 GB or greater
Operating System	Windows Server 2008 R2 or later (Windows Server 2012 preferred)
Database Software	<p>SQL Server 2008 R2 or later databases, including SQL Server 2012 and SQL Server 2014 (latest version preferred)</p> <ul style="list-style-type: none"> Dictionary sort order—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: <p><code>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</code></p> Collation setting—<code>SQL_Latin1_General_CP1_CI_AS</code> is the required collation setting for AdminStudio database server. It is the only supported collation.



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

Item	Description
Processor	2 GHz or greater
RAM	2 GB or greater
Hard Disk Space	1 TB or greater
Operating System	Windows Server 2008 R2 or later

Workflow Manager End User Computers

This following table lists the recommended system configuration for a Workflow Manager 2015 end user machine:

Table 2-4 • Workflow Manager End User Computers

Item	Description
Browser	<ul style="list-style-type: none">• Microsoft Internet Explorer 9.0 or later• Chrome for Windows 33.0 or later• Firefox for Windows 25.0 or later• Safari for Mac OS X and iOS

Portal Web Server for Intranet Clients

In previous releases of Workflow Manager, if you wanted to use Windows NT authentication for intranet clients, you were required to set up a portal web server. Starting with Workflow Manager 5.6, a portal is no longer 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 / AdminStudio Enterprise 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 / AdminStudio Enterprise Server,
- gets responses from the Workflow Manager / AdminStudio Enterprise Server, and
- forwards them to the clients

You can configure the Workflow Manager / AdminStudio Enterprise Server 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 / AdminStudio Enterprise Server 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 / AdminStudio Enterprise 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.

Database Server Permissions

In order to operate some AdminStudio tools, AdminStudio users require specific database permissions. Depending upon the type of user, you may wish to be more selective in the permissions you assign to these users.

If you have AdminStudio Enterprise Edition, you can assign permissions to individual users using the Role functionality in AdminStudio Enterprise Server, as described in the *AdminStudio and Workflow Manager Roles and Permissions* topic in the online help library. Otherwise, you can provide more selective restrictions at the database server level using the information in the following *AdminStudio Database Server Permissions* table.

Every AdminStudio user will need at a minimum read privilege to every table in the Application Catalog. The minimum permissions are described below, based upon the type of operation you want the user to perform.

Table 2-5 • AdminStudio Database Server Permissions

Type	Description
General User Administrative Process	<p>General administrative processes cover a range of activities such as adding groups, moving packages around, adding comments, updating extending attributes, etc. For example, these tables include cstblPackage, cstblGroups, and cstblGroupPackages. Any Application Catalog table which is not referenced explicitly in the discussion for the other AdminStudio processes should be considered a general user administrative table.</p> <p>Most AdminStudio users should have write access to these tables.</p>
Import Process	<p>The user importing MSI packages, merge modules, or just about anything will require write access to a significant set of Application Catalog tables depending on the type of import. For example:</p> <ul style="list-style-type: none">• MSI package file—For MSI package file import operations, those Application Catalog tables with a csmsi prefix are populated.• Merge modules—For merge module import operations, the csmsm prefixed tables are used.• Patches—For patch import operations, the cspch prefix tables are used.• OS snapshots—For OS snapshot import operations, the osc prefix tables are used. <p>Occasionally, the Import process will need to create new tables in the Application Catalog to support the import of custom table data. Either the necessary server privileges need to be given for these users, or the import of custom table data needs to be disabled within the Application Manager Options dialog box.</p>
Validation Process	<p>For this process, the user will need to be able to write entries into the cstblValidationResults and cstblValidationConfiguration tables.</p>
Dependency Scanning Process	<p>For this process, the user will need to be able to write entries into the cstblPackageExeDependencies table.</p>

Table 2-5 • AdminStudio Database Server Permissions (cont.)

Type	Description
Conflict Detection and Resolution Process	For this process, the user will need to be able to write entries into the csTblConflict prefixed table names.
Patch Impact Analysis Process	For this process, the user will need to be able to write entries into the csTblPatchConflict prefixed table names. This process will create and delete some temporary tables and, as such, the user performing this process should have the necessary server privileges to perform these operations.
Package Auto Import Process	The Package Auto Import process will ultimately generate a series of Import operations, and so the user performing these operations should have the Import process rights described above. If the user wants to edit these operations in the Wizard, then they will need write accession to the csTblSubscribed prefixed tables.
Workflow Operations Process	For this process, the user will need to be able to write entries into the wftbl prefixed table names.
Tools Properties Operations	For this process, the user will need to be able to write entries into the wftblTools table name.
Job Manager Process	For this process, the user will need to be able to write entries into the As prefixed table names.
Pre-Deployment Testing	For this process, the user will need to be able to write entries into the pdt prefixed table names.



Note • A number of processes within AdminStudio generate data which can subsequently be deleted by the AdminStudio user. Any discussion of the minimum privileges required for a specific AdminStudio process will also imply the privileges to delete this same data.

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 AdminStudio Enterprise Server / 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>

3

Installing Workflow Manager / AdminStudio Enterprise Server

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

- [Preparing to Install](#)
- [Installing Workflow Manager / AdminStudio Enterprise Server](#)
- [Upgrading from a Previous Release of Workflow Manager](#)
- [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 the AdminStudio and Workflow Manager, see the [AdminStudio Support Knowledge Base](#).

Preparing to Install

Before running the Workflow Manager / AdminStudio Enterprise Server installation, perform these tasks:

- [Checking System Requirements](#)
- [Checking Workflow Manager System Account Requirements](#)
- [Obtaining Your License File](#)
- [Gathering Required Information](#)
- [Using Windows Authentication Instead of Standard SQL Server Database Authentication](#)
- [Enabling Roles and Features in Windows Server 2012](#)

Checking System Requirements

Workflow Manager / AdminStudio Enterprise Server 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

Item	Requirement
Database Server	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.
Database Server Account	Make sure you have a database owner account ID and password for the SQL Server that you are installing the Workflow Manager / AdminStudio Enterprise Server database on.
Workflow Manager / AdminStudio Enterprise Server	The machine on which you will be installing Workflow Manager / AdminStudio Enterprise Server must meet the hardware and software requirements specified in Workflow Manager Web Server / AdminStudio Enterprise Server .
File Share Server	The machine which you will designate as the file share server must meet the hardware and software requirements specified in File Share Server .
Internet Information Services (IIS)	Internet Information Services (IIS) must be installed on the machine on which you will be installing Workflow Manager / AdminStudio Enterprise Server before you will be permitted to run the installation. See Installing Internet Information Services (IIS) .
.NET Framework	The .NET framework is required to be installed on the machine on which you will be installing Workflow Manager / AdminStudio Enterprise Server. However, if the .NET framework has not yet been installed on that machine, it will be installed as part of the installation.
Domain Account	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.
Static IP Addresses	Two static IP addresses need to be specified during installation—one for the Workflow Manager / AdminStudio Enterprise Server 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 .

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.

Obtaining Your License File

Workflow Manager and AdminStudio Enterprise Server Tools are activated by uploading a license file. The number of items listed in the Workflow Manager / AdminStudio Enterprise Server navigation bar depend upon which products are activated.

Workflow Manager / AdminStudio Enterprise Server 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: *To obtain a Workflow Manager license file:*

1. Log on to the **Flexera Software Product and License Center**:
<https://flexerasoftware.flexnetoperations.com>
2. In the left navigation, under **Entitlements**, click **Product List**.
 - If you have access to multiple products, the **Product List** page opens and lists all of the product lines to which your account is entitled. Click the **Workflow Manager** link to proceed to the **Product Information** page.
 - If you do not have access to multiple products, clicking the **Product List** link opens the **Product Information** page directly.

3. In the **Product and File Downloads** column, click the Workflow Manager link for the version that you want to download a license file for. The **Product Download** page opens.
4. Open the **Licenses** tab.
5. Click the download button next to the license file.

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 your 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 / AdminStudio Enterprise Server, 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 / AdminStudio Enterprise Server.

Table 3-2 • SQL Server Database Information

Item	Description
SQL Server Name:	
SQL Database Name:	
Database Owner User ID and Password for this SQL Database:	
File Server Domain (UNC Path):	
Workflow Manager / AdminStudio Enterprise Server Static IP Address:	
Portal IP Address:	

Using Windows Authentication Instead of Standard SQL Server Database Authentication

If you connect to a Microsoft SQL Server database using standard database server authentication, Workflow Manager / AdminStudio Enterprise Server stores the clear text SQL connection strings in the configuration file `web.config`. This could be considered a security risk.

Therefore, if you are connecting to a Microsoft SQL Server database, you may want to consider setting up Windows Authentication (trusted connection) to connect to the SQL Server database instead of standard database server authentication.

When, during Workflow Manager / AdminStudio Enterprise Server installation, you select Windows Authentication for your database connection, you will need to perform some manual steps after the installation is finished. For instructions on how to manually set up Windows Authentication for an SQL Server database, see [Using Trusted Connection to Connect to the Workflow Manager Database](#).

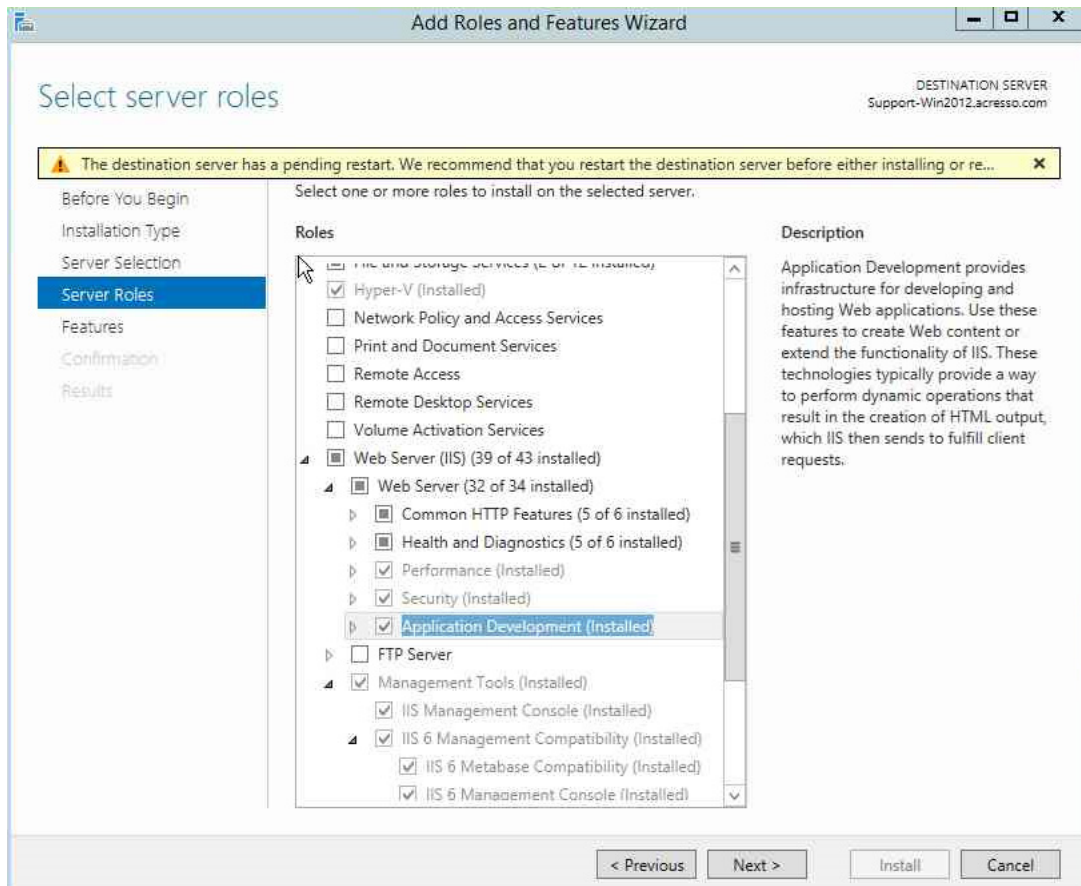
Enabling Roles and Features in Windows Server 2012

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

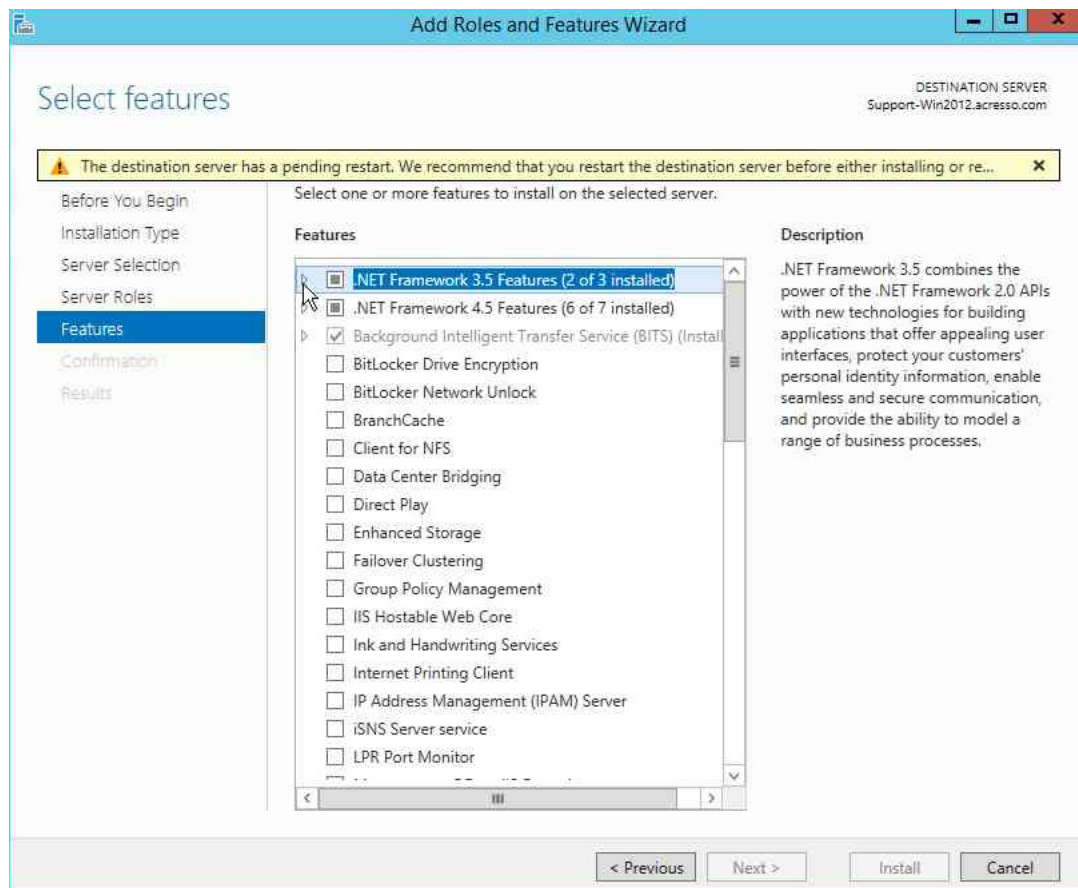


Task: *To enable roles and features in Windows Server 2012:*

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 Workflow Manager / AdminStudio Enterprise Server

This section explains how to run the Workflow Manager installation, how to configure it on Windows Server 2008, and how to launch Workflow Manager after installation is complete.



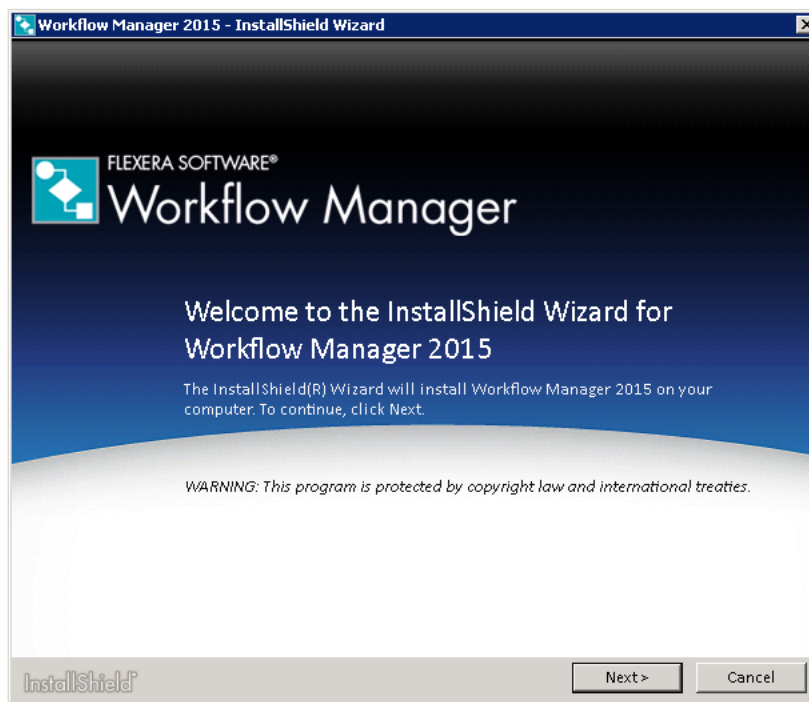
Note • If you are upgrading from a previous release, see [Upgrading from a Previous Release of Workflow Manager](#).

To install Workflow Manager, perform the following steps.



Task: **To install Workflow Manager:**

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

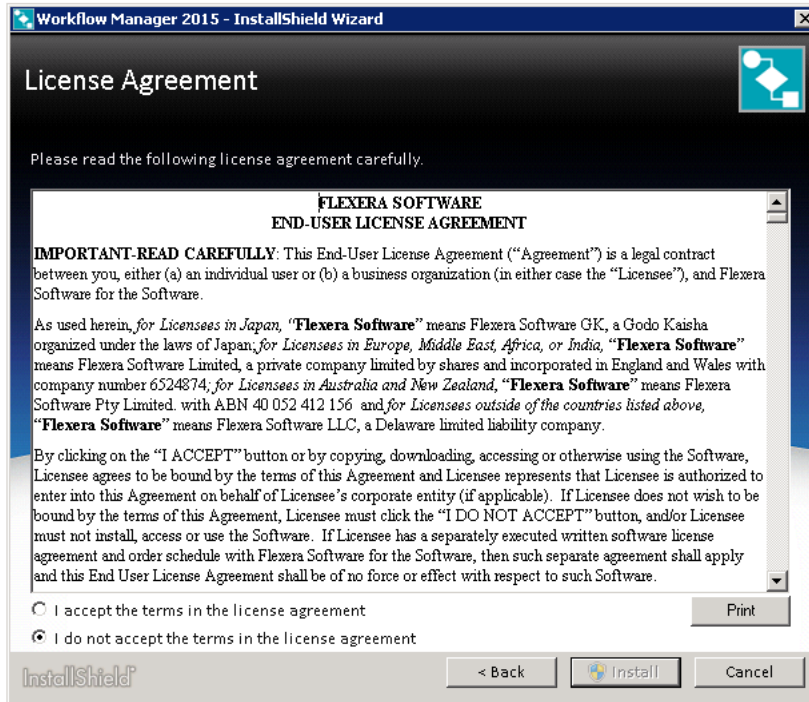


Note • If installing from a compressed version of the installation software, you may be prompted for a password when you attempt to extract the installation program. This password can be found in the Order Confirmation email you received when you purchased this product.

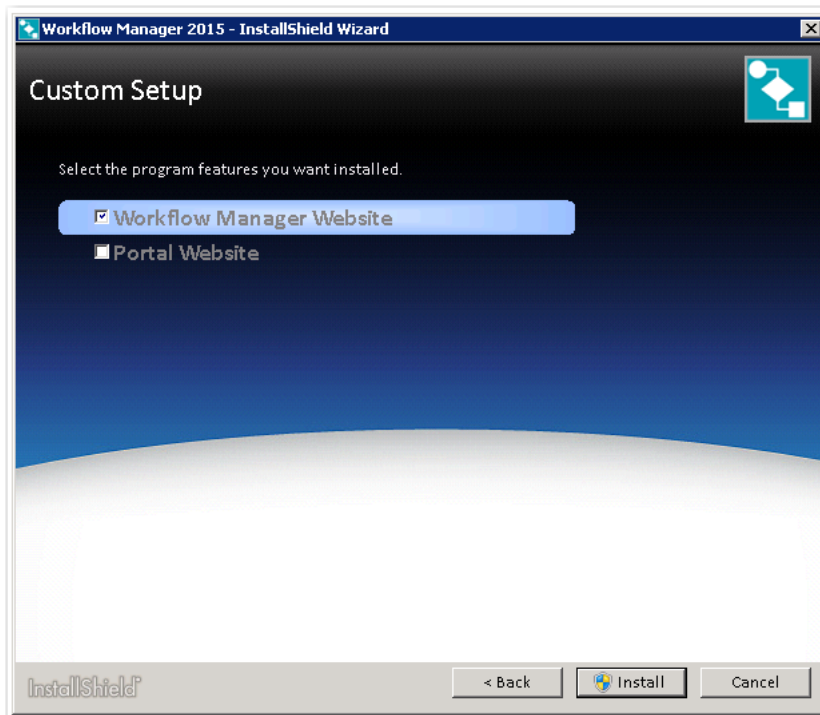


Note • If not already installed, before the **Welcome** panel opens, you will be first prompted to install MSXML, Microsoft .NET Framework Component, and Microsoft ReportViewer.

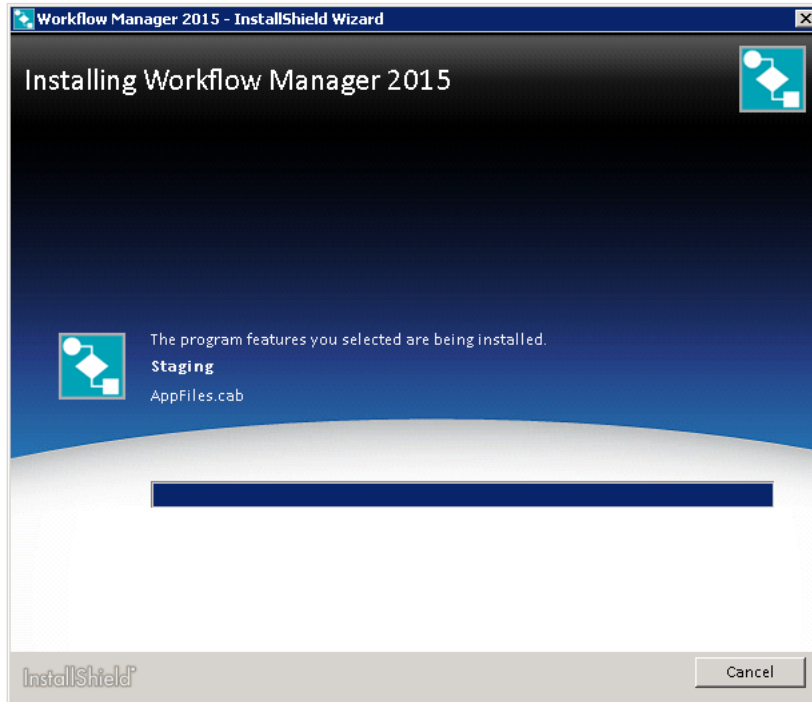
2. Click **Next**. The **License Agreement** panel opens.



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



4. Select **Workflow Manager Website** and click **Install**. The **Installing Workflow Manager 2015** panel opens.



When installation is complete, [InstallShield wizard completed](#) is displayed.

5. Click **Finish** to close the installer and launch the AdminStudio Configuration Wizard.
6. Continue with the steps in [Configuring Using the AdminStudio Configuration Wizard](#).

Upgrading from a Previous Release of Workflow Manager

To upgrade a previous version of Workflow Manager, perform the following steps.



Task: *To upgrade a previous version of Workflow Manager:*

1. On the Workflow Manager web server, launch the Workflow Manager installer. The **Welcome** panel opens. The Welcome panel states that it has detected an existing version of Workflow Manager.
2. Click **Next**. The **License Agreement** panel opens.
3. Select the **I accept the terms of the license agreement** option and click **Next**. The **Ready to Upgrade the Program** panel opens.
4. Click **Install**. The upgrade of the installation of Workflow Manager begins. When the upgrade is complete, the **Completed** panel opens:
5. Click **Finish** to exit the wizard.



Note • A log file has been created to help you identify any customizations that you may have made since the original installation of the previous version. You may need to take additional manual steps to port over these customizations to the latest version.

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.

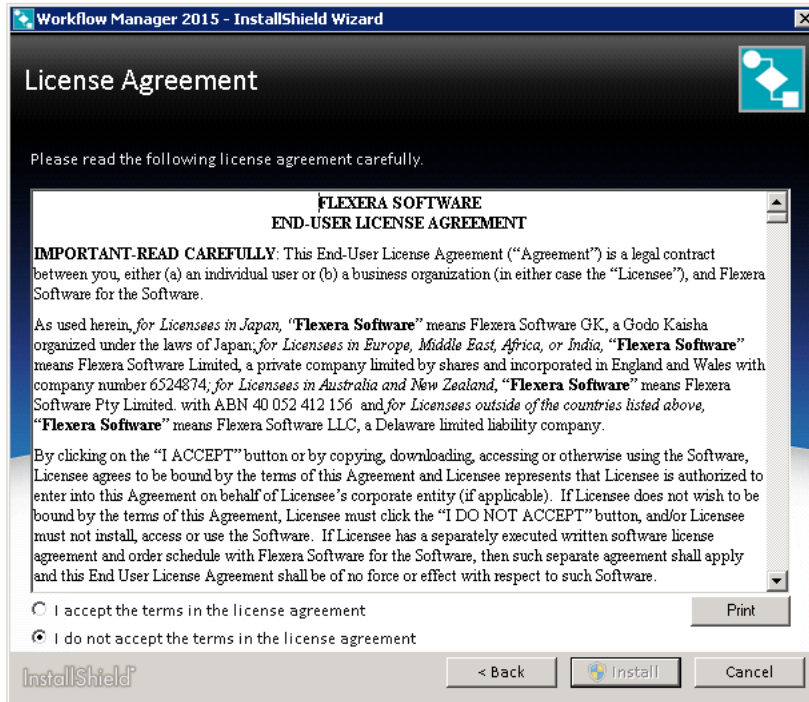


Note • If installing from a compressed version of the installation software, you may be prompted for a password when you attempt to extract the installation program. This password can be found in the Order Confirmation email you received when you purchased this product.

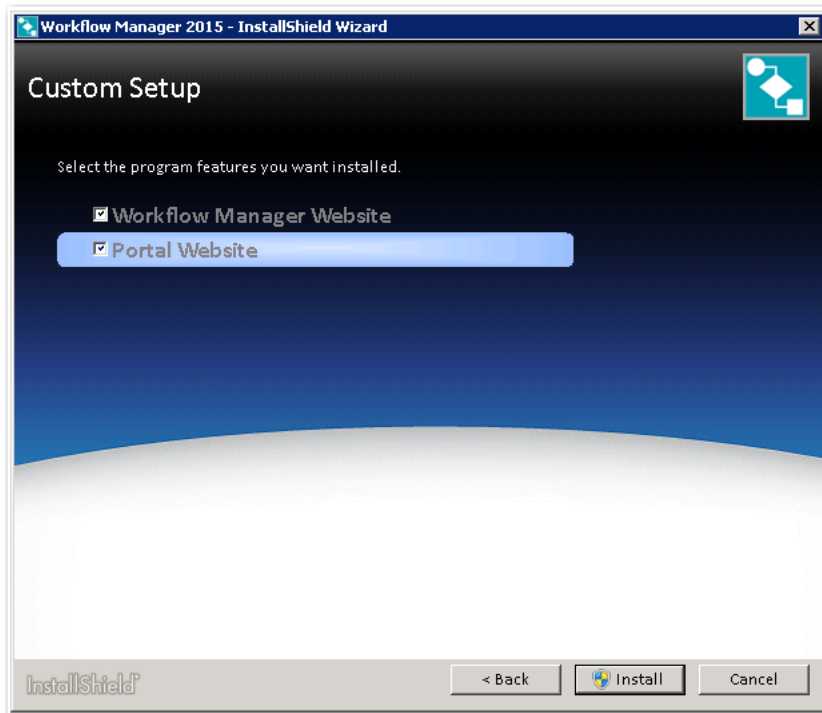


Note • If not already installed, before the **Welcome** panel opens, you will be first prompted to install MSXML, Microsoft .NET Framework Component, and Microsoft ReportViewer.

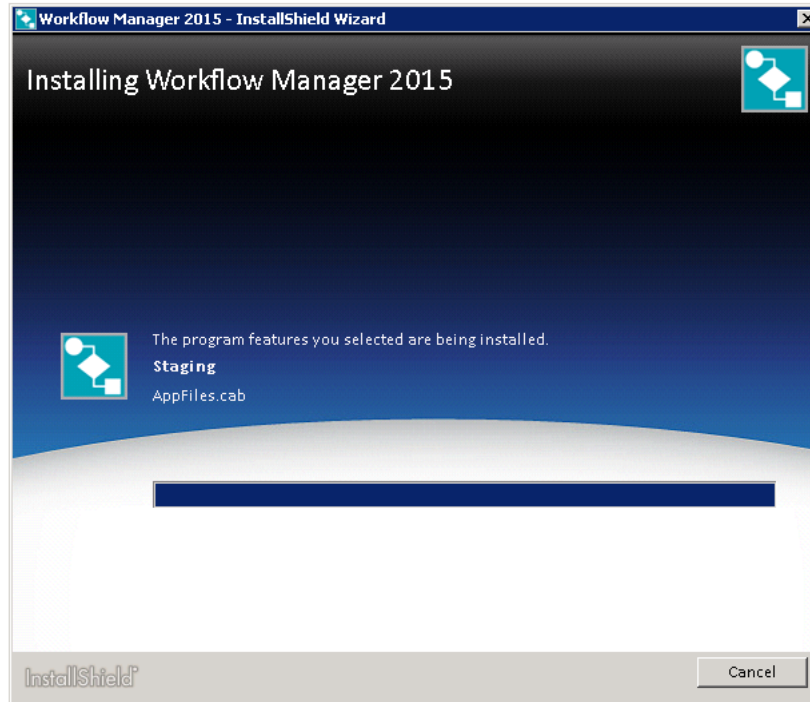
2. Click **Next**. The **License Agreement** panel opens.



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 2015** 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:

```
<add key="RemoteServer" value="IP_Address" />  
<add key="AMS_SystemUsername" value="User_Name" />  
<add key="AMS_SystemPassword" value="Pasword" />  
<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:

Key	Value
RemoteServer	Enter the IP address and port (if necessary) of the machine where the Workflow Manager website is installed.
AMS_SystemUsername AMS_SystemPassword	Enter the user account and password of an account that has permissions on the Workflow Manager website machine.
AMS_System Domain	Enter the domain of the user account name listed above.

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 / AdminStudio Enterprise Server 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 3-3 • Scripts to Create Workflow Manager / AdminStudio Databases on SQL Server

```
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_UI_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
```



Note • Running these scripts will create an Application Catalog that is compatible with AdminStudio 2013 R2.

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

Table 3-4 • Location of Database Creation Scripts

Installation	Default Location
AdminStudio Client Tools	[AdminStudioInstallDirectory]\Support\SQL_scripts
Workflow Manager	C:\AdminStudioWebComponents_2015\Support\SQL_scripts



Note • 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 3-5 • Location of Plug-in Scripts

Installation	Default Location
AdminStudio Client Tools	[AdminStudioInstallDirectory]\ConflictSolver\Plugins
Workflow Manager	C:\WorkflowManager\Support\SQL_scripts

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 3-6 • Plug-In Scripts

- Airwatch.sql
- Altiris.sql
- AppV.sql
- AppvServer.sql
- Msi.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:



Task: *To use scripts to create a Workflow Manager / AdminStudio Application Catalog database:*

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_UI_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  
AppV.sql  
AppvServer.sql  
Msi.sql  
XenApp.sql  
xpf.sql
```



Note • Running these scripts will create an Application Catalog that is compatible with AdminStudio 2015.

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 Workflow Manager installer to upgrade your database. However, if you created it manually in a previous release, and want to continue to do so, perform these steps.



Task: *To upgrade existing AdminStudio/Workflow Manager tables:*

1. Open up the CSSYSSCHEMAINFO table.
2. Determine the value of the target attribute of the upgrade element.
3. Run the script(s) listed for the target value found and all of the scripts for subsequent versions, in order.

For example, if your CSSYSSCHEMAINFO table's target attribute of the upgrade element is 13286589, first run 80VP1Upgrade.sql and CustomReportWizard.SQL, and then run all of the scripts listed for subsequent versions:

Schema Version You are Upgrading To	Target	Scripts to Run to Upgrade to Listed Version
4.99	13286574	AS50VP1Upgrade.SQL
5.00	13286580	PIM_SQLServer.sql
5.00 VP1	13286584	Upgrade50vp1to55.SQL SMSSchema.SQL
5.5	13286586	SMSSchema.SQL PIM_SQLServer.sql PreDeployTest.sql 60Upgrade.sql
6.0	13286587	70Upgrade.sql
7.0	13286588	storedProcedure_Cleanup.sql SMSSchema.SQL 80ReconcileSchema.sql 80Upgrade.sql
8.0	13286589	80VP1Upgrade.sql CustomReportWizard.SQL

Schema Version You are Upgrading To	Target	Scripts to Run to Upgrade to Listed Version
9.x	13286590	80VP1Upgrade.sql 901Upgrade.sql
10.0	13286593	1001Upgrade.sql ReportingSPs.1001Upgrade.sql
10.01	13286594	110Upgrade.sql ReportingSPs.110Upgrade.sql WFM_SampleTemplates.sql
11.0	13286595	WFM_SampleTemplatesSHLDNPLS.sql 110UpgradeSHLDNPLS.sql ReportingSPs.110UpgradeSHLDNPLS.sql
11.x	13286596	115UpgradeBAZINGA.sql
11.x	13286597	115Upgrade.sql ReportingSPs.115Upgrade.sql
11.50	13286598	ValidateCollation.sql 116Upgrade.sql Reporting.StoredProcedures.sql 116UpgradeBAZINGA.sql
11.60	13286599	ValidateCollation.sql 120UpgradeDALI.sql
11.60	13286600	ValidateCollation.sql 117Upgrade.sql ApplicationExtendedAttributes.sql
11.70	13286601	ValidateCollation.sql AS_System_Schema.sql AS_ApplicationModel.sql OsSecurityPatch.sql MergeModule.sql PredeploymentTest.sql SystemManagementServer.sql WFM_JobManager.sql CustomReportWizard.sql AS_TestCenter_Schema.sql GroupPackageTree.sql VirtualizationReadiness.sql AS_TestCenter_StoredProcedures.sql AS_StoredProcedures.sql Reporting.StoredProcedures.sql 120Upgrade.sql

Schema Version You are Upgrading To	Target	Scripts to Run to Upgrade to Listed Version
2013 (12.00)	13286602	ValidateCollation.sql AS_System_Schema.sql AS_ApplicationModel.sql OsSecurityPatch.sql MergeModule.sql PredeploymentTest.sql SystemManagementServer.sql WFM_JobManager.sql CustomReportWizard.sql AS_TestCenter_Schema.sql GroupPackageTree.sql VirtualizationReadiness.sql AS_TestCenter_StoredProcedures.sql AS_StoredProcedures.sql Reporting.StoredProcedures.sql 1201Upgrade.sql
2013 R2 (12.01)	13286603	DarwinFixes.sql 1202Upgrade.sql 1202UpgradewFM.sql 1202UpgradewFMEmailTemplate1.sql 1202UpgradewFMEmailTemplate2.sql
2014 (12.02)	13286605	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 GroupPackageTree.sql AS_TestCenter_StoredProcedures.sql Reporting.StoredProcedures.sql ApplicationExtendedAttributes.sql MobileTables.sql MobileProgrammability.sql 1300Upgrade.sql MobileSeedData.sql 1301UpgradewFM.sql 1302UpgradewFM.sql

Schema Version You are Upgrading To	Target	Scripts to Run to Upgrade to Listed Version
13.0 (Euclid)	13286607	1301UpgradewFM.sql 1302UpgradewFM.sql AkiraFixes.sql 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 1400Upgrade.sql 1400UpgradewFM.sql 1400UpgradeDAR.sql
14.00 (Fermi)	13286609	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



Note • Running these scripts will upgrade an Application Catalog that is compatible with AdminStudio 2015.



Note • For AdminStudio Upgrade target values of 1328657 (Version 3.01) and 13286572 (Version 3.5), use the *LegacyUpgradeWizard.exe*.

4

Configuring Workflow Manager / AdminStudio Enterprise Server

This chapter explains how to perform post-installation Workflow Manager / AdminStudio Enterprise Server.

- [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](#)
- [Connecting to the Flexera Service Gateway](#)
- [Setting Advanced Configuration Settings](#)

Specifying Mandatory Configuration Settings

After running the installer, as described in [Installing Workflow Manager / AdminStudio Enterprise Server](#), 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 the license file that was attached to your email from Flexera Software Orders.



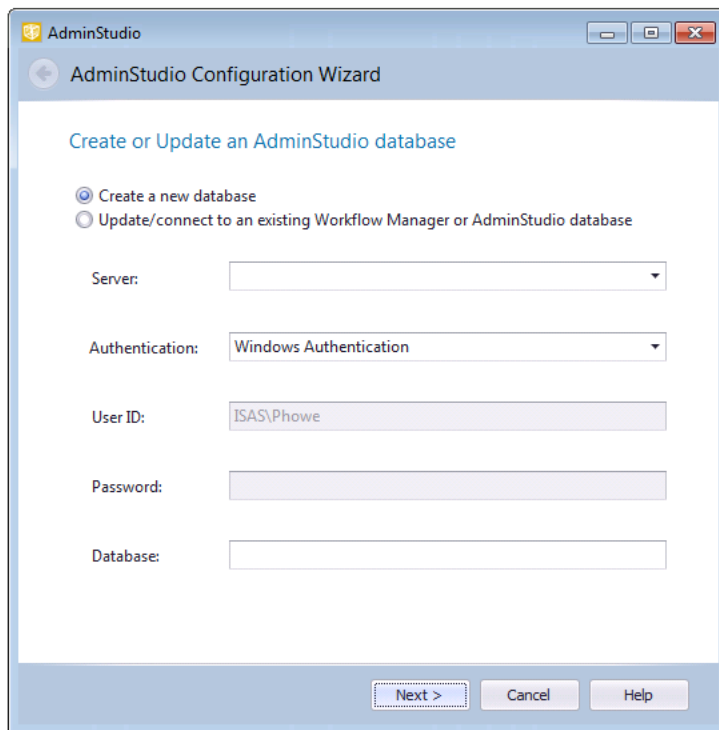
Note • You are required to specify these mandatory settings immediately after installation. You can also update these settings at any time by launching the AdminStudio Configuration Wizard manually and selecting **Create/update AdminStudio database** and/or **Activate AdminStudio license** on the **Welcome**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

`C:\AdminStudiowebComponents_2015\Support\Config\Config.exe`



Task: **To run 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.



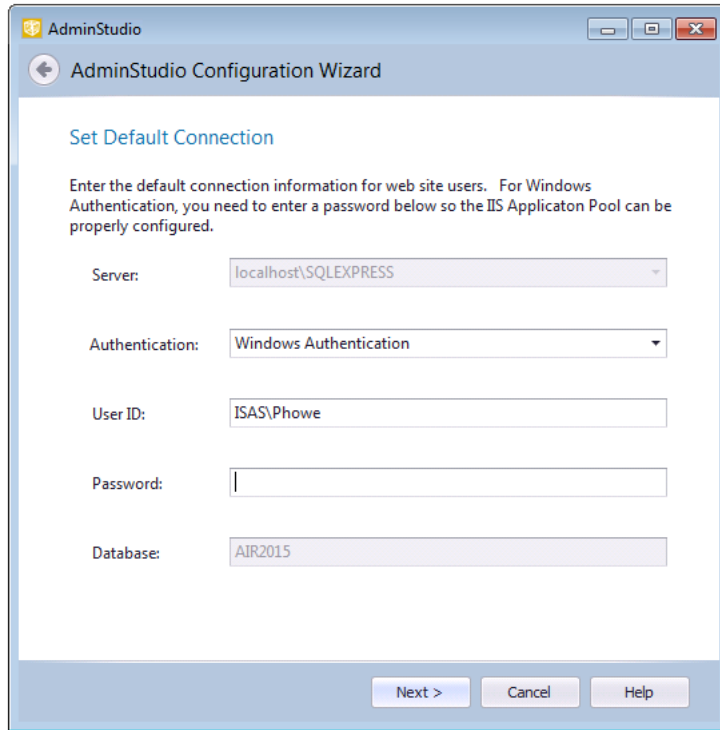
Note • The AdminStudio Configuration Wizard can also be launched at any time by opening this file:

`C:\AdminStudiowebComponents_2015\Support\Config\Config.exe`

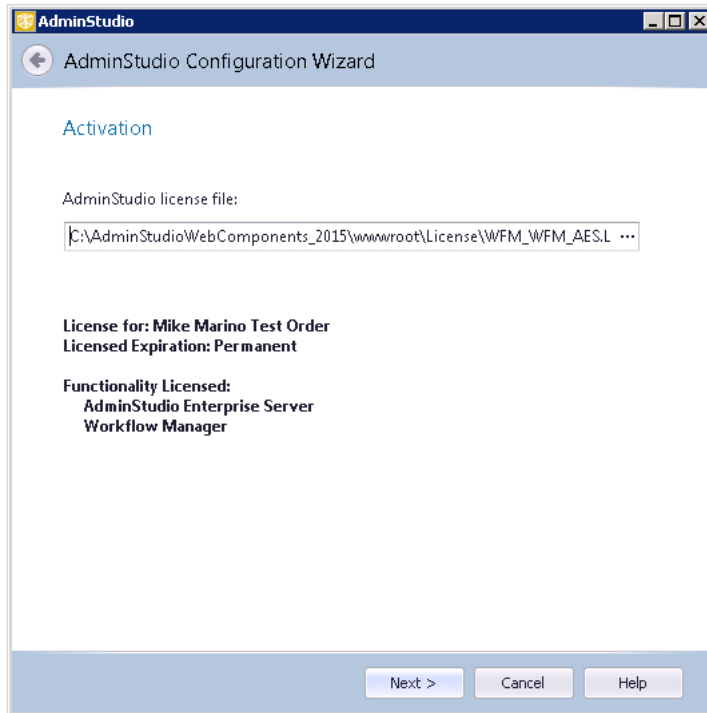
2. On the **Create or Update an AdminStudio Database** panel, you are prompted to enter the database server and database name of the database where you will be storing your Workflow Manager data, and login the credentials to that database. Enter the following information:

Property	Description
Option	Select one of the following options: <ul style="list-style-type: none">• Create a new database• Update/connect to an existing Workflow Manager or AdminStudio database
Server	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.
Authentication	Select one of the following options: <ul style="list-style-type: none">• Windows Authentication—Choose to use Windows network authentication (your network login ID) to log into this database.• 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.  <p>Note • 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.</p>
Database	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.

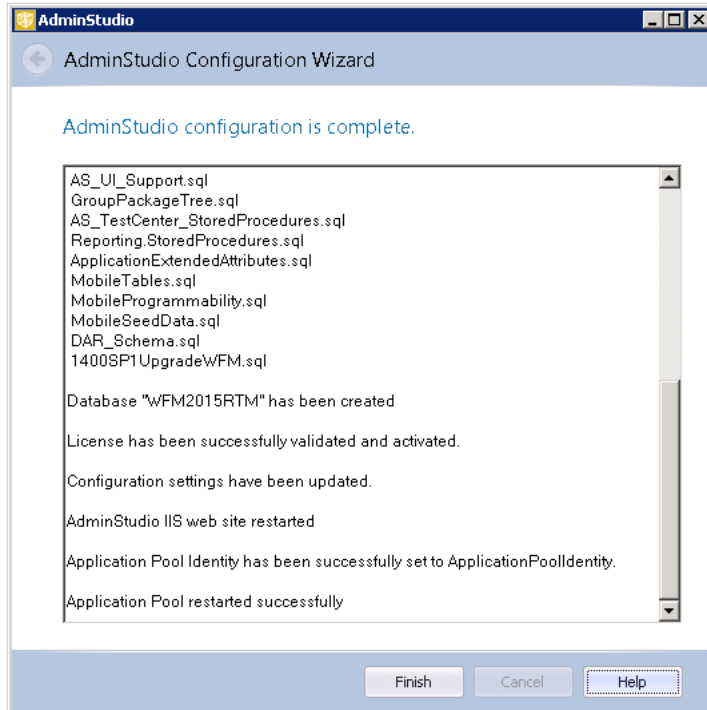
3. Click **Next**. The **Set Default Connection** panel opens, prompting you to enter the default connection information for web site users.



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 **Activation** panel opens.



6. Upload the license file that was attached to your email from Flexera Software Orders, and then click **Next**. The configuration begins and messages are displayed.



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

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:

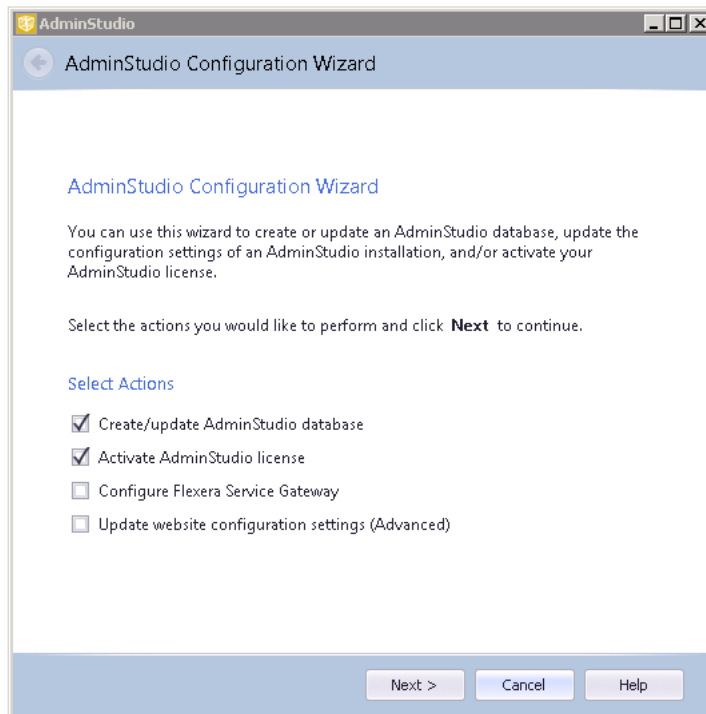


Task: *To connect to the Flexera Service Gateway:*

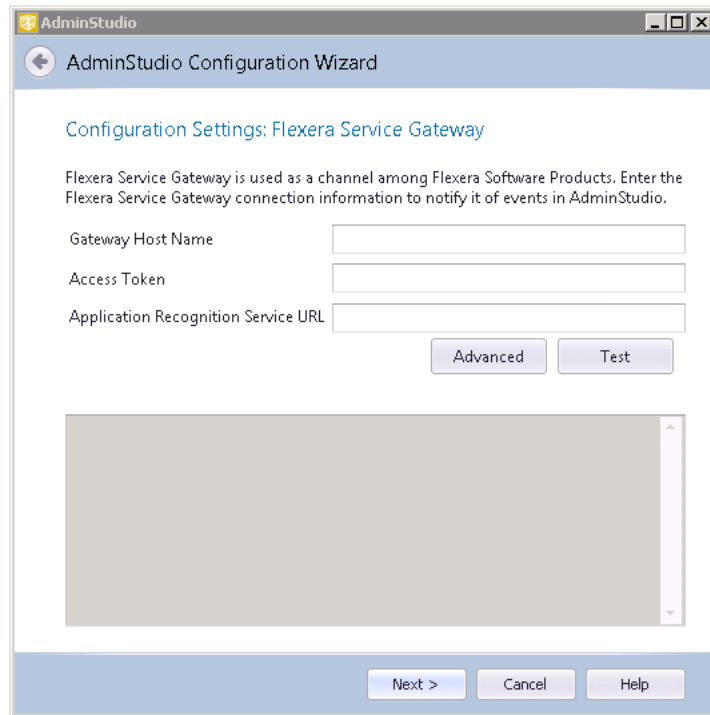
1. Launch the following file on the machine where you installed Workflow Manager:

C:\AdminStudiowebcomponents_2015\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.
6. Click **Test** to test the connection. You should receive the following message:

Connection to Flexera Service Gateway successful!

Testing FlexNetManagerPlatform was successful Server (version 11.0 revision 0)
connected at <https://www.flexnetmanager.com/ManageSoftServices/ComplianceAPIService/ComplianceAPIService.asmx>

The configuration begins and messages are displayed.

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

You are now ready to launch Workflow Manager, as described in [Launching Workflow Manager](#).

Setting Advanced Configuration Settings

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

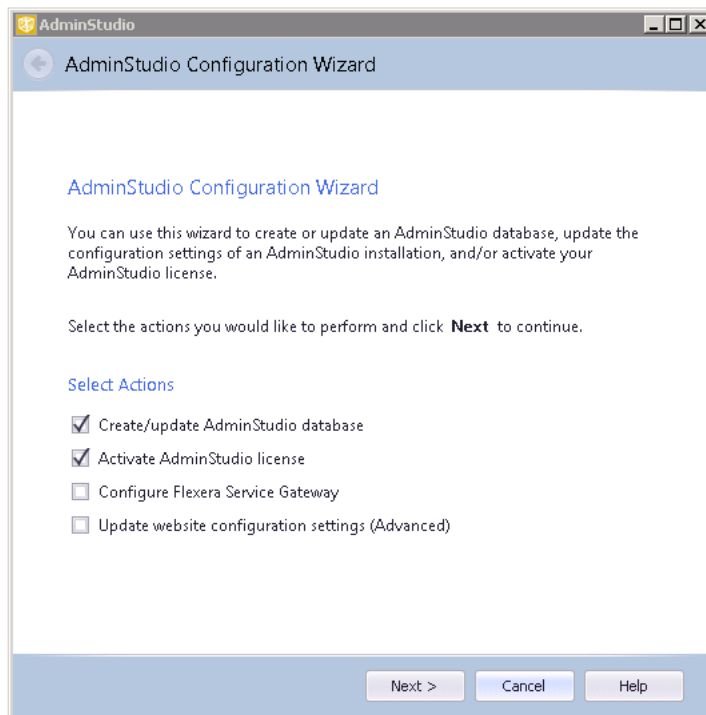


Task: *To set advanced configuration settings:*

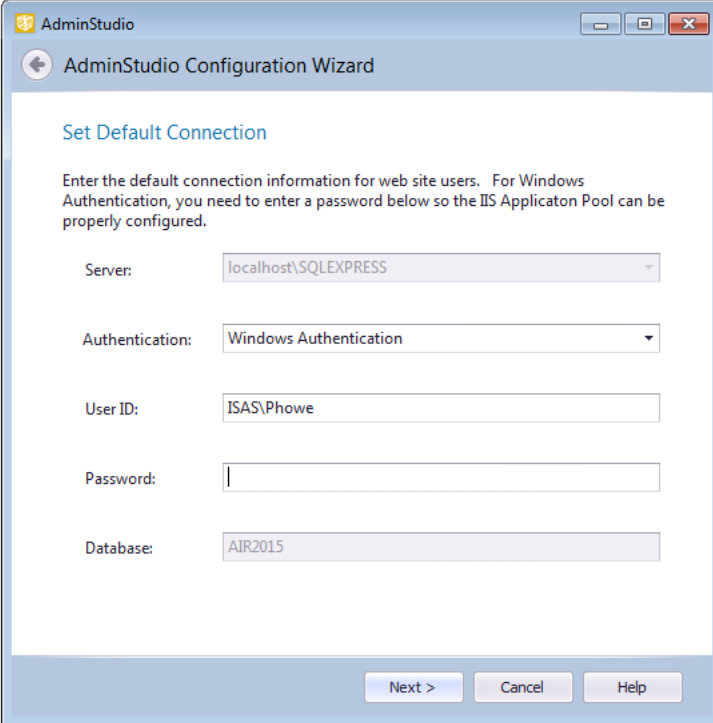
1. Launch the following file on the machine where you installed Workflow Manager:

C:\AdminStudio\Components_2015\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.



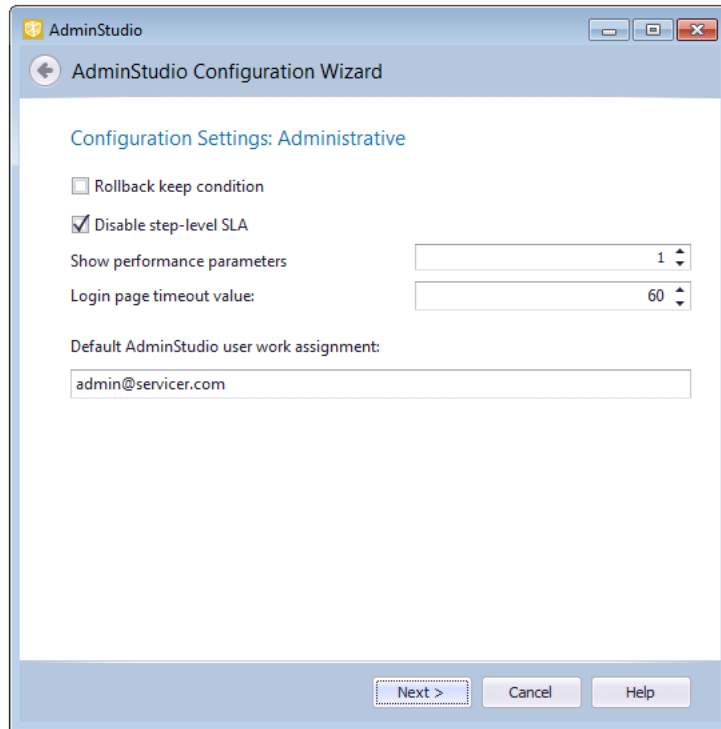
The screenshot shows the 'Set Default Connection' panel in the AdminStudio Configuration Wizard. The window title is 'AdminStudio' and the wizard title is 'AdminStudio Configuration Wizard'. The panel contains the following fields and instructions:

- Server:** localhost\SQLEXPRESS
- Authentication:** Windows Authentication
- User ID:** ISAS\Phowe
- Password:** (empty field)
- Database:** AIR2015

At the bottom of the panel are three buttons: 'Next >', 'Cancel', and 'Help'.

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.

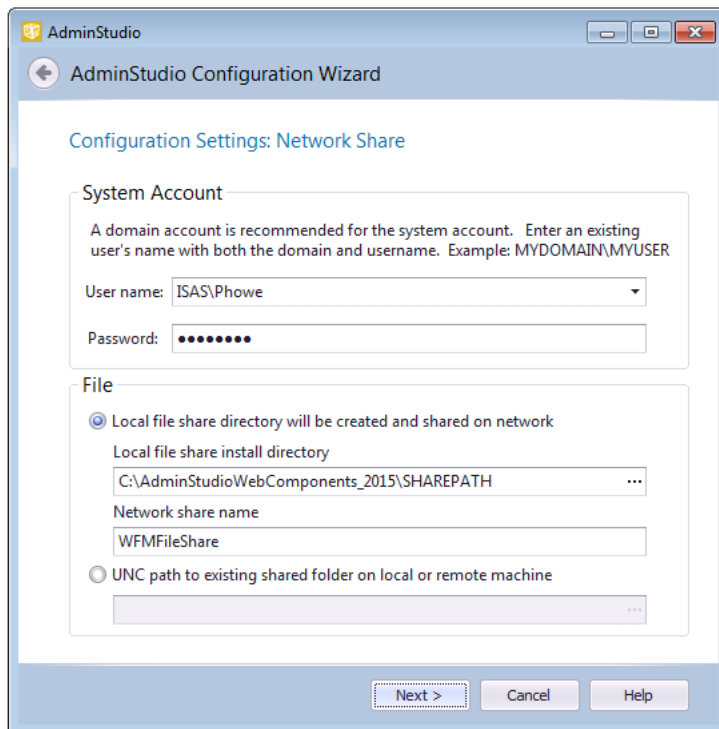
4. Click **Next**. The **Configuration Settings: Administrative** panel opens.



5. Specify the following options:

Property	Description
Rollback keep condition	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.
Disable step-level SLA	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.
Show performance parameters	Select this option to prevent individual user account names to be displayed in summary reports.
Login page timeout value	Identifies the length of time that you can leave the login page open before it times out.
Default AdminStudio user work assignment	Specify which AdminStudio user is automatically assigned to an AdminStudio project that is created as part of a Workflow Manager phase.

6. Click **Next**. The **Configuration Settings: Network Share** panel opens.



- Specify the following options:

Property	Description
User name Password	Enter a user name and password for the system account. Enter the user name in DOMAIN_NAME\USER_NAME format.
Local file share directory will be created and shared on network	Select this option if your file share location is on the local machine.
Local file share install directory	Enter the local file share directory path.
UNC path to existing shared folder on local or remote machine	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.

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

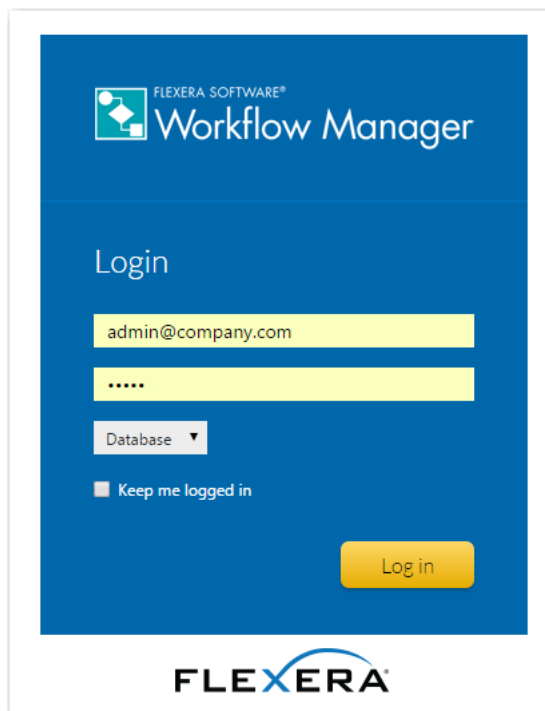


Task: *To launch Workflow Manager:*

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:



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 \(Without Portal\)](#)
- [Using Trusted Connection to Connect to the Workflow Manager Database](#)
- [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:*

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. Select your server name in the tree. The **Home** view opens.
5. Under **IIS**, select **ISAPI and CGI Restrictions** and select **Open Feature** from the context menu.
6. Make sure that all ASP.NET features have **Allowed** listed in the **Restriction** column.
7. In the tree under **Sites**, make sure that there is a node named **Workflow Manager Application**.
8. In the tree, select **Application Pools**. The **Application Pools** view opens.
9. Make sure that `workFlowManager` is listed and that its **Status** is set to **Started**.
10. Return to the **Administrative Tools** dialog box.
11. Select **Services** and select **Open** from the context menu. The **Services** view opens.
12. In the 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 **Workflow Manager Application**. The **Workflow Manager Application Home** view opens.
5. Under **IIS**, select **Authentication** and select **Open Feature** from the context menu. The **Authentication** view opens.
6. Set **Anonymous Authentication** to **Disabled**.
7. Set **Windows Authentication** to **Enabled**.

Using Trusted Connection to Connect to the Workflow Manager Database

To enable Workflow Manager to use trusted connection to connect to the Workflow Manager SQL Server database, perform the steps below.



Task: *To enable the use of trusted connection to connect to the Workflow Manager database:*

1. If you have already used the Workflow Manager installer and selected **Windows authentication credentials of current user** on the **Database Connection** panel, skip to **Step 2**.

However, if you did not select **Windows authentication credentials of current user**, perform the following steps:

- a. Open the web.config file in the following directory on the Workflow Manager web server:

C:\workFlowManager\wwwroot

- b. Update the <connectionStrings> section to the following:

```
<connectionStrings>
  <add name="DefaultConnectionString"
        connectionString="Data Source=workFlowManagerDatabaseServerAddress;
        Initial Catalog=workFlowManagerDatabaseName;
        Integrated Security=SSPI;"
        providerName="System.Data.SqlClient">
  </add>
</connectionStrings>
```

2. On the Workflow Manager web server, open the **Control Panel**.
3. Click **Administrative Tools**. The **Administrative Tools** dialog box opens.
4. 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.
5. In the tree, select **Application Pools**. The **Application Pools** view opens.
6. Select **WorkflowManager**.
7. In the menu at the right, under **Edit Application Pool**, click **Advanced Settings**. The **Advanced Settings** dialog box opens.
8. Under **Process Model**, select **Identity**.
9. Click on the browse button. The **Application Pool Identity** dialog box opens.
10. Select **Custom account**.
11. Click **Set**. The **Set Credentials** dialog box opens.
12. Enter the credentials of the domain user that has db_reader, db_writer, and execute permissions on the Workflow Manager database.

Assigning Static IP Addresses to a Server

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



Task: *To assign static IP addresses to a server*

1. Log on to the Workflow Manager web server.
2. Open the **Network and Sharing Center**.
3. Click **Change adapter settings**. The **Network Connections** dialog box opens.
4. Select your adapter and select **Properties** from the context menu. The **Local Area Connection Properties** dialog box opens.
5. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**. The **Internet Protocol Version 4 (TCP/IPv4) Properties** dialing box opens.
6. Enter the static IP address.
7. 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.
8. Under **IP addresses**, click **Add**. The **TCP/IP Address** dialog box opens.
9. Enter the **IP address** for the portal and click **Add**.
10. Click **OK** to close the remaining dialog boxes.

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