



## **Microsoft Dynamics AX 2012 Installation Guide**

Microsoft Corporation

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**Note:** Some of the information in this guide applies only to Microsoft Dynamics AX 2012 R2 installations, and some information applies only to Microsoft Dynamics AX 2012 or Microsoft Dynamics AX 2012 Feature Pack. Unless otherwise noted in this guide, all other content applies to Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2.

## Microsoft Dynamics AX

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U.S. and Canada Toll Free 1-888-477-7989

Worldwide +1-701-281-6500

[www.microsoft.com/dynamics](http://www.microsoft.com/dynamics)

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## Check for updated installation instructions

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The information contained in this document was current as of November 2012. The documentation may be updated as new information becomes available. For the most current documentation for system administrators, see the [TechNet Library](http://go.microsoft.com/fwlink/?LinkId=182420) (http://go.microsoft.com/fwlink/?LinkId=182420). For the most current documentation for developers, see the [MSDN Library](http://go.microsoft.com/fwlink/?LinkId=182421) (http://go.microsoft.com/fwlink/?LinkId=182421).

## Prepare for the installation

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The topics in this section provide an overview of the installation process and explain the procedures that you must complete before you start the installation. The following topics are included:

- [Overview of the installation](#)
- [Before you begin](#)

# Overview of the installation

This section provides an overview of the installation process and describes the servers that are used in the Microsoft Dynamics AX environment. The following topics are included:

- [What's New: Installation](#)
- [Servers in the Microsoft Dynamics AX environment](#)
- [Microsoft Dynamics AX components](#)
- [Installation types](#)

## What's New: Installation

Several enhancements have been made to the installation process in Microsoft Dynamics AX 2012.

### Simplified overall installation experience

In the Microsoft Dynamics AX 2012 Setup wizard, the following general improvements make the installation process easier and more intuitive:

- **Wizard pages are redesigned.** The Setup wizard has a new appearance that is designed to be easy to use and consistent with other Windows installers.
- **Progress indicators are improved.** The Setup wizard provides more detailed feedback than in previous releases. While components are being installed, you can see what has been successfully completed, what is in progress, and what remains to be completed.
- **Only one run of Setup is required.** In previous releases of Microsoft Dynamics AX, you had to run the Initialization Checklist after you installed the basic Microsoft Dynamics AX components, which include Application Object Server (AOS), the database, application files, and the client. Most components, such as Enterprise Portal for Microsoft Dynamics AX and reporting extensions, could not be installed until the checklist was completed. As a result, you had to run Setup multiple times to complete an installation. In Microsoft Dynamics AX 2012, the Initialization Checklist is no longer part of the installation process, so you can install all components without completing the checklist.
- **Post-installation configuration steps are provided.** In Microsoft Dynamics AX 2012, instructions for post-installation configuration are integrated into the Setup wizard. After a component is installed, the **Setup summary** report displays the next steps that are required to complete the deployment. In previous releases, this information was provided only in the Installation Guide.
- **Kerberos authentication is no longer required.** In previous releases of Microsoft Dynamics AX, you had to configure Kerberos authentication when Enterprise Portal was installed on a server other than the server that was running Microsoft SQL Server Reporting Services or Microsoft SQL Server Analysis Services. In Microsoft Dynamics AX 2012, Kerberos authentication is not required.



## Improved prerequisite validation

Microsoft Dynamics AX depends on multiple underlying technologies. In previous releases, Setup verified that these technologies were installed and configured correctly at various stages of the installation process. In Microsoft Dynamics AX 2012, validation of prerequisites has been improved in the following ways:

- **A stand-alone utility validates prerequisites.** Before you install Microsoft Dynamics AX, you can run a stand-alone utility to identify the prerequisites that are required for the Microsoft Dynamics AX components that you select. The utility can also install and configure some prerequisites for you.
- **Prerequisite verification is consolidated.** All validation of prerequisites and configurations occurs at the same time. Therefore, you can resolve all issues that involve prerequisites at the same time, and then move on to installation.

## Simplified client deployment

In previous releases, the .msi, or installer file, for the client also contained other components. Therefore, it was difficult to deploy many clients by using mass deployment technologies, such as Systems Management Server or Group Policy. In Microsoft Dynamics AX 2012, the client components are contained in a separate .msi file. A separate client installer provides more options for mass deployment of clients.

In addition, you can now use Setup to configure all clients so that they use a shared configuration file. In previous releases, the administrator had to configure clients individually.

## Integrated installation of service packs and updates

In previous releases, you could install service packs and updates only after the Microsoft Dynamics AX installation was completed. Therefore, depending on the number of updates that were available, you had to run several installation wizards to complete the deployment. In Microsoft Dynamics AX 2012, service packs and quarterly roll-up updates can be integrated into the Microsoft Dynamics AX installation. This kind of installation is known as a "slipstreamed" installation. If updates are available when you deploy Microsoft Dynamics AX 2012, you can download them to the location of the installation source. When you run Setup from the updated installation source, all updates are applied automatically.

## Improved discoverability of log files and reports

In Microsoft Dynamics AX 2012, troubleshooting an installation is easier because log files and reports are easier to find. Because log files and reports are saved to a single location, you do not have to search in multiple locations. In addition, the new Setup summary report lists the components that you installed, their installation status, and the next steps, if additional steps are required. You can access the Setup log files and reports from links in the Setup wizard, or locate the SetupLogs folder in the folder where you installed Microsoft Dynamics AX.

### Setup that can be patched

In previous releases of Microsoft Dynamics AX, the Setup application and its related files existed only on the DVD and could not be patched through standard hotfixes or service packs. To modify Setup files, you had to perform manual workarounds. In Microsoft Dynamics AX 2012, the Setup application and its files are installed on the computer as the first step in the installation process. Because the files are installed on the computer, service packs and hotfixes can be applied to the Setup files, just as they can be applied to any other Microsoft Dynamics AX file. When Setup starts, it verifies whether you have downloaded the recent version of the files. If a more recent version is available, Setup installs it.

### Simplified installation for single-computer deployments

In Microsoft Dynamics AX 2012, you can select the **Single-computer installation** option to install a complete Microsoft Dynamics AX system on a single computer. You can then use the computer for testing, demonstration, or development. This option installs the database, AOS, client components, business intelligence components, Enterprise Portal, the Help server, and the developer components in a single run of Setup. Setup uses default values for all components and does not prompt you for additional input.

### Separate databases for the model store and business data

 **Note:**

This feature is available only if Microsoft Dynamics AX 2012 R2 is installed.

The model store is the part of the Microsoft Dynamics AX database in which all application elements for Microsoft Dynamics AX are stored. Customizations are also stored in the model store. In previous releases, the model store and the business data were contained in a single database. Beginning with Microsoft Dynamics AX 2012 R2, separate databases are created for the model store and the business data. Having separate databases enables you to back up and restore the databases independently of one another. In this configuration, restoring a backup of the model store will not affect your business data.

For more information about the model store, see [Models, Layers, and the Model Store](http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0(AX.60).aspx) ([http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0\(AX.60\).aspx](http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0(AX.60).aspx)).

## Servers in the Microsoft Dynamics AX environment

A production deployment of Microsoft Dynamics AX requires multiple servers. This topic describes the types of server that may be required in your implementation.

### Servers in a minimum installation of Microsoft Dynamics AX

Minimum server components include the databases and the Application Object Server (AOS). Although you can install the components on a single server computer, we recommend that you use separate servers in a production environment. Single-server installations are typically used for development or testing only.

#### Application Object Server

An AOS server is a computer that runs the AOS Windows service. The AOS service controls communications among Microsoft Dynamics AX clients, databases, and applications. You can install the AOS on a single computer, or you can create a server cluster for load balancing.

#### Database server

A Microsoft SQL Server database server hosts the database that stores Microsoft Dynamics AX transaction data. The database server also hosts the model store, which is the database that stores application elements. These application elements include customizations.

#### Note:

Beginning with Microsoft Dynamics AX 2012 R2, the model store and the business data are stored in separate databases. In other versions of Microsoft Dynamics AX 2012, the model store and business data are stored in a single database.

### Servers in a complete installation of Microsoft Dynamics AX

For some Microsoft Dynamics AX functionality, you must have one or more of the following additional servers.

#### Report server

A report server is a server that runs Microsoft SQL Server Reporting Services. Reporting Services is a server-based solution that lets users create and publish both traditional, paper-based reports and interactive, web-based reports.

For more information about how to set up a report server, see [Install Reporting Services extensions for Microsoft Dynamics AX](#).

#### Analysis server

An analysis server enhances the reporting functionality in Microsoft Dynamics AX by linking to Microsoft SQL Server Analysis Services. An analysis server provides enhanced support for online analytical processing (OLAP).

For more information about how to set up an analysis server, see [Configure Analysis Services](#).

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### Web server

A web server hosts the websites that are required for some Microsoft Dynamics AX features. These features include Enterprise Portal for Microsoft Dynamics AX, Help server, Enterprise Search, and web services on IIS.

Enterprise Portal is a site for Microsoft SharePoint 2010 products that lets trusted users access Microsoft Dynamics AX data and functionality. Anonymous users can access only limited functionality, such as catalog information and questionnaires. For more information about how to set up an Enterprise Portal server, see [Install Enterprise Portal](#).

Help server is an IIS web site that stores Help documentation that is used in Microsoft Dynamics AX. Help server simplifies the task of updating and customizing Help. For more information about how to set up Help server, see [Install help server](#).

Enterprise Search lets client users and Enterprise Portal users search for data, forms, and reports in Microsoft Dynamics AX by entering simple search terms. Enterprise Search uses Microsoft Search Server Express 2010 or Microsoft SharePoint Server 2010 and the Microsoft SharePoint Business Data Connectivity Service (BCS). For more information about how to set up Enterprise Search, see [Install Search](#).

Web services on IIS are an optional component. Services that are hosted on AOS are available to users and applications over the intranet. However, to consume services over the Internet, you must host services on IIS. For more information about how to set up web services on IIS, see [Install web services on IIS](#).

### Other servers in the environment

The following servers are typically found in infrastructures that run Microsoft Dynamics AX. This documentation provides information about how to use Microsoft Dynamics AX together with these servers. For information about how to install and set up these servers, see the documentation for each server.

#### Domain controller

A domain controller in an Active Directory network manages user logons and access to network and shared resources.

#### Messaging server

A messaging server enables email messages and instant messages to be sent and received. Microsoft Dynamics AX can use email to send alerts to users. Microsoft Dynamics AX requires that the messaging server support SMTP.

## Microsoft Dynamics AX components

This topic describes the components of Microsoft Dynamics AX that you can install by using the Setup wizard.

A minimum installation of Microsoft Dynamics AX consists of a business database, a model store, an instance of Application Object Server (AOS), and at least one client. These components can be installed on computers that are arranged in various topologies, but the system does not run unless all elements are installed.

### Databases

Databases include the Microsoft Dynamics AX database, the model store, and the baseline database. The AOS connects to the Microsoft Dynamics AX database to process transactions. The AOS connects to the model store to display application elements such as forms and reports. The baseline database contains a model store that is used to upgrade X++ code to Microsoft Dynamics AX 2012. The baseline database is used to analyze application updates before they are applied.

#### Note:

Beginning with Microsoft Dynamics AX 2012 R2, the model store and the business data are stored in separate databases. In other versions of Microsoft Dynamics AX 2012, the model store and business data are stored in a single database.

For information about how to install the databases, see [Install the Microsoft Dynamics AX databases](#).

Other Microsoft Dynamics AX components, such as Enterprise Portal and Reporting Services extensions, also include databases. The additional databases are created when you install those components and their prerequisites. They are not installed as part of the Microsoft Dynamics AX databases component.

### Server components

Server components include AOS and the Microsoft Dynamics AX components that run on Internet Information Services (IIS). For information about how to install one of the server components, click the corresponding link in the following table.

Component	More information
Application Object Server (AOS)	<a href="#">Install an Application Object Server (AOS) instance</a>
Enterprise Portal for Microsoft Dynamics AX (web server)	<a href="#">Install Enterprise Portal</a>
Enterprise Search (web server)	<a href="#">Install Search</a>
Help Server (web server)	<a href="#">Install help server</a>

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### Business intelligence components

Business intelligence components provide reporting and analytical functionality that you can use to view and interpret business data. Integration with Microsoft SQL Server Reporting Services lets you create reports by using Reporting Services. Integration with Microsoft SQL Server Analysis Services lets you use cubes for business intelligence and analytical reporting in Microsoft Dynamics AX. For information about how to install one of the business intelligence components, click the corresponding link in the following table.

Component	More information
Reporting Services extensions	<a href="#">Install Reporting Services extensions for Microsoft Dynamics AX</a>
Analysis Services configuration	<a href="#">Configure Analysis Services by running Setup</a>

### Client components

Client components give users access to Microsoft Dynamics AX data and functionality. For information about how to install one of the client components, click the corresponding link in the following table.

Component	More information
Microsoft Dynamics AX Windows client	<a href="#">Install the Microsoft Dynamics AX client</a>
Microsoft Office Add-ins	<a href="#">Install Office Add-ins</a>
Remote Desktop Services integration	<a href="#">Install Remote Desktop Services integration</a>


### Developer tools

Developer tools are used to customize Microsoft Dynamics AX. For example, you can create customizations or extensions to Enterprise Portal, or you can create advanced production reports for Microsoft Dynamics AX by using Reporting Services. For information about how to install one of the developer tools, click the corresponding link in the following table.

Component	More information
Debugger	<a href="#">Install the debugger</a>
Visual Studio Tools	<a href="#">Install Visual Studio Tools</a>
Trace Parser	<a href="#">Install the Trace Parser</a>

## Integration components

Integration components enable integration between Microsoft Dynamics AX and external applications. For information about how to install one of the integration components, click the corresponding link in the following table.

Component	More information
Web services on IIS	<a href="#">Install web services on IIS</a>
.NET Business Connector	<a href="#">Install the .NET Business Connector</a>  <b>Note:</b> .NET Business Connector is installed automatically when Microsoft Dynamics AX components that require it are installed.
Synchronization proxy for Microsoft Project Server	<a href="#">Install the synchronization proxy for Microsoft Project Server</a>
Synchronization service for Microsoft Project Server	<a href="#">Install the synchronization service for Microsoft Project Server</a>

## Management utilities

Management utilities let you configure and manage Microsoft Dynamics AX components and artifacts, such as reports and web controls, from the metadata store.

For information about how to install management utilities, see [Install management utilities](#).

## Retail components

Microsoft Dynamics AX for Retail provides mid-market and large retailers a complete head office and point of sale (POS) solution. It can help retailers increase financial returns, improve service, manage growth, and streamline efficiencies. Microsoft Dynamics AX for Retail consists of several components that are typically distributed across multiple computers and locations.

For more information about how to install retail components, see [Install retail components](#).

### Installation types

Two types of installation are available from the Setup wizard: **Custom installation** and **Single-computer installation**.

#### Custom installation

Select **Custom installation** to install specific Microsoft Dynamics AX components on multiple computers. Use this type of installation in a production environment.

#### Single-computer installation

Select **Single-computer installation** to install a complete Microsoft Dynamics AX system on one computer. Setup uses default settings to configure all components, and new Microsoft Dynamics AX databases are created. User names and passwords are the only input that is required.

If you want to connect to an existing database or specify other custom settings, you must perform a custom installation.

#### **Important:**

Do not perform a single-computer installation in a production environment. Use this type of installation only for development and testing.

A single-computer installation includes the following components:

- Databases
- Application Object Server (AOS)
- Enterprise Portal
- Help server
- Reporting Services extensions
- Analysis Services configuration
- Client
- Office add-ins
- Remote Desktop Services integration
- Debugger
- Visual Studio Tools
- Trace Parser
- .NET Business Connector
- Management utilities




## Before you begin

The topics in this section provide the procedures that you must complete before you start to install Microsoft Dynamics AX. The following topics are included:

- [Pre-installation checklist](#)
- [Create service accounts](#)
- [Create a shared directory for installation](#)
- [Include service packs and updates in a new installation \(slipstreaming\)](#)
- [Verify that you have the required permissions for installation](#)
- [Check prerequisites](#)

### Pre-installation checklist

Before you install Microsoft Dynamics AX, you must plan the implementation and complete the pre-installation tasks that are listed in the following table.

Task	More information
1. Plan the deployment of Microsoft Dynamics AX.	<a href="#">Implementation Planning Guide</a> ( <a href="http://go.microsoft.com/fwlink/?LinkID=163797">http://go.microsoft.com/fwlink/?LinkID=163797</a> ) (PDF download)
2. Look for updated installation documentation for Microsoft Dynamics AX 2012 on the web.	<a href="#">Installation Guide</a> ( <a href="http://go.microsoft.com/fwlink/?LinkID=163796">http://go.microsoft.com/fwlink/?LinkID=163796</a> ) (PDF download)
3. Review the system requirements.   <b>Important:</b> If you plan to upgrade the operating system, you must perform the upgrade before you install Microsoft Dynamics AX. If you upgrade the operating system after Microsoft Dynamics AX has been installed, you may experience problems. For example, instances of Application Object Server (AOS) may not start, or registry entries may be deleted.	<a href="#">System requirements on the Web</a> ( <a href="http://go.microsoft.com/fwlink/?LinkId=165377">http://go.microsoft.com/fwlink/?LinkId=165377</a> ) (PDF download)
4. Create service accounts that Windows services can run as. For example, you must create accounts to run Microsoft Dynamics AX services and Microsoft SQL Server services.	<a href="#">Create service accounts</a>
5. Copy the DVD contents to a shared directory.	<a href="#">Create a shared directory for installation</a>

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Task	More information
6. Obtain product updates, and copy them to the installation directory for Microsoft Dynamics AX.	<a href="#">Include service packs and updates in a new installation (slipstreaming)</a>
7. Make sure that your domain account has the appropriate permissions to perform the installation.	<a href="#">Verify that you have the required permissions for installation</a>
8. Verify that prerequisites have been met.	<a href="#">Check prerequisites</a>

### Create service accounts

An implementation of Microsoft Dynamics AX requires many services to run. Set up accounts to run the services. Each account that you set up must have the following characteristics:

- It must be a dedicated account. A dedicated account is used only for a specific service.
- It must have a password that does not expire.
- It must have minimal access to network resources.
- It must be able to log on as a service.

If you are using Windows Server 2008 R2 or a later version of Windows Server, you can use managed service accounts. For more information, see the [Service Accounts Step-by-Step Guide](http://go.microsoft.com/fwlink/?linkid=214033) (<http://go.microsoft.com/fwlink/?linkid=214033>) on TechNet.


The accounts in this topic must be configured in order to install the components of Microsoft Dynamics AX. For information about additional service accounts that are used when you configure Microsoft Dynamics AX, see [Configure system accounts](http://technet.microsoft.com/library/56e3522e-38a8-41ba-b95e-3ad3c7d53178(AX.60).aspx) ([http://technet.microsoft.com/library/56e3522e-38a8-41ba-b95e-3ad3c7d53178\(AX.60\).aspx](http://technet.microsoft.com/library/56e3522e-38a8-41ba-b95e-3ad3c7d53178(AX.60).aspx)).

## Create accounts for Microsoft Dynamics AX services

Create the accounts in the following table to run Microsoft Dynamics AX services.




Account	Description	Configuration procedure
Application Object Server (AOS) service account	<p>The account that the <b>Microsoft Dynamics AX Object Server</b> Windows service runs as. This account is used to communicate with the database server.</p> <p>Consider the following points when you select an account:</p> <ul style="list-style-type: none"> <li>• We strongly recommend that you use a domain account or a managed service account in a production environment. Use the Network Service account only in development and testing environments.</li> <li>• If you plan to use a managed service account, you must first create that account as described in the <a href="http://go.microsoft.com/fwlink/?LinkId=254376">Service Accounts Step-by-Step guide</a> (<a href="http://go.microsoft.com/fwlink/?LinkId=254376">http://go.microsoft.com/fwlink/?LinkId=254376</a>).</li> <li>• If Microsoft SQL Server and the AOS are on different computers, you must use a domain account or a managed service account.</li> <li>• If you plan to install any Microsoft Dynamics AX components on a domain controller, you must use a domain account.</li> <li>• If you plan to use Message Queuing, which is also known as MSMQ, for document exchange with web services on Internet Information Services (IIS), and you want to send signed messages, you must use a domain account. However, if you want to send unsigned messages by using web services on IIS, the AOS can run as the Network Service account.</li> </ul>	Enter this account when you run the Setup wizard to install an AOS instance. For more information, see <a href="#">Install an AOS instance</a> .

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Account	Description	Configuration procedure
Business Connector proxy account	<p>The account that the .NET Business Connector runs as. This account is used to connect to the AOS on behalf of a Microsoft Dynamics AX user, but without granting that user excessive privileges in the system.</p> <p> <b>Note:</b> This account must not be a Microsoft Dynamics AX user.</p>	Enter this account when you run the Setup wizard or select this account in the <b>System service accounts</b> form.
Search crawler account	<p>The account that Enterprise Search runs as. This account is used by the Microsoft SharePoint Indexing Service to crawl Microsoft Dynamics AX data. This account must be assigned to the <b>Search crawler</b> security role in Microsoft Dynamics AX. We recommend that you configure this account so that it has no local logon rights.</p>	<p>Enter this account when you run the Setup wizard to install Enterprise Search. For more information, see <a href="#">Install Microsoft Dynamics AX Enterprise Search</a>.</p> <p>Use the <b>Assign users to roles</b> form to assign this account to the <b>Search crawler</b> security role.</p>
Synchronization service account (optional)	<p>The account that the Microsoft Project Server synchronization service runs as. We recommend that you configure this account so that it has no local logon rights.</p>	<p>Select this account in the <b>System service accounts</b> form.</p> <p>For more information, see <a href="#">Install the synchronization service for Microsoft Project Server</a>.</p>
RapidStart Connector account (optional)	<p>The account that the RapidStart Connector Windows service runs as.</p>	<p>Enter this account when you run the Setup wizard to install the RapidStart Connector. For more information, see <a href="#">Install the RapidStart Connector</a>.</p> <p>Use the <b>Assign users to roles</b> form to assign this account to the <b>System administrator</b> security role.</p>

## Create accounts for Retail services

Create the accounts in the following table to run the services that are used in Retail.


Account	Description	Configuration procedure
<p>Service accounts for Commerce Data Exchange: Synch Service</p> <p> <b>Note:</b> In Microsoft Dynamics AX 2012 Feature Pack, Commerce Data Exchange: Synch Service is called Retail Store Connect.</p>	<p>The accounts that the Synch Service Windows service runs as. These accounts are used to communicate with the database server.</p> <p>Consider the following points when you select an account:</p> <ul style="list-style-type: none"> <li>• Guest or temporary user accounts are not supported.</li> <li>• The service user account on head-office instances of Synch Service must be a Microsoft Dynamics AX user.</li> <li>• The account must be a member of the <b>db_datareader</b> and <b>db_datawriter</b> database roles in the message database.</li> <li>• This account must be created only on the communications server where Synch Service is installed and on POS computers where offline databases are located.</li> </ul>	<p>Enter this account when you run the Setup wizard to install Synch Service. For more information, see <a href="#">Install Commerce Data Exchange: Synch Service (Retail Store Connect)</a>.</p>
<p>Service account for Commerce Data Exchange: Real-time Service</p> <p> <b>Note:</b> In Microsoft Dynamics AX 2012 Feature Pack, Commerce Data Exchange: Real-time Service is called Retail Transaction Service.</p>	<p>The account that the Real-time Service web service runs as.</p> <p> <b>Note:</b> In Microsoft Dynamics AX 2012 Feature Pack, Real-time Service is a Windows service.</p>	<p>Enter this account when you run the Setup wizard to install Real-time Service. For more information, see <a href="#">Install Commerce Data Exchange: Real-time Service (Retail Transaction Service)</a>.</p>

## Create accounts for SQL Server services

Create the accounts in the following table to run SQL Server services.

Account	Description	Configuration procedure
<p>SQL Server Database Engine account</p>	<p>The account that the <b>SQL Server (MSSQLSERVER)</b> Windows service runs as.</p>	<p>Select this account when you install the Database Engine. For more information, see the SQL Server documentation.</p>

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Account	Description	Configuration procedure
Microsoft SQL Server Reporting Services account	The account that the <b>SQL Server Reporting Services (MSSQLSERVER)</b> Windows service runs as.	When you install Reporting Services, specify that you want the Reporting Services Windows service to run as the .NET Business Connector account.
Microsoft SQL Server Analysis Services account	The account that the <b>SQL Server Analysis Services (MSSQLSERVER)</b> Windows service runs as.	Select this account when you install Analysis Services.   <b>Important:</b> The account that you select must have read access to the online transaction processing (OLTP) database for Microsoft Dynamics AX.

## Create a shared directory for installation

Before you install Microsoft Dynamics AX and subsequent service packs or updates, we recommend that you create a shared directory on a file server. Then copy the contents of the Microsoft Dynamics AX DVD and the service packs or updates to this network location. Perform all installations from this network location instead of the DVD.

By giving users a shared network location from which to install Microsoft Dynamics AX, you can make sure that the same version of the software is installed on all computers.

Additionally, the installation program may later require access to files from the location where Setup was run. For example, the installation program may require access to the files when you upgrade, when you modify the installation, or when you uninstall a component or update. If Setup was run from a network location, the installation program can retrieve the files silently from the network. However, if Setup was run from a DVD, the user is prompted to insert the DVD when files are required.

Before you install Microsoft Dynamics AX, follow these steps to create a shared directory for the contents of the DVD.

1. Create a directory that is named **DynamicsAX6**.
2. Share the DynamicsAX6 directory:
  - Give the Administrator group full control, or owner access.
  - Give the Everyone group read access.

As a security best practice, we recommend that you prevent users from making changes to this directory. Only read access is required to perform an installation from the directory.

3. Copy the contents of the Microsoft Dynamics AX DVD to the DynamicsAX6 directory.
4. Copy the installation files for service packs or updates to the directory. For more information about how to include service packs and updates, see [Include service packs and updates in a new installation \(slipstreaming\)](#).

## Include service packs and updates in a new installation (slipstreaming)

If you are installing Microsoft Dynamics AX components for the first time, and service packs or updates for Microsoft Dynamics AX are available, you can incorporate the updates into the installation by using a process that is known as *slipstreaming*. Some customizations can also be included in the slipstreaming process. When updates are slipstreamed, Setup automatically detects and applies them. In this way, the time that is required to install the whole Microsoft Dynamics AX solution is reduced.

### **Note:**

Components that were previously installed are not updated when service packs and code updates are slipstreamed. For example, an instance of Application Object Server (AOS) is installed on a server. Later, you add service packs or updates to the installation source, and you also install another Microsoft Dynamics AX component on the same server. In this scenario, the existing AOS instance is not updated.

You can slipstream the following kinds of updates:

- Service packs
- Cumulative updates
- Help content updates
- Customizations that are packaged in model files

Individual hotfixes cannot be included in the slipstreaming process.

Use the following procedure to include service packs and updates in the installation.

1. To find service packs and updates, visit the [CustomerSource](http://go.microsoft.com/fwlink/?LinkID=210925) (<http://go.microsoft.com/fwlink/?LinkID=210925>) web site. Logon is required.
2. Browse to the shared network folder from which you install Microsoft Dynamics AX. In the Updates folder, create a subfolder for each update.

We recommend that you use the Knowledge Base article numbers of the updates as the names of the subfolders. For example, for the update that is associated with Knowledge Base article number 123456, create a subfolder that is named KB123456.

If you use the Updates folder to deploy model files that contain customizations from independent software vendors (ISVs), create a subfolder for each ISV. In the folder for each ISV, create a subfolder that is named Models. For example, the folder structure might be Updates\*<ISVName>*\Models.

### **Note:**

For more information about how to install Microsoft Dynamics AX from a shared network folder, see [Create a shared directory for installation](#).

3. Extract each update into the appropriate subfolder.
4. Run Setup and select the components that you want to install.
 

To install updates for Help content, you must select the **Help Server** component, and then select the updated content sets on the **Language and content selection** page. To install additional model files, you must select the **Databases** component, and then select the additional model files on the **Select additional models** page.
5. Setup detects and installs the updates.

## Verify that you have the required permissions for installation

Before you begin the installation of Microsoft Dynamics AX, work with a system administrator to make sure that the account that you log on with at each server has appropriate permissions. The permissions in the following table are recommended based on the principle of least privilege.

In all cases, you must be a member of the **Administrators** group on the local computer where you are installing a component. The following table lists the permissions that are required in addition to administrator access on the local computer.

Component	Additional permissions that are required to install the component
Databases	<p>Membership in the <b>dbcreator</b> role on the instance of Microsoft SQL Server.</p> <p>If you install the databases remotely from a computer other than the database server, you must log on to the remote computer by using an account that is an administrator on the SQL Server computer. Setup requires access to SQL Server services.</p>
Application Object Server (AOS)	Membership in the <b>sysadmin</b> role on the instance of SQL Server that you want to connect to
Enterprise Portal for Microsoft Dynamics AX	<ul style="list-style-type: none"> <li>• Membership in the <b>System administrator</b> role in Microsoft Dynamics AX</li> <li>• Membership in the <b>Administrators</b> group in Windows on the Web server</li> <li>• Membership in the <b>Farm Administrators</b> group in Microsoft SharePoint 2010 products</li> <li>• Membership in the <b>dbcreator</b> role on the instance of SQL Server that is used for SharePoint 2010 products</li> <li>• Membership in the <b>WSS_Content_Application_Pools</b> database role in the SharePoint_Config database</li> </ul>
Enterprise Search	<ul style="list-style-type: none"> <li>• Membership in the <b>System administrator</b> role in Microsoft Dynamics AX</li> <li>• Membership in the <b>Administrator</b> group in Microsoft SharePoint Services</li> <li>• Membership in the <b>dbcreator</b> role on the instance of SQL Server that is used for Microsoft SharePoint Services</li> </ul>
Help server	Membership in the <b>System administrator</b> role in Microsoft Dynamics AX
Microsoft SQL Server Reporting Services extensions	Membership in the <b>System administrator</b> role in Microsoft Dynamics AX



Component	Additional permissions that are required to install the component
Microsoft SQL Server Analysis Services configuration	<ul style="list-style-type: none"> <li>• Membership in the <b>System administrator</b> role in Microsoft Dynamics AX</li> <li>• Membership in the SQL Server <b>securityadmin</b> server role</li> <li>• Membership in the SQL Server <b>db_owner</b> database role for the Microsoft Dynamics AX database</li> </ul>
Client	None
Microsoft Office add-ins	None
Remote Desktop Services integration	None
Debugger	None
Visual Studio Tools	None
Trace Parser	None
Web services on Internet Information Services (IIS)	Membership in the <b>System administrator</b> role in Microsoft Dynamics AX
.NET Business Connector	None
Synchronization proxy	<ul style="list-style-type: none"> <li>• Membership in the <b>dbowner</b> database role in the SQL Server database for Microsoft Project Server</li> <li>• Membership in the <b>System administrator</b> role in Microsoft Dynamics AX</li> </ul>
Synchronization service	Membership in the <b>System administrator</b> role in Microsoft Dynamics AX
Management utilities	None
Retail Headquarters	None
Retail POS	None
Retail Store Connect	To install Retail Store Connect, no additional permissions are required. To configure Retail Store Connect, membership is required in the <b>sysadmin</b> role on the instance of SQL Server that you want to connect to.
Retail Transaction Service	None
Retail Store Database Utility	To install the utility, no additional permissions are required. To configure databases, membership is required in the <b>sysadmin</b> role on the instance of SQL Server that you want to connect to.
Retail POS Plug-ins	None
RapidStart Connector	None

### Check prerequisites

Run the prerequisite validation utility for Microsoft Dynamics AX to determine whether a computer meets the requirements to install a Microsoft Dynamics AX component. You can run the utility before you install any components in your environment. If requirements are not met, the utility helps you install or configure most prerequisites. Additionally, you can view or print a report that shows the results of the prerequisite validation.

Prerequisite validation is also built into Setup. Therefore, the same prerequisites are validated when you install a component by using the Setup wizard.

 **Note:**

The prerequisite validation utility validates the software prerequisites that Microsoft Dynamics AX depends on. However, the utility does not verify whether Microsoft Dynamics AX components that are also required are installed or configured. For example, the utility verifies whether a supported version of Windows is installed, but does not verify whether an Application Object Server (AOS) is running in the environment. Prerequisite Microsoft Dynamics AX components are validated when you run Setup.

To review the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).




Use the following procedure to run the prerequisite validation utility.

1. Start Microsoft Dynamics AX Setup.
2. Under **Prepare**, click **Validate system requirements**.

 **Note:**

To avoid errors, run only one instance of the utility at a time.

3. The **Prerequisite validation** page is displayed. Select the components that you plan to install on the local computer, and then click **Next**.
4. The **Prerequisite validation results** page is displayed. Each prerequisite is assigned one of the following statuses.

Status	Description
 <b>Success</b>	The local computer meets the prerequisite.
 <b>Error</b>	The local computer does not meet the prerequisite. You cannot install the component until this prerequisite is installed or configured.
 <b>Warning</b>	The local computer does not meet the prerequisite, but you can still install the Microsoft Dynamics AX component.

For more information about a prerequisite, click its status. For information about all the prerequisites that were validated, click **View report** to display the Microsoft Dynamics AX **Prerequisite check report**. Both options provide a description of the prerequisite, the validation status, and recommendations for resolving any problems.

5. Resolve prerequisite issues. For many errors and warnings, the prerequisite validation utility can attempt to resolve the issue for you.
  - If a link is available in the **Download** column, click it to download and install the missing prerequisite. Internet access is required to download some prerequisites that are not included on the installation media. In some cases, the download starts immediately when you click the link. In other cases, a download page is displayed when you click the link.

 **Note:**

If network or computer security prevents a prerequisite from being downloaded from the utility, you must download the prerequisite by using another method. Click the **Error** link on the prerequisite validation page to obtain the download URL.

- If a check box is available in the **Configure** column, select it, and then click the **Configure** button to resolve the issue.

Some prerequisites depend on other prerequisites. In these cases, the prerequisites must be installed or configured in a specific order. For example, the Windows Search Service must be installed before it can be started.

6. After you have resolved prerequisite issues, click **Revalidate** to run the prerequisite validation again.
7. When you have finished validating prerequisites, click **Close**.

 **Important:**

Prerequisite software that is installed or configured by the prerequisite validation utility may not include the latest updates. We strongly recommend that you run Windows Update to identify and install the latest updates before you continue with the installation of Microsoft Dynamics AX.

### See Also

[Troubleshoot prerequisite issues](#)

## Install the databases

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These topics describe how to configure Microsoft SQL Server and install the Microsoft Dynamics AX databases. The following topics are included:

- [Configure SQL Server and storage settings](#)
- [Install the Microsoft Dynamics AX databases](#)

## Configure SQL Server and storage settings

This topic provides information about how to configure Microsoft SQL Server to support the business and model store databases for Microsoft Dynamics AX. To achieve optimal Microsoft Dynamics AX performance, you must correctly configure the database infrastructure.

This topic does not describe how to configure the infrastructure for reporting and analytics databases. For information about those features, see [Reporting in Microsoft Dynamics AX](http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2(AX.60).aspx) ([http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2\(AX.60\).aspx](http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2(AX.60).aspx)) and [Analytics in Microsoft Dynamics AX](http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f(AX.60).aspx) ([http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f\(AX.60\).aspx](http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f(AX.60).aspx)).

This information is designed for Microsoft Dynamics AX administrators and Microsoft SQL Server database administrators who are responsible for administration of the Microsoft Dynamics AX application.

To benefit from this topic, you must have knowledge in the following areas:

- Windows Server administration.
- SQL Server administration. Specific areas of knowledge include advanced configuration options, memory management, performance management, and troubleshooting.
- Microsoft Dynamics AX system administration.

## Minimal SQL Server infrastructure

The configuration of Windows Server and SQL Server greatly affects the performance of the Microsoft Dynamics AX business database. This section provides detailed recommendations for the configuration of Windows Server and SQL Server.

The configuration recommendations are based on the following assumptions:

- You are following the documented best practices for Windows Server and SQL Server.
- You are using a dedicated server that runs SQL Server 2008 R2.
- You are using a single instance of SQL Server that is dedicated to running the Microsoft Dynamics AX production databases.

We recommend that you store your test and development databases on a separate server from the production databases.

## Configuring Windows Server

Verify that SQL Server is configured to run as a background service in Windows.

1. In Windows Server 2008 R2, in Control Panel, click **System and Security**, and then click **System**.  
In Windows Server 2008, in Control Panel, double-click **System**.
2. Click **Advanced system settings**.
3. On the **Advanced** tab, under **Performance**, click **Settings**.
4. On the **Advanced** tab, under **Processor scheduling**, select **Background services**, and then click **OK**.

## Configuring the server that runs SQL Server

In addition to the documented best practices for SQL Server, we recommend the following configuration settings for the SQL Server service.

- Run the SQL Server service under an Active Directory domain account that has the minimum necessary privileges. For more information, see [SQL Server 2008 Security Overview for Database Administrators](http://go.microsoft.com/fwlink/?LinkId=213202) (http://go.microsoft.com/fwlink/?LinkId=213202).
- Confirm that the account for the SQL Server service has been granted the **Lock pages in memory** privilege. We recommend this setting, because it significantly affects whether other processes affect SQL Server. For instructions, see [How to: Enable the Lock Pages in Memory Option \(Windows\)](http://go.microsoft.com/fwlink/?LinkId=213203) (http://go.microsoft.com/fwlink/?LinkId=213203). For more information, see the following Web pages:
  - The [Microsoft Customer Service and Support \(CSS\) SQL Server Engineers blog](http://go.microsoft.com/fwlink/?LinkId=213204) (http://go.microsoft.com/fwlink/?LinkId=213204)
  - Knowledge base article 981483, [How to reduce paging of buffer pool memory in the 64-bit version of SQL Server](http://go.microsoft.com/fwlink/?LinkId=213205) (http://go.microsoft.com/fwlink/?LinkId=213205)
  - [Slava Oks's WebLog](http://go.microsoft.com/fwlink/?LinkId=213207) (http://go.microsoft.com/fwlink/?LinkId=213207)
- Configure the account for the SQL Server service for instant file initialization. Instant file initialization is only available if the account for the SQL Server service, MSSQLSERVER, has been granted the SE\_MANAGE\_VOLUME\_NAME right. Members of the Windows Administrator group have this right and can grant it to other users by adding them to the **Perform Volume Maintenance Tasks** security policy. For more information, see [Database file initialization](http://go.microsoft.com/fwlink/?LinkId=213208) (http://go.microsoft.com/fwlink/?LinkId=213208).
- Enable the TCP/IP network protocol. Depending on the edition of SQL Server that you use, this protocol may be automatically installed during installation. For instructions, see [How to: Enable or Disable a Server Network Protocol \(SQL Server Configuration Manager\)](http://go.microsoft.com/fwlink/?LinkId=213210) (http://go.microsoft.com/fwlink/?LinkId=213210).
- Disable hyperthreading. This step must be performed in the BIOS settings of the server. For instructions, see the hardware documentation for your server.

### Configuring the instance of SQL Server

In addition to the documented best practices for SQL Server, we recommend the following storage settings for the instance of SQL Server.

#### Configuring max degree of parallelism

The **max degree of parallelism** option is a setting that affects the entire instance of SQL Server. Microsoft Dynamics AX workloads generally perform better when intra-query parallelism is disabled. However, the upgrade process benefits from parallelism, as do activities that are used exclusively for batch jobs or maintenance. Use the following settings when the system performs maintenance activities or an upgrade:

- Before an upgrade to a new release of Microsoft Dynamics AX, or before a large number of maintenance or batch activities, set **max degree of parallelism** to the smallest of the following values:
  - 8
  - The number of physical processor cores
  - The number of physical processor cores per non-uniform memory access (NUMA) node
- When the Microsoft Dynamics AX database is used in a production environment, set **max degree of parallelism** to 1.

Use the following statements to set the value of **max degree of parallelism**.

Examine the output from the second `sp_configure 'max degree of parallelism'` statement, and confirm that the value has been changed. In the following query, the first `sp_configure 'max degree of parallelism'` statement sets the value of **max degree of parallelism** to 1. The second `sp_configure 'max degree of parallelism'` statement returns a value of 1.

```
EXEC sp_configure 'show advanced options', 1;
RECONFIGURE;
GO
EXEC sp_configure 'max degree of parallelism', 1;
RECONFIGURE;
GO
EXEC sp_configure;
```

For more information, see [max degree of parallelism Option](http://go.microsoft.com/fwlink/?LinkId=213211) (http://go.microsoft.com/fwlink/?LinkId=213211). For general guidelines, see Knowledge base article 329204, [General guidelines to use to configure the MAXDOP option](http://go.microsoft.com/fwlink/?LinkId=213212) (http://go.microsoft.com/fwlink/?LinkId=213212). For tips from the SQL Server team, visit the SQL Server Relational Engine team's blog, [SQL Server Engine Tips](http://go.microsoft.com/fwlink/?LinkId=213213) (http://go.microsoft.com/fwlink/?LinkId=213213).

## Configuring max server memory

SQL Server dynamically acquires and frees memory as required. Typically, an administrator does not have to specify how much memory is allocated to SQL Server. However, the **max server memory** option can be useful in some environments. Make sure that sufficient memory is available for the operation of Windows Server. For more information, see [Monitoring available memory](#), later in this topic.

If you find that the dynamic allocation of memory adversely affects the operation of Windows Server, adjust the value of **max server memory** based on the available random access memory (RAM). For more information, see [Effects of min and max server memory](http://go.microsoft.com/fwlink/?LinkId=213214) (<http://go.microsoft.com/fwlink/?LinkId=213214>).

## Monitoring available memory

Make sure that sufficient memory is available for the operation of Windows Server. For example, make sure that you run a dedicated instance of SQL Server on a server that has at least 4 gigabytes (GB) of memory. If the available memory for the server drops below 500 megabytes (MB) for extended periods, the performance of the server may degrade.

Use the **Memory: Available Mbytes** performance counter for the Windows Server operating system to determine whether the available memory drops below 500 MB for extended periods. If the available memory drops below 500 MB frequently or for extended periods, we recommend that you reduce the **max server memory** setting for SQL Server or increase the physical memory of the server.

Detailed guidance about memory management is beyond the scope of this topic. For more information about how to monitor memory and troubleshoot performance issues, see the Windows Server and SQL Server documentation.

## Allocating storage for tempdb

We recommend that you determine the total size of the data files and transaction log files that are required for the tempdb database, and that you set a specific value. Do not use automatic growth, or autogrow, setting for space management. Instead, use autogrow as a safety mechanism, so that tempdb can grow if tempdb files use the space that was originally allocated to them. Follow this process to determine the number and placement of data files.

- Determine the number of processors that are available to SQL Server. Unless you are using an affinity mask, this number is same as the total number of processors that you see on the **Performance** tab of Windows Task Manager. When hyperthreading is not enabled, each processor corresponds to a processor core. Affinity masks and processor cores are beyond the scope of this topic. For more information, see the Windows Server and SQL Server documentation.
- Based on performance testing of the OLTP workload for Microsoft Dynamics AX, we recommend that you maintain one tempdb data file per processor. For more information, see the performance benchmark reports on [PartnerSource](http://go.microsoft.com/fwlink/?LinkId=143994) (<http://go.microsoft.com/fwlink/?LinkId=143994>) or [CustomerSource](http://go.microsoft.com/fwlink/?LinkId=213216) (<http://go.microsoft.com/fwlink/?LinkId=213216>).
- Isolate tempdb on dedicated storage, if you can. We recommend that you move the primary data file and log file for tempdb to high-speed storage, if high-speed storage is available. The Microsoft Dynamics AX database runs in read committed snapshot isolation (RCSI) mode. In RCSI mode, row versions are stored in tempdb. By creating multiple files for tempdb data, even if these files reside on the same storage device, you can improve the performance of tempdb operations.

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- Determine the size of the tempdb data files and log files. You must create one primary data file and one log file. Determine how many additional, secondary data files you require for the tempdb data. For best results, create data files of equal size. The total number of data files must equal the total number of processor cores. The aggregate size of the primary data file and all other data files must equal the total data size that you determined for the tempdb database.

For more information, see [Optimizing tempdb performance](http://go.microsoft.com/fwlink/?LinkId=213217) (<http://go.microsoft.com/fwlink/?LinkId=213217>).

- Resize the primary data file and log file for tempdb. Move the primary data file and log file to dedicated storage, if dedicated storage is available. The primary tempdb data file cannot be moved while the instance of SQL Server is running. To complete the move, you must use an ALTER DATABASE statement and restart the instance of SQL Server. For more information, see [ALTER DATABASE](http://go.microsoft.com/fwlink/?LinkId=213218) (<http://go.microsoft.com/fwlink/?LinkId=213218>).

### **Note:**

The data files and transaction log files for tempdb can reside on the same storage device.

- If space is available on the drive where tempdb files are allocated, do not configure the autogrow property for data files and log files as a percentage. Instead, configure the autogrow property as a specific number of megabytes. If you can, configure the data files and log files to grow by 100 to 500 MB, depending on the available space. Monitor the data files, and when they grow, adjust the original allocation to prevent automatic growth later. If the autogrow property is configured in megabytes instead of as a percentage, the allocation of space is more predictable, and the chance of extremely small or large growth increments is reduced.
- Monitor the tempdb data files and log files to make sure that they are all sized correctly, and that all data files are of equal size. Use SQL Server Management Studio or a transact-SQL query to view the database properties. Verify that all the data files are of equal size, and that they have the same size as the value that you originally provided. If one or more files have grown, adjust the initial size of all files.

## Configuring the Microsoft Dynamics AX business database

We recommend the following settings for the Microsoft Dynamics AX business database. You can use SQL Server Management Studio or the appropriate ALTER DATABASE statement to configure these settings. For more information, see [ALTER DATABASE](http://go.microsoft.com/fwlink/?LinkId=213218) (<http://go.microsoft.com/fwlink/?LinkId=213218>).

- Set COMPATIBILITY\_LEVEL to 100.
- Set READ\_COMMITTED\_SNAPSHOT to **on**. Performance testing has shown that Microsoft Dynamics AX performs better when the READ\_COMMITTED\_SNAPSHOT isolation option is set to **on**. You must use an ALTER DATABASE statement to set this option. This option cannot be set by using SQL Server Management Studio.

Run the following query, where <database name> is the name of the Microsoft Dynamics AX database. There can be no other active connections in the database when you run this query.

```
ALTER DATABASE <database name>  
  
    SET READ_COMMITTED_SNAPSHOT ON;
```



Query the sys.databases catalog view, and verify that the Microsoft Dynamics AX database contains a value of 1 in the is\_read\_committed\_snapshot\_on column. For more information, see the following Web pages:

- [sys.databases](http://go.microsoft.com/fwlink/?LinkId=213219) (http://go.microsoft.com/fwlink/?LinkId=213219)
- [Choosing Row Versioning-based Isolation Levels](http://go.microsoft.com/fwlink/?LinkId=213220) (http://go.microsoft.com/fwlink/?LinkId=213220)
- Set AUTO\_CREATE\_STATISTICS and AUTO\_UPDATE\_STATISTICS to **on**. Set AUTO\_UPDATE\_STATISTICS\_ASYNC to **off**. Performance testing has shown that Microsoft Dynamics AX performs better when the options have these settings.
- Make sure that the AUTO\_SHRINK option is set to **off**. When database files are automatically shrunk, performance of the database degrades. We recommend that the database administrator manually shrink the database files on a predefined schedule. For more information, see [Turn AUTO\\_SHRINK OFF!](http://go.microsoft.com/fwlink/?LinkId=213221) (http://go.microsoft.com/fwlink/?LinkId=213221) on the SQL Server Storage Engine Team's blog.



#### **Important:**

All Microsoft Dynamics AX databases must use the same SQL collation. These databases include the business database, model store database, Microsoft SQL Server Reporting Services database, and Microsoft SQL Server Analysis Services database.

## **Plan database storage**

Designing a data storage solution involves multiple interrelated aspects. We recommend that you follow this process when you must complete this task.

1. Characterize the input/output (I/O) load of the application. The I/O characteristics depend on your business requirements, and on the Microsoft Dynamics AX modules and components that you deploy. To determine your I/O characteristics, answer the following questions:
  - What is the read ratio versus write ratio of the application?
  - What is the typical I/O volume, or I/O per second (IOPs)?
  - How much of the I/O is sequential, and how much is random?
2. Determine the availability and performance requirements for the database system.
3. Determine the hardware that is required to support the analysis that you performed made in steps 1 and 2.
4. Configure SQL Server to take advantage of the hardware that you determined in step 3.
5. Track the performance as the workload changes.

Step-by-step guidance about database architecture and storage is beyond the scope of this topic. For more detailed recommendations from the SQL Server team, see [Microsoft SQL Server Storage Top 10 Best Practices](http://go.microsoft.com/fwlink/?LinkId=213199) (http://go.microsoft.com/fwlink/?LinkId=213199) and [Physical Database Storage Design](http://go.microsoft.com/fwlink/?LinkId=213201) (http://go.microsoft.com/fwlink/?LinkId=213201).

### Configuring physical storage

This section provides general recommendations for physical storage. Determine the applicability of these recommendations to your environment. Some storage area network (SAN) vendors may have alternative recommendations that take precedence. Recommendations are listed in order of priority.

- Many factors contribute to optimal I/O performance for a disk. By default, Windows Server 2008 aligns partitions. When you upgrade to Windows Server 2008, preexisting partitions are not automatically aligned and must be manually rebuilt to guarantee optimal performance. Therefore, until you rebuild the migrated partitions, alignment of disk partitions remains a relevant technology. Check existing disks on the server, and be aware of the differences in the analysis of basic partitions and dynamic volumes. Rebuild the partitions, if you can, and appropriate and create all new partitions based on guidance from the SAN vendor. If the vendor does not provide recommendations, follow the best practices for SQL Server. See [Disk Partition Alignment Best Practices for SQL Server](http://go.microsoft.com/fwlink/?LinkId=213222) (<http://go.microsoft.com/fwlink/?LinkId=213222>).

The partition offset value must be a multiple of the stripe size. In other words, the expression, , must resolve to an integer value.

- Create the tempdb database files, data files for the Microsoft Dynamics AX database, and Microsoft Dynamics AX log files on disk arrays of type RAID 1, RAID 0 + 1, or RAID 10. We recommend RAID 10 for these files. Do not use RAID 5.
- Store the data files for the Microsoft Dynamics AX database on separate physical stores from the transaction log files.
- Store the tempdb data files on a separate physical store from the data files and log files for the Microsoft Dynamics AX database.
- Store other database files on separate physical stores from the data files and log files for tempdb and the Microsoft Dynamics AX database.

### See Also

[System architecture](http://technet.microsoft.com/library/e4cbce28-2f87-4c12-8ea6-6e54d9570ce7(AX.60).aspx) ([http://technet.microsoft.com/library/e4cbce28-2f87-4c12-8ea6-6e54d9570ce7\(AX.60\).aspx](http://technet.microsoft.com/library/e4cbce28-2f87-4c12-8ea6-6e54d9570ce7(AX.60).aspx))

[Planning hardware infrastructure](http://technet.microsoft.com/library/e10f80b4-7816-492f-976a-4cb45c66ed65(AX.60).aspx) ([http://technet.microsoft.com/library/e10f80b4-7816-492f-976a-4cb45c66ed65\(AX.60\).aspx](http://technet.microsoft.com/library/e10f80b4-7816-492f-976a-4cb45c66ed65(AX.60).aspx))

[Reporting in Microsoft Dynamics AX](http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2(AX.60).aspx) ([http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2\(AX.60\).aspx](http://technet.microsoft.com/library/6728b08f-6618-4719-a333-ec7f5bec25c2(AX.60).aspx))

[Analytics in Microsoft Dynamics AX](http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f(AX.60).aspx) ([http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f\(AX.60\).aspx](http://technet.microsoft.com/library/8f284ccb-628f-4e84-b82c-3e0c032ad80f(AX.60).aspx))

[Microsoft Dynamics AX Performance Team's blog](http://go.microsoft.com/fwlink/?LinkId=213223) (<http://go.microsoft.com/fwlink/?LinkId=213223>)

## Install the Microsoft Dynamics AX databases

This topic describes how to install the Microsoft Dynamics AX databases and model files.

There are three database components: the Microsoft Dynamics AX transaction database, the model store, and the baseline model store. The Application Object Server (AOS) connects to the Microsoft Dynamics AX database to process transactions. The AOS connects to the model store to display forms and reports. The baseline model store is used to upgrade X++ code to Microsoft Dynamics AX 2012, and to analyze application updates before they are applied.

Beginning with Microsoft Dynamics AX 2012 R2, the model store and the transaction data are stored in separate databases. In other versions of Microsoft Dynamics AX 2012, the model store and transaction data are stored in a single database.

### **Note:**

If you are upgrading databases between Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2, you should review [How to: Perform in-place upgrade to Microsoft Dynamics AX 2012 R2](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx) ([http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f\(AX.60\).aspx](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx)).

*Model files* contain metadata information about application objects and are stored in the model store. For more information about model files, see [Models, Layers, and the Model Store](http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0(AX.60).aspx) ([http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0\(AX.60\).aspx](http://msdn.microsoft.com/library/cc7eb6ff-a5de-4a7e-a758-af783ce0ace0(AX.60).aspx)).

### **Warning:**

If you plan to enable database mirroring in Microsoft SQL Server, you must enable it after you install the Microsoft Dynamics AX database and AOS. If you enable database mirroring before you install Microsoft Dynamics AX components, warnings are generated when the AOS is installed.

## Before you install the Microsoft Dynamics AX databases

Verify that the following steps are completed before you install the Microsoft Dynamics AX databases.

- Configure SQL Server. For more information, see [Configure SQL Server and storage settings](#).
- On the computer where you plan to install the databases, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

- Make sure that you have the required permissions to install the database. For more information, see [Verify that you have the required permissions for installation](#).
- Make sure that the appropriate firewall ports are open. For more information, see [Firewall settings for Microsoft Dynamics AX components](#).

### Default models

The default models that are available in Setup vary based on the release of Microsoft Dynamics AX 2012 that you are installing.

#### Default models in Microsoft Dynamics AX 2012

If you are installing the original release of Microsoft Dynamics AX 2012, the following models are available in Setup by default.

Model	Description
Foundation	The base Microsoft Dynamics AX model, which contains the application framework and the application foundation. This model also contains functionality for the discrete manufacturing industry. This model is required.
Foundation Upgrade	The model that is used to upgrade from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.
Foundation Labels	Application labels for the foundation model. This model includes labels for the following languages: <ul style="list-style-type: none"><li>• Danish (Denmark)</li><li>• Dutch (Netherlands and Belgium)</li><li>• English (Canada, Ireland, Malaysia, New Zealand, Singapore, United Kingdom, United States, Australia, and South Africa)</li><li>• French (France, Canada, Belgium, and Switzerland)</li><li>• German (Germany, Austria, and Switzerland)</li><li>• Italian (Italy, Switzerland)</li><li>• Spanish (Spain, Mexico)</li></ul>
Process Manufacturing	The model that contains features for Process manufacturing production and logistics for Microsoft Dynamics AX. You can use these features to manage production, inventory, and costs in a process-controlled environment, such as in the food, chemical, and pharmaceutical industries.
Process Manufacturing Upgrade	The model that is used to upgrade Process manufacturing production and logistics from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.
Public Sector	The Public Sector model for Microsoft Dynamics AX. This model addresses the special controls, rules, and regulations of Public Sector organizations.
Project Management	The model that contains additional project-related features for Microsoft Dynamics AX. You can use these features to invoice customers for various billing scenarios, such as billing per unit of delivery and billing when a milestone is completed. You can also use these features to create customer and vendor retentions, and to manage workers on projects.


Model	Description
Project Management Upgrade	The model that is used to upgrade Project Management from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.

### Default models in Microsoft Dynamics AX 2012 Feature Pack

If you are installing Microsoft Dynamics AX 2012 Feature Pack, the following models are available in Setup by default.

Model	Description
Foundation	The base Microsoft Dynamics AX model, which contains the application framework and the application foundation. This model also contains functionality for the discrete manufacturing industry. This model is required.
Update for Foundation	Cumulative update for the Foundation model. If you selected to install the Foundation model, this model is installed automatically.
Foundation Upgrade	The model that is used to upgrade from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.
Update for Foundation Upgrade	Cumulative update for the Foundation Upgrade model. If you selected to install the Foundation Upgrade model, this model is installed automatically.
Foundation Labels	Application labels for the foundation model. This model includes labels for the following languages: <ul style="list-style-type: none"> <li>• Danish (Denmark)</li> <li>• Dutch (Netherlands and Belgium)</li> <li>• English (Canada, Ireland, Malaysia, New Zealand, Singapore, United Kingdom, United States, Australia, and South Africa)</li> <li>• French (France, Canada, Belgium, and Switzerland)</li> <li>• German (Germany, Austria, and Switzerland)</li> <li>• Italian (Italy, Switzerland)</li> <li>• Spanish (Spain, Mexico)</li> </ul>
Foundation Labels II	Application labels for the foundation model. These labels are for languages that were released after Microsoft Dynamics AX 2012 was made generally available. This model includes labels for the following languages: <ul style="list-style-type: none"> <li>• Arabic (Saudi Arabia)</li> <li>• Finnish (Finland)</li> <li>• Icelandic (Iceland)</li> <li>• Norwegian Bokmal (Norway)</li> <li>• Swedish (Sweden)</li> <li>• Thai (Thailand)</li> </ul>

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Model	Description
SYP labels	Cumulative update of labels that were added by software updates in the SYP layer.
Extensions	<p>Microsoft Dynamics AX extensions for the following industries:</p> <ul style="list-style-type: none"> <li>• Process Manufacturing - Process manufacturing production and logistics for Microsoft Dynamics AX. Allows you to manage production, inventory, and costs in a process-controlled environment, such as in the food, chemical, and pharmaceutical industries.</li> <li>• Public Sector - Addresses the special controls, rules, and regulations of Public Sector organizations.</li> <li>• Project Management – Allows you to invoice customers for various billing scenarios, such as billing per unit of delivery and billing when a milestone is completed. You can also create customer and vendor retentions, and manage workers on projects.</li> <li>• Retail - Provides mid-market and large retailers a complete head office and point of sale (POS) solution.</li> </ul> <p> <b>Important:</b> This model is required when you install Microsoft Dynamics AX 2012 Feature Pack. If the model includes functionality that you do not plan to use, turn off the appropriate license codes and configuration keys. Do not uninstall this model to remove unwanted functionality. Uninstalling models that are released by Microsoft will place your system in an unsupported state. If you have uninstalled this model, you must reinstall it using the instructions found in <a href="http://msdn.microsoft.com/library/c2449a03-7574-4b9d-8518-9005b560209f(AX.60).aspx">How to: Export and Import a Model</a> (<a href="http://msdn.microsoft.com/library/c2449a03-7574-4b9d-8518-9005b560209f(AX.60).aspx">http://msdn.microsoft.com/library/c2449a03-7574-4b9d-8518-9005b560209f(AX.60).aspx</a>).</p>
Extensions Upgrade	The model that is used to upgrade Process Manufacturing, Public Sector, Project Management, or Retail from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.

## Default models in Microsoft Dynamics AX 2012 R2

If you are installing Microsoft Dynamics AX 2012 R2, the following models are available in Setup by default.

Model	Description
Foundation	The base Microsoft Dynamics AX model, which contains the application framework, the core application, extensions for industries, and localizations for countries/regions. This model is required.
Foundation Upgrade	The model that is used to upgrade from Microsoft Dynamics AX 2009 or Microsoft Dynamics AX 4.0.
Foundation Labels	<p>Application labels for the foundation model. This model includes labels for the following languages:</p> <ul style="list-style-type: none"> <li>• Arabic (Saudi Arabia)</li> <li>• Chinese (China)</li> <li>• Czech (Czech Republic)</li> <li>• Danish (Denmark)</li> <li>• Dutch (Netherlands and Belgium)</li> <li>• English (Canada, India, Ireland, Malaysia, New Zealand, Singapore, United Kingdom, United States, Australia, and South Africa)</li> <li>• Estonian (Estonia)</li> <li>• Finnish (Finland)</li> <li>• French (France, Canada, Belgium, and Switzerland)</li> <li>• German (Germany, Austria, and Switzerland)</li> <li>• Hungarian (Hungary)</li> <li>• Icelandic (Iceland)</li> <li>• Italian (Italy, Switzerland)</li> <li>• Japanese (Japan)</li> <li>• Latvian (Latvia)</li> <li>• Lithuanian (Lithuania)</li> <li>• Norwegian Bokmal (Norway)</li> <li>• Polish (Poland)</li> <li>• Portuguese (Brazil)</li> <li>• Russian (Russia)</li> <li>• Spanish (Spain, Mexico)</li> <li>• Swedish (Sweden)</li> <li>• Thai (Thailand)</li> </ul>

### Include additional model files in the installation (optional)

When you install the databases, you must identify any additional model files that are required for your environment.

During installation, Setup displays models from the CD\Models\ folder and all its subfolders. To import additional layers or customizations, you can add other model files to this folder.

Follow these steps to include additional models in the installation:

1. Browse to the directory where the files from the Microsoft Dynamics AX DVD are shared. For more information, see [Create a shared directory for installation](#).
2. Create a subfolder in the CD\Models\ folder. We recommend that you create different folders to store the models that are received from different sources. For example, create a folder for each independent software vendor (ISV) or each value-added reseller (VAR).
3. Copy the additional .axmodel files to the folders that you created.

 **Warning:**

Do not copy your model files to the Standard folder. The Standard folder must be used only for models that are mandatory, such as the Foundation model (axsys.axmodel).

4. If models must be installed in a specific order, modify the ModelFileInstallOrder.xml file that is located in the Models folder. Models are installed in the order in which they appear in this file.

 **Important:**

The Foundation model (axsys.axmodel) must always be the first model that is listed in the ModelFileInstallOrder.xml file.

### Install the Microsoft Dynamics AX databases

Use this procedure to install the Microsoft Dynamics AX databases and model files. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Enter a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Databases**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select databases** page, select whether you want to create new databases by using Setup, or whether you want to configure existing databases. If you are upgrading, you should select to configure existing databases.



8. If you want Setup to create the databases, on the **Create new databases** page, in the **Server name** list, select the name of the computer that runs SQL Server. Provide database names or accept the default database names. By default, the transaction database is named MicrosoftDynamicsAX. The baseline database is optional. By default, the baseline database is named MicrosoftDynamicsAX\_baseline.

If you created the databases manually, or if you are upgrading a database, on the **Configure existing databases** page, select the name of the computer that runs SQL Server, and then select the names of the existing databases that you want to configure.

 **Important:**

The database name must not include any spaces or any of the following characters: backslashes (\), slashes (/), periods (.), commas (,), colons (:), brackets ([ ]), parentheses (( )), or hyphens (-). For more information about characters that are allowed by SQL Server, see the [Identifiers](http://go.microsoft.com/fwlink/?LinkId=214698) (<http://go.microsoft.com/fwlink/?LinkId=214698>) topic on MSDN.

Click **Next**.

9. On the **Select additional models** page, select models in the **Available Models** list. Setup lists all the models that are contained in the Models folder and its subfolders. Required models are selected by default, and you cannot clear the selection.

 **Security Note:**

You may have models, or .axmodel files, that are not electronically signed. The Setup program cannot verify the publisher of an unsigned model file. If you import an unsigned model file into the model store, you create a security risk. Setup displays an error message if a selected model file does not have a digital signature. Before you decide whether you want to continue or cancel the installation, carefully review the models that you have selected.

If you install models other than the Foundation models, you must complete the **Compile application** task when you run the initialization checklist. If you do not complete the **Compile application** task, you encounter errors when you run the **Synchronize database** task in the initialization checklist. For more information about the initialization checklist, see [Initialize Microsoft Dynamics AX](http://technet.microsoft.com/library/ba7f64a8-c5c3-4a9a-927b-21afc16f92af(AX.60).aspx) ([http://technet.microsoft.com/library/ba7f64a8-c5c3-4a9a-927b-21afc16f92af\(AX.60\).aspx](http://technet.microsoft.com/library/ba7f64a8-c5c3-4a9a-927b-21afc16f92af(AX.60).aspx)).

Click **Next** to continue.

10. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
11. On the **Ready to install** page, click **Install**.
12. After the installation is completed, click **Finish** to close the wizard.

## Install server and web server components

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The topics in this section provide information about how to install the server and web server components for Microsoft Dynamics AX. The following topics are included:

- [Install an Application Object Server \(AOS\) instance](#)
- [Install Enterprise Portal](#)
- [Install Search](#)
- [Install help server](#)

## Install an Application Object Server (AOS) instance

The Application Object Server (AOS) is a Windows service that controls communications among Microsoft Dynamics AX clients, databases, and applications.

Use the following topics to install an AOS instance:

- [Install an AOS instance](#)
- [Install multiple AOS instances](#)
- [Troubleshoot installation issues with AOS](#)

### Install an AOS instance

This topic describes how to install an Application Object Server (AOS) instance for Microsoft Dynamics AX 2012.

#### Note:

If you are upgrading AOS instances between Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2, you should review [How to: Perform in-place upgrade to Microsoft Dynamics AX 2012 R2](#) ([http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f\(AX.60\).aspx](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx)).

### Before you install the AOS instance

- On the computer where you will install the AOS instance, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

#### Note:

- A 64-bit computer is not required to install an AOS instance. However, if you need to complete a full Common Intermediate Language (CIL) generation, such as in a development environment, a 64-bit computer is required.
- Verify that you have the appropriate permissions to install the AOS instance. For more information, see [Verify that you have the required permissions for installation](#).
- If you plan to enable database mirroring in SQL Server, you must do so after installing the Microsoft Dynamics AX database and Application Object Server (AOS). If you enable database mirroring before installing Microsoft Dynamics AX components, the AOS instance will install with warnings.
- Select a service account for the AOS service. Before you install an AOS instance, you must determine which account you want the AOS service to run as. The AOS service can run as a domain account, as a managed service account, or as the Network Service account of the computer that you install the AOS service on. For more information about how to set up an account for the AOS service, see [Create service accounts](#).
- Choose a name for the AOS instance. We recommend that you use a uniform naming convention for all aspects of the installation, such as the database name and the name of the AOS instance. Because

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Microsoft Dynamics AX installations typically include one database and multiple AOS instances, make sure that the name of each AOS instance is unique but consistent with the naming convention. For example, you can use a name such as Fabrikam\_DYNAX6\_Live\_AOS1, which includes a shortened form of your business name, the Microsoft Dynamics AX version, a code that describes the purpose of the installation, and an identifier for the AOS instance.

The instance name must not include any blank characters or any of the following characters: ampersand (&), backslash (\), slash (/), colon (:), brackets ([]), parentheses (), angle brackets (<>), quotation marks (""), question mark (?), exclamation point (!), asterisk (\*), percent (%), caret (^), or pipe (|).

- You must install an initial AOS instance and complete the **Initialization checklist** on that instance before you install additional AOS instances. If you install additional AOS instances before you have completed the **Initialization checklist** those AOS instances will not start. For more information about how to install additional AOS instances, see [Install multiple AOS instances](#).

### Install the first or only AOS instance

Use this procedure to install a single or first instance of AOS on a server. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary, based on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Enter a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Application Object Server (AOS)**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location where you want 32-bit versions of Microsoft Dynamics AX files to be installed, and then click **Next**.
8. On the **Connect to the databases** page, in the **Server name** box, type or select the name of the Microsoft SQL Server computer. In the **Database name** box, select the name of the Microsoft Dynamics AX transaction database. Optionally, select the name of the baseline database.

If you are upgrading code or data from Microsoft Dynamics AX 4.0 or Microsoft Dynamics AX 2009, you must select **Register database for upgrade** and select a baseline database. The **Register database for upgrade** option is available when you install the first AOS in the computing environment. If you install more AOSs, this option is not available. You can determine whether the database was registered for upgrade by opening the Microsoft Dynamics AX client. If the database was registered for upgrade, the **Data upgrade checklist** is displayed when you open the client. Click **Next**.

9. On the **Configure an Application Object Server (AOS) instance** page, assign a name to the AOS instance. Optionally, you can specify the ports that are listed in the following table.

Port	Purpose	Default
TCP/IP port	Used by other Microsoft Dynamics AX components to communicate with AOS.	2712
Services WSDL port	Used by external applications to access the WSDL for AOS-based Microsoft Dynamics AX Web services.	8101
Services endpoint port	Used by external applications to access AOS-based Microsoft Dynamics AX Web services.	8201

10. On the **Specify an AOS account** page, select the Network Service account of the local computer (recommended only for development environments), a managed service account, or a domain account for the AOS service. If you select to use a managed service account, make sure to specify the account in the format *Domain\AccountName\$*.

 **Warning:**

The process of manually changing the service account for an AOS is complicated and prone to error. For this reason, if you must change the service account for an AOS, we recommend that you uninstall and reinstall the AOS by using Setup.exe. For more information, see [Change the account used by AOS](http://technet.microsoft.com/library/87aaf2fa-1190-4036-9d39-c1252c48da88(AX.60).aspx) ([http://technet.microsoft.com/library/87aaf2fa-1190-4036-9d39-c1252c48da88\(AX.60\).aspx](http://technet.microsoft.com/library/87aaf2fa-1190-4036-9d39-c1252c48da88(AX.60).aspx)).

11. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
12. On the **Ready to install** page, click **Install**.
13. After the installation is complete, click **Finish** to close the wizard.

The AOS service can take several minutes to start the first time after it is installed. To determine whether the AOS service has started, click **Administrative tools** > **Services**, and review the status of the **Microsoft Dynamics AX Object Server** service.

### Start the AOS Windows service

After you install an AOS instance, you must wait for the **Microsoft Dynamics AX Object Server** Windows service to start.

By default, if a Windows service takes longer than 30 seconds to start, the system displays a message informing you that the service did not respond to a start command. The AOS Windows service can take longer than 30 seconds to start, and the lack of a response in 30 seconds can cause the service to stop. Therefore, if an AOS instance repeatedly does not start, you may want to configure the registry to give Windows services more time, such as 120 seconds, to start before the error message is displayed.

 **Warning:**

This section describes how to modify the registry so that the AOS Windows service has enough time to start before Windows displays an error message. Be aware that serious problems can occur if you modify the registry incorrectly. We recommend that you back up the registry before you modify it. If a problem occurs, you can restore it. For more information about how to back up

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and restore the registry, see [Backup and recovery](http://go.microsoft.com/fwlink/?LinkId=214428) (http://go.microsoft.com/fwlink/?LinkId=214428).

1. Click **Start**, click **Run**, type **regedit**, and then click **OK**.
2. Locate and then click the following registry subkey:  
\\HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Control
3. Right-click **Control**, and then click **New > DWORD (32-Bit) Value**.
4. Right-click the new key, and then click **Rename**. Enter the name **ServicePipeTimeout**.
5. Right-click the key again, and then click **Modify**.
6. In the **Value data** text box, enter **120000**, and then click **OK**. The AOS Windows service now has 120 seconds to start before the system displays an error message.

If the AOS instance does not start after you implement this registry key, use the Microsoft Dynamics AX Server Configuration utility to verify that the AOS instance is using a unique port. Port conflicts prevent AOS instances from starting. For more information, see [Change AOS ports](http://technet.microsoft.com/library/2ba82a8b-bde4-4813-b231-5f025ff89927(AX.60).aspx) (http://technet.microsoft.com/library/2ba82a8b-bde4-4813-b231-5f025ff89927(AX.60).aspx).

### Run the initialization checklist

After you install and start an AOS instance, and before you complete any other tasks in Microsoft Dynamics AX, you must run the initialization checklist. For more information, see [Initialize Microsoft Dynamics AX](http://technet.microsoft.com/library/ba7f64a8-c5c3-4a9a-927b-21afc16f92af(AX.60).aspx) (http://technet.microsoft.com/library/ba7f64a8-c5c3-4a9a-927b-21afc16f92af(AX.60).aspx).

## Install multiple AOS instances

This topic describes how to install multiple instances of Application Object Servers (AOS) for Microsoft Dynamics AX 2012. You can install up to 99 AOS instances in your environment.



### Important:

You must install an initial AOS instance and complete the **Initialization checklist** on that instance before you install additional AOS instances. If you install additional AOS instances before you have completed the **Initialization checklist** those AOS instances will not start. For more information, see [Install an AOS instance](#).

## Install an AOS instance on multiple computers

In most production environments, you install multiple AOS instances, each on a different server. You can use multiple AOS instances to support batch processing and load balancing. Install each AOS instance in the way that is described in [Install an AOS instance](#), and make sure that you point every AOS instance to the same database. The first user who installs an AOS instance is automatically added to Microsoft Dynamics AX as an administrator. If subsequent AOS instances are installed by different users, you must manually add those users to the Microsoft Dynamics AX System administrator role to grant them administrative rights in Microsoft Dynamics AX.

You can use a single domain account for all instances of the AOS service, or you can specify a different account for each instance.

## Install multiple AOS instances on one computer

In some testing and development scenarios, you may want to install multiple AOS instances on the same computer. For example, if you are developing code for multiple versions of Microsoft Dynamics AX, you can install different versions of AOS side by side.

Install each AOS instance in the way that is described in [Install an AOS instance](#). If you install an AOS instance on a server that already has an AOS instance, you must specify a unique port number for each instance. By default, every time that you install an additional AOS instance on a computer, the TCP/IP, WSDL, and NET-TCP port numbers are incremented by 1. If the same port number is used for more than one AOS instance on a computer, one of the AOS instances that have conflicting port numbers does not start.

## See Also

[Application Object Server security and protection](http://technet.microsoft.com/library/ec82b5b9-8fa0-4d9e-9ac2-6ffa985be9c5(AX.60).aspx) (http://technet.microsoft.com/library/ec82b5b9-8fa0-4d9e-9ac2-6ffa985be9c5(AX.60).aspx)

[Configure an AOS instance as a batch server](http://technet.microsoft.com/library/74687f8d-fd55-4a99-bea9-835655905fb4(AX.60).aspx) (http://technet.microsoft.com/library/74687f8d-fd55-4a99-bea9-835655905fb4(AX.60).aspx)

[Manage an AOS configuration](http://technet.microsoft.com/library/4aab5e81-921d-4f7f-b379-adffcb8febce(AX.60).aspx) (http://technet.microsoft.com/library/4aab5e81-921d-4f7f-b379-adffcb8febce(AX.60).aspx)

## Troubleshoot installation issues with AOS

The following section provides information that can help you troubleshoot issues that you may encounter when you install Application Object Server (AOS).

### An error occurred during the install custom action step within the AOS Server installer

If the AOS installation fails, you may receive the following message: "An error occurred during the install custom action step within the AOS Server installer." This error may indicate that the event logs on the computer have conflicting names. In this case, the following message also appears in the log file: "Only the first eight characters of a custom log name are significant, and there is already another log on the system using the first eight characters of the name given."

When AOS is installed, an event log that is named **Microsoft Dynamics AX Workflow** is created for the Workflow service. The custom action in Windows Installer that creates the Workflow event log does not verify whether an event log already exists that has the same first eight characters in the name. If another application has already created an event log that has the same first eight characters in the name, the operation to create the Workflow event log may fail. Therefore, the custom action fails, and Windows Installer rolls back the installation.

To work around this issue, you can rename the conflicting event log and attempt to install AOS again. Event logs are listed as subkeys under the following registry key:

*HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog*. After AOS is successfully installed, you can rename the conflicting registry key to its original name.

#### **Warning:**

This section describes how to modify the registry. Be aware that serious problems can occur if you modify the registry incorrectly. We recommend that you back up the registry before you modify it. Then, if a problem occurs, you can restore the registry. For more information about how to back up and restore the registry, see Microsoft Knowledge Base article number [256986](http://support.microsoft.com/kb/256986) (<http://support.microsoft.com/kb/256986>).



## Install Enterprise Portal

This section contains information about how to install Microsoft Dynamics AX 2012 Enterprise Portal. Use the following topics to help you install Enterprise Portal.

- [Checklists for deploying Enterprise Portal sites](#)
- [Install Enterprise Portal on a stand-alone server](#)
- [Install Enterprise Portal in a Web farm](#)
- [Install Enterprise Portal Help content](#)
- [Install multiple Enterprise Portals on the same server](#)
- [Set up Enterprise Portal and Role Centers](#)
- [Deploy Microsoft Dynamics AX Web parts to a SharePoint site](#)
- [Troubleshoot installation issues with Enterprise Portal and Role Centers](#)



### Note:

If you are upgrading Enterprise Portal between Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2, you should review [How to: Perform in-place upgrade to Microsoft Dynamics AX 2012 R2](#) ([http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f\(AX.60\).aspx](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx)).

## Checklists for deploying Enterprise Portal sites

The topics in this section provide checklists that can help you deploy different types of sites in Enterprise Portal for Microsoft Dynamics AX.

- [Checklist: Deploy an internal Enterprise Portal site that has Role Centers](#)
- [Checklist: Deploy an employee self-service portal](#)
- [Checklist: Deploy an unsolicited vendor portal](#)
- [Checklist: Deploy a vendor self-service portal](#)

### Checklist: Deploy an internal Enterprise Portal site that has Role Centers

This topic provides checklists that can help you deploy Enterprise Portal for Microsoft Dynamics AX and Role Centers for an employee portal that is for internal use only. An employee portal for internal use only provides access to the following modules sites in Enterprise Portal. If your business or organization deploys Role Centers, users can also access their Role Center page on the Home site.

- Home site/Role Center
- Sales
- Procurement
- Employee services
- Project
- Compliance
- Service Management

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User access to modules sites is determined by Microsoft Dynamics AX security roles. For a description of the features and reports that are available on each of these modules sites, see [Overview of Enterprise Portal for Microsoft Dynamics AX](http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx) (http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx). If you want to deploy an employee self-service portal that gives employees access to expense management, time and attendance, and other personal information, see [Checklist: Deploy an employee self-service portal](#).

The following table describes the tasks that you must complete to deploy Enterprise Portal and Role Centers. After you complete the tasks in this checklist, internal users can access the employee portal in the network.

Task	More information
Install Enterprise Portal	<a href="#">Install Enterprise Portal on a stand-alone server</a> -or- <a href="#">Install Enterprise Portal in a Web farm</a>
Install Enterprise Portal Help content	<a href="#">Install Enterprise Portal Help content</a>
Configure security and enable users to access the Enterprise Portal site.	<a href="#">Checklist: Configure Enterprise Portal security</a> (http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx)
Configure parameters for Enterprise Portal.	<a href="#">Specify Enterprise Portal parameters</a> (http://technet.microsoft.com/library/cc5082d0-0c89-4553-a21b-af076c9f830a(AX.60).aspx)
Configure Enterprise Portal for Role Centers.	<a href="#">Checklist: Configure Role Centers</a> (http://technet.microsoft.com/library/17abe92f-40df-4d5f-9f8d-4842c0a1d001(AX.60).aspx)

### Checklist: Deploy an employee self-service portal

This topic provides checklists that can help you deploy an employee self-service portal for Enterprise Portal for Microsoft Dynamics AX. An employee self-service portal gives users access to expense management, time and attendance, and other personal information. For a complete description of the features and reports that are available on an employee self-service portal, see [Overview of Enterprise Portal for Microsoft Dynamics AX](http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx) (http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx). If you want to deploy an employee portal that is for internal use only, and that gives users access to Microsoft Dynamics AX module sites and Role Centers, see [Checklist: Deploy an internal Enterprise Portal site that has Role Centers](#).

The following table describes the tasks that you must complete to deploy Enterprise Portal. After you complete the tasks in this checklist, internal users can access the employee self-service portal in the network.

Task	More information
Install Enterprise Portal.	<a href="#">Install Enterprise Portal on a stand-alone server</a> -or- <a href="#">Install Enterprise Portal in a Web farm</a>
Install Enterprise Portal Help content	<a href="#">Install Enterprise Portal Help content</a>
Configure security and enable users to access the Enterprise Portal site.	<a href="#">Checklist: Configure Enterprise Portal security</a> ( <a href="http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx">http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx</a> )
Configure parameters for Enterprise Portal.	<a href="#">Specify Enterprise Portal parameters</a> ( <a href="http://technet.microsoft.com/library/cc5082d0-0c89-4553-a21b-af076c9f830a(AX.60).aspx">http://technet.microsoft.com/library/cc5082d0-0c89-4553-a21b-af076c9f830a(AX.60).aspx</a> )

### Checklist: Deploy an unsolicited vendor portal

An unsolicited vendor portal enables vendor prospects to register with your company.

The following table describes tasks that you must complete to set up and configure an unsolicited vendor portal.

Task	More information
Install Enterprise Portal.	<a href="#">Install Enterprise Portal on a stand-alone server</a> -or- <a href="#">Install Enterprise Portal in a Web farm</a>
Install Enterprise Portal Help content.	<a href="#">Install Enterprise Portal Help content</a>
Create an Enterprise Portal public site.	<a href="#">Create a public Enterprise Portal site</a> ( <a href="http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx">http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx</a> )
Enable guest users to access the public Enterprise Portal site.	See the section titled <i>Grant users access to a public site</i> in <a href="#">Enable users to access Enterprise Portal</a> ( <a href="http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx">http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx</a> )
Configure user provisioning for vendor-add requests.	<a href="#">Key tasks: Set up vendor add requests</a> ( <a href="http://technet.microsoft.com/library/7cf92c10-76ff-4090-b9d6-15b97ffa6521(AX.60).aspx">http://technet.microsoft.com/library/7cf92c10-76ff-4090-b9d6-15b97ffa6521(AX.60).aspx</a> )

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Task	More information
Configure security and enable users to access the Enterprise Portal site.	<a href="http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx">Checklist: Configure Enterprise Portal security</a> (http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx)

### Checklist: Deploy a vendor self-service portal

This topic provides checklists that can help you deploy Enterprise Portal for Microsoft Dynamics AX for vendor access. Vendors who have registered with your business or organization can perform a variety of tasks from a vendor self-service portal. Some of the common tasks include the following:

- Update a profile
- Update contacts
- View purchase orders that have not yet been invoiced
- Request to be added to additional procurement categories
- Request to add users from your organization to the vendor self-service portal
- Create invoices from purchase orders

For a complete description of the features and reports available on a vendor portal, see [Overview of Enterprise Portal for Microsoft Dynamics AX](http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx) (http://technet.microsoft.com/library/5c731ae4-5882-41cc-9748-6b0e65a1664d(AX.60).aspx). For information about how to deploy an unsolicited vendor portal, see [Checklist: Deploy an unsolicited vendor portal](#).

The following table describes tasks that you must complete to deploy Enterprise Portal.

Task	For more information...
Install Enterprise Portal	<a href="#">Install Enterprise Portal on a stand-alone server</a> -or- <a href="#">Install Enterprise Portal in a Web farm</a>
Install Enterprise Portal Help content	<a href="#">Install Enterprise Portal Help content</a>
Configure Enterprise Portal security.	<a href="http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx">Checklist: Configure Enterprise Portal security</a> (http://technet.microsoft.com/library/fed77384-7e0c-446f-8f17-1fb3220a07c1(AX.60).aspx)
Configure Microsoft Dynamics AX to enable vendor user provisioning. Users are provisioned either as part of the user request process, or automatically through specific tasks in the user request workflow. User provisioning automates the creation of Microsoft Dynamics AX user accounts and user permission assignments. This ensures proper control of users and their access to the Vendor portal and simplifies the process of creating users.	<a href="http://technet.microsoft.com/library/fd6b06a0-6bb7-49f5-9717-ae40a1f7d327(AX.60).aspx">Configuring Enterprise Portal for vendor requests</a> (http://technet.microsoft.com/library/fd6b06a0-6bb7-49f5-9717-ae40a1f7d327(AX.60).aspx)

Task	For more information...
Specify vendor roles on the <b>External roles</b> form.	Click <b>System administration</b> > <b>Setup</b> > <b>Security</b> > <b>External roles</b> .
Configure Enterprise Portal parameters	<a href="http://technet.microsoft.com/library/cc5082d0-0c89-4553-a21b-af076c9f830a(AX.60).aspx">Specify Enterprise Portal parameters</a> (http://technet.microsoft.com/library/cc5082d0-0c89-4553-a21b-af076c9f830a(AX.60).aspx)

**Next step**

After you finished preparing the Enterprise Portal environment for vendor access, you must configure vendor portal pages and vendor portal workflow templates in the Microsoft Dynamics AX client. For more information, see [Configuring Enterprise Portal for vendor requests](http://technet.microsoft.com/library/fd6b06a0-6bb7-49f5-9717-ae40a1f7d327(AX.60).aspx) (http://technet.microsoft.com/library/fd6b06a0-6bb7-49f5-9717-ae40a1f7d327(AX.60).aspx).

### Install Enterprise Portal on a stand-alone server

This topic describes how to install Enterprise Portal for Microsoft Dynamics AX for a stand-alone deployment. Businesses and organizations typically use a stand-alone deployment for development environments or testing.

For information about scale-out deployments, see [Install Enterprise Portal in a Web farm](#). For information about how to install Enterprise Portal in an environment with two domain controllers and two firewalls for extranet deployments, see [Install Enterprise Portal in a traditional perimeter network](#) ([http://technet.microsoft.com/library/935a3dc1-157c-4020-a75a-c5ad593484d5\(AX.60\).aspx](http://technet.microsoft.com/library/935a3dc1-157c-4020-a75a-c5ad593484d5(AX.60).aspx)).

### Before you install Enterprise Portal

Complete the following tasks before you install Enterprise Portal and Role Centers:

- If you installed a non-SYS layer model file in the Microsoft Dynamics AX environment, compile Microsoft Dynamics AX before you install Enterprise Portal. If you do not compile Microsoft Dynamics AX, the Enterprise Portal installation might fail.
- If you want to deploy Enterprise Portal in multiple languages, download and deploy the Microsoft SharePoint 2010 products [Language Packs](#) (<http://go.microsoft.com/fwlink/?LinkId=224927>) on the Web server before you install Enterprise Portal. Enterprise Portal is currently supported in the following languages:
  - Arabic - 1025
  - Danish - 1030
  - German - 1031
  - English - 1033
  - Finnish - 1035
  - French - 1036
  - Italian - 1040
  - Dutch - 1043
  - Norwegian - 1044
  - Swedish - 1053
  - Thai - 1054
  - Spanish - 3082

To deploy Enterprise Portal in one of the languages list here, you must create a Web application in SharePoint and specify the new language. For more information, see [Create an Enterprise Portal site](#) ([http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f\(AX.60\).aspx](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx)).

- Verify that the name of the server that will host Enterprise Portal does not include an underscore, for example EPserver\_1. If an Enterprise Portal server includes an underscore in the server name, lookups and web pages might display errors.
- On the computer where you will install Enterprise Portal, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

- Verify that you have the appropriate permissions to install Enterprise Portal. If you are installing Enterprise Portal on a server that already hosts an Enterprise Portal deployment and you want to overwrite that deployment, you must have Full Control permission in SharePoint for the existing Enterprise Portal site collection. If you do not have Full Control permission, you will not be able to delete the existing site collection by using Setup. For more information about permissions, see [Verify that you have the required permissions for installation](#).
- If you intend to deploy multiple Enterprise Portals on the same server and those portals will connect to different Application Object Servers, then you must update the web.config file. For more information, see [Install multiple Enterprise Portals on the same server](#).
- For Secure Sockets Layer (SSL) encryption, you cannot install Enterprise Portal on a Web application that is already configured to use HTTP and HTTPS bindings. You must remove the HTTP binding from the site by using Internet Information Services (IIS) Manager before you install Enterprise Portal.

#### **Important:**

If you attempt to install Enterprise Portal on an existing Internet Information Services (IIS) site that is already configured to use a host header, the installation fails, unless you create a [BackConnectionHostNames](http://go.microsoft.com/fwlink/?LinkId=194948) (http://go.microsoft.com/fwlink/?LinkId=194948) registry entry.

## Pre-installation tasks

Perform the following tasks to verify that you can deploy Enterprise Portal on the Web server.

1. Verify that you can open SharePoint 2010 Central Administration on the Enterprise Portal server.
2. Verify that you have the appropriate permissions to create sites by using SharePoint 2010 Central Administration to create a SharePoint team site.
3. Verify that you can browse the team site without prompts and resolve the URL without proxy errors or other problems.
4. If you intend to deploy or configure Enterprise Portal at a command prompt, verify that you can start the SharePoint 2010 Management Shell.

## Install Enterprise Portal

This section describes how to install Enterprise Portal by using Setup on a server that includes either Microsoft SharePoint Foundation 2010 or Microsoft SharePoint Server 2010. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary, based on the components that you are installing.

#### **Tip:**

By default, when you install SharePoint 2010 products, the system creates a Web application on port 80. Microsoft Dynamics AX Setup deploys an Enterprise Portal site on the port 80 Web application unless you specify a different Web application. If you do not intend to deploy Enterprise Portal on the default port-80 Web application, you must use SharePoint 2010 Central Administration to create a new Web application before you install Enterprise Portal by using Setup. Also note, if you create a new Web application, you must specify the Business Connector

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proxy account as the application pool account in the **Configurable** list. If necessary, register a new managed account with SharePoint.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Enter a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Enterprise Portal (EP)**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want Enterprise Portal to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this screen is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by the .NET Business Connector. Click **Next**.
11. On the **Configure a Web site for Enterprise Portal** page, select a web site. If no web sites are available in the list, you must cancel Setup, create a web site by using SharePoint Central Administration, and then try the installation again.

We recommend that you select the **Configure for Windows SharePoint Services** option. If you select this option, Setup verifies that the site is a SharePoint site. If the site is not a SharePoint site, Setup extends the site in SharePoint. Setup also sets the application pool to run under the service account and sets the authentication method to Windows NTLM.



 **Important:**

Note the following important information about the **Create Web site** option:

- Clear this option if you are installing Enterprise Portal for a public site, such as an unsolicited vendor portal. For public sites, you must create the Enterprise Portal site by using the public site template. For more information, see [Create a public Enterprise Portal site](http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx) ([http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883\(AX.60\).aspx](http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx)).
- If you are installing Enterprise Portal for a stand-alone installation select the **Create Web site** option to create a site at the following URL: `http://ServerName/sites/DynamicsAX`. Setup creates a new site that uses port 80.

Click **Next**.

 **Note:**

If your business or organization purchased a developer license for Microsoft Dynamics AX, you can change the URL for the web site, title, and description before you complete the installation. Modify the EPSetupParams file in the Application Object Tree (AOT) (**Web > Web Files > Static Files > EPSetupParams**).

12. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is complete, click **Finish** to close the wizard.

## Next step

**Configure the firewall on the Enterprise Portal server:** For information about the recommended firewall settings on an Enterprise Portal server, see [Firewall settings for Microsoft Dynamics AX components](#).

### Install Enterprise Portal in a Web farm

This topic describes how to install and configure Enterprise Portal for Microsoft Dynamics AX in a web farm. A web farm distributes Enterprise Portal requests and processing across multiple servers, which can improve performance and availability.

For information about how to install Enterprise Portal in an environment with two domain controllers and two firewalls for extranet deployments, see [Install Enterprise Portal in a traditional perimeter network](http://technet.microsoft.com/library/935a3dc1-157c-4020-a75a-c5ad593484d5(AX.60).aspx) ([http://technet.microsoft.com/library/935a3dc1-157c-4020-a75a-c5ad593484d5\(AX.60\).aspx](http://technet.microsoft.com/library/935a3dc1-157c-4020-a75a-c5ad593484d5(AX.60).aspx)).

### Before you install Enterprise Portal in a Web farm

Complete the following tasks before you install Enterprise Portal in a Web farm:

- If you installed a non-SYS layer model file in the Microsoft Dynamics AX environment, compile Microsoft Dynamics AX before you install Enterprise Portal. If you do not compile Microsoft Dynamics AX, the Enterprise Portal installation might fail.
- Verify that the name of each server in the Enterprise Portal Web farm does not include an underscore, for example EPserver\_1. If an Enterprise Portal server includes an underscore in the server name, lookups and Web pages might display errors.
- On each computer where you will install Enterprise Portal, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

- Verify that you have the appropriate permissions to install Enterprise Portal.
  - Member of the Administrator group in Windows on each server in the farm.
  - Member of the dbcreator and securityadmin roles in the Microsoft Dynamics AX SQL Server instance.
  - Member of the System administrator role in Microsoft Dynamics AX.
  - Member of the SharePoint 2010 farm administrators group (if SharePoint is already installed on each server)
  - If you are installing Enterprise Portal on a server that already hosts an Enterprise Portal deployment and you want to overwrite that deployment, you must have Full Control permission in SharePoint for the existing Enterprise Portal site collection. If you do not have Full Control permission, you will not be able to delete the existing site collection by using Setup.
- For Secure Sockets Layer (SSL) encryption, you cannot install Enterprise Portal on a Web application that is already configured to use HTTP and HTTPS bindings. You must remove the HTTP binding from the site by using IIS Manager before you install Enterprise Portal.

- If you plan to deploy multiple Enterprise Portals on the same server and those portals will connect to different Application Object Servers, you must update the web.config file. For more information, see [Install multiple Enterprise Portals on the same server](#).
- If you plan to use host headers, review the SharePoint documentation about host headers and Web farms before you install Enterprise Portal. For more information, see [Plan for host-named site collections \(SharePoint Server 2010\)](#) (<http://go.microsoft.com/fwlink/?LinkId=260817>)

 **Important:**

If you attempt to install Enterprise Portal on an existing Internet Information Services (IIS) site that is already configured to use a host header, the installation fails, unless you create a [BackConnectionHostNames](#) (<http://go.microsoft.com/fwlink/?LinkId=194948>) registry entry.

### Web farm topology overview

This topic uses the following Web server topology. The database, Application Object Server (AOS), and report server are not included in this list. Your Web server topology might differ.

Server	Description	Notes
Administration Server	<ul style="list-style-type: none"> <li>• The following components and services are installed and running:</li> <li>• Internet Information Services (IIS)</li> <li>• Microsoft SharePoint Server 2010</li> <li>• SharePoint Central Administration Service</li> <li>• Microsoft SharePoint Foundation Web Application service</li> <li>• Microsoft Dynamics AX Enterprise Portal</li> </ul>	<ul style="list-style-type: none"> <li>• This server is the SharePoint farm administration server.</li> <li>• The Microsoft SharePoint Foundation Web Application service must be running. You must configure this service in SharePoint Central Administration.</li> <li>• You must install Enterprise Portal on each front-end Web server before you install Enterprise Portal on this server.</li> <li>• When you install Enterprise Portal on this server by using Microsoft Dynamics AX Setup, you can select the <b>Create Web site</b> option or you can create the site later using SharePoint Central Administration. You must not select the <b>Create Web site</b> option on any front-end Web server.</li> </ul>
Web front-end servers	<ul style="list-style-type: none"> <li>• IIS</li> <li>• SharePoint Server 2010</li> <li>• Microsoft SharePoint Foundation Web Application service</li> <li>• Microsoft Dynamics AX Enterprise Portal</li> </ul>	<ul style="list-style-type: none"> <li>• SharePoint is installed on each server as a Web front-end.</li> <li>• You must install Enterprise Portal on each front-end Web server before you install Enterprise Portal on the SharePoint farm administration server.</li> <li>• When you install Enterprise Portal on each Web front-end server by using Microsoft Dynamics AX Setup, you must clear the <b>Create Web site</b> option.</li> </ul>

### Install and configure SharePoint

Install and configure SharePoint 2010 on each farm in the server. For more information, see [Multiple servers for a three-tier farm \(SharePoint Server 2010\)](http://go.microsoft.com/fwlink/?LinkId=260586) (http://go.microsoft.com/fwlink/?LinkId=260586).

Note the following requirements for the SharePoint installation.

1. If you are using a load balancer, specify a site name in the **Load Balanced URL** field on the Web application that will host the Enterprise Portal site.
2. The Microsoft SharePoint Foundation Web Application service must be running on the farm administration server. You must configure this service in SharePoint Central Administration.
3. Configure the Web application to use the Business Connector proxy account. This means you must select the **Configurable** option and then enter the proxy credentials.
4. If you want to deploy Enterprise Portal in multiple languages, you must download and deploy the Microsoft SharePoint 2010 products [Language Packs](http://go.microsoft.com/fwlink/?LinkId=224927) (http://go.microsoft.com/fwlink/?LinkId=224927) on each Web server before you install Enterprise Portal. Enterprise Portal is currently supported in the following languages:
  - Arabic - 1025
  - Danish - 1030
  - German - 1031
  - English - 1033
  - Finnish - 1035
  - French - 1036
  - Italian - 1040
  - Dutch - 1043
  - Norwegian - 1044
  - Swedish - 1053
  - Thai - 1054
  - Spanish - 3082

For more information about how to deploy Enterprise Portals in multiple languages, see [Create an Enterprise Portal site](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx) (http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx).

### Before you install Enterprise Portal

Perform the following tasks to verify that you can deploy Enterprise Portal in the SharePoint server farm.

- Verify that you can open SharePoint 2010 Central Administration on the Enterprise Portal administration server.
- Verify that you have the appropriate permissions to create sites by using SharePoint 2010 Central Administration to create a SharePoint team site.
- Verify that you can browse the team site without prompts and resolve the URL without proxy errors or other problems.

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This section describes how to install Enterprise Portal by using Setup. You must install Enterprise Portal on each Web front-end server before you install on the farm administration server. When you install Enterprise Portal on the Web front-end servers, you clear the option to create a site. This means that when you install Enterprise Portal on the Web front-end servers, Setup deploys files and configures settings on the server, but no site is created. When you install Enterprise Portal on the farm administration server, you select the option to create a site.



### Tip:

By default, when you install SharePoint 2010 products, the system creates a Web application on port 80. Microsoft Dynamics AX Setup deploys an Enterprise Portal site on the port 80 Web application unless you specify a different Web application. If you do not intend to deploy Enterprise Portal on the default port-80 Web application, you must use SharePoint 2010 Central Administration to create a new Web application before you install Enterprise Portal.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Enter a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Enterprise Portal (EP)**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want Enterprise Portal to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.



### Note:

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this screen is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by the .NET Business Connector. Click **Next**.

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11. On the **Configure a Web site for Enterprise Portal** page, select a web site. If no Web sites are available in the list, you must cancel Setup, create a web site by using SharePoint Central Administration, and then try the installation again.

We recommend that you select the **Configure for Windows SharePoint Services** option. If you select this option, Setup verifies that the site is a SharePoint site. If the site is not a SharePoint site, Setup extends the site in SharePoint. Setup also sets the application pool to run under the service account and sets the authentication method to Windows NTLM.

### **Important:**

Note the following important information about the **Create Web site** option:

- When you install Enterprise Portal on Web front-end servers in a server farm, you must clear this option. The site must be created only on the administration server for the Web farm.
- If you are installing Enterprise Portal on an administration server for a Web farm, select the **Create Web site** option to create a site at the following URL:  
`http://ServerName/sites/DynamicsAX`. Setup creates a new site that uses port 80.
- Clear this option if you are installing Enterprise Portal for a public site, such as an unsolicited vendor portal. For public sites, you must create the Enterprise Portal site by using the public site template. For more information, see [Create a public Enterprise Portal site](http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx) ([http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883\(AX.60\).aspx](http://technet.microsoft.com/library/5fe392a4-5683-469e-bcfe-ecfaa6e24883(AX.60).aspx)).

Click **Next**.

### **Note:**

If your business or organization purchased a developer license for Microsoft Dynamics AX, you can change the URL for the web site, title, and description before you complete the installation. Modify the EPSetupParams file in the Application Object Tree (AOT) (**Web > Web Files > Static Files > EPSetupParams**).

12. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is complete, click **Finish** to close the wizard.
15. Repeat this procedure on every Web server in the server farm.

## **Optional: Specify machineKey values in web.config files for sites in a Web farm**

If Enterprise Portal pages display authentication and access errors after you installed Enterprise Portal on each server in the Web farm, you might have to specify values for machineKey properties in the web.config file of each server in the Web farm. MachineKey properties, `validationKey` and `decryptionKey`, are used to hash and decrypt authentication tickets and cookies. Values for machineKey properties must be the same on all servers in the Web farm.

1. On the administration server for the Web farm, open the web.config file in a text editor such as Notepad. By default, the file is located in the following directory:  
`C:\inetpub\wwwroot\wss\VirtualDirectories\PortNumber`.

2. Locate the `machineKey` section, and copy the `validationKey` and `decryptionKey` values to a separate text file. The following is an example of a `machineKey` section:

```
<machineKey validationKey="4785A9C8F5FA32B47E5245AC48671291F1CE55735A475EB7"  
decryptionKey="D961976E181646326D64E01AB2052F5D076F0ABDE2C702FB" validation="SHA1" />
```

3. Edit the `web.config` files on the other servers in the Web farm. Replace the existing `machineKey` values with the values that you copied from the administration server for the Web farm.

For more information about how to configure `machineKey` properties, see [How to: Configure MachineKey in ASP.Net 2.0](http://go.microsoft.com/fwlink/?LinkId=117441) (<http://go.microsoft.com/fwlink/?LinkId=117441>), especially the "Web Farm Deployment Considerations" section.

### Configure firewall settings on Enterprise Portal servers

For information about the recommended firewall settings on an Enterprise Portal server, see [Firewall settings for Microsoft Dynamics AX components](#).

### Next steps

After you deploy Enterprise Portal in the Web farm, you must enable users to access the Enterprise Portal site. For more information, see [Enable users to access Enterprise Portal](http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx) ([http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897\(AX.60\).aspx](http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx)). For information about other Enterprise Portal deployment and configuration tasks, see [Checklists for deploying Enterprise Portal sites](#).

### See Also

[Troubleshoot installation issues with Enterprise Portal and Role Centers](#)

## Install Enterprise Portal Help content

The MS.EP.HC.cab file contains Help topics for Enterprise Portal pages. This topic describes how to install Enterprise Portal Help.

### Before you begin

- Deploy SharePoint Language Packs on the Enterprise Portal server. For more information, see “About Enterprise Portal sites for multiple languages” in the [Create an Enterprise Portal site](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx) ([http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f\(AX.60\).aspx](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx)) topic.
- Verify that the SharePoint Timer service is running. Enterprise Portal Help is installed as a job by the SharePoint Timer service.
- Determine which languages you want to install. You can install Enterprise Portal Help for the languages in the following table.

Language	Language code
Arabic	1025
Danish	1030
German	1031
English	1033
Finnish	1035
French	1036
Italian	1040
Dutch	1043
Norwegian	1044
Swedish	1053
Thai	1054
Spanish	3082

### Install Enterprise Portal Help

1. Copy each of the MS.EP.HC.cab files into its corresponding directory on the Web server at this location:

*Drive*:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\HCCab\*<language\_code>*\

For example, download the Arabic version of the MS.EP.HC.cab file to this directory: C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\HCCab\1025\



2. Open the SharePoint 2010 Management Shell on the Enterprise Portal Web server. Click **Start**, click **All Programs**, click **SharePoint 2010 Products**, and then click **SharePoint 2010 Management Shell**.
3. In the management shell, run the following command:  
Install-SPHelpCollection -LiteralPath "Drive:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\HCCab\*language\_code*\MS.EP.HC.cab"  
For example, to install Enterprise Portal Help for Spanish, run the following command:  
Install-SPHelpCollection -LiteralPath "Drive:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\HCCab\3082\MS.EP.HC.cab"
4. Repeat the command for each language that you want to install. After SharePoint finishes the Timer job, you can open Enterprise Portal Help by clicking the Help icon on any Enterprise Portal page.

### Install multiple Enterprise Portals on the same server

This topic describes how to install and configure multiple Enterprise Portals on the same server. Portals can be configured to access the same or different Microsoft Dynamics AX Application Object Server (AOS) instances, as described in this topic.

#### **Warning:**

Before you continue, consider the following.

- If you install multiple portals on the same server, you create a single point of failure for all portals if SharePoint or IIS are not available on the server.
- Scheduled downtime for maintenance affects all portals on the server which might limit how often you can perform maintenance.
- If you plan to install portals for development, testing, and production on the same server (not recommended) you could unintentionally deploy development changes to production which could cause data-integrity problems.
- Multiple portals consume more resources on the server than a single portal. Plan your topology accordingly.
- You can deploy multiple portals on the same server as long as the user controls are the same. This means the controls must use the same AX model. Multiple portals on the same server are not supported if the codebase is different.

### Enterprise Portal and the AOS

Enterprise Portal determines which AOS instance to connect to by reading a Microsoft Dynamics AX client configuration. If you install Enterprise Portal on a server that hosts an AOS instance, the client configuration is stored, by default, in the registry on the AOS. If you install Enterprise Portal on a server that does not host an AOS or if Setup cannot locate a client configuration on the Web server, you are prompted to specify the location of the client configuration. If you create additional Enterprise Portals on the server, those portals use the AOS that is specified in the client configuration unless you specify a different client configuration, as described in this topic.

### Multiple portals on the same server that use the same AOS

By default, when you install Enterprise Portal, Setup creates an Enterprise Portal site on the SharePoint-80 Web application. You can create additional sites on the port 80 Web application by using SharePoint Central Administration. All sites created in this manner use the same AOS. For more information about how to create an Enterprise Portal site, see [Create an Enterprise Portal site](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx) ([http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f\(AX.60\).aspx](http://technet.microsoft.com/library/da9149f8-9bb8-4d95-b392-4c6954a60b5f(AX.60).aspx)).

If you create additional web applications by using SharePoint Central Administration, you must deploy Enterprise Portal on the new web applications by using Microsoft Dynamics AX Setup. You can then create additional sites on the new web application by using SharePoint Central Administration. All sites created in this manner use the same AOS.

## Multiple portals on the same server that use different AOSs

To install multiple portals on the same server and have those portals connect to different AOS instances, you must follow these steps.

### Before you begin

Enterprise Portal determines which AOS to connect to by reading a Microsoft Dynamics AX client configuration. To install multiple portals on the same server and have those portals connect to different AOS instances, the portals must read separate Microsoft Dynamics AX client configurations. Create one or more Microsoft Dynamics AX client configuration files by using the Microsoft Dynamics AX 2012 Configuration utility and store the configuration files on a network share. For more information about how to create a configuration file, see [Manage a client configuration](http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx) ([http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3\(AX.60\).aspx](http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx)).

1. Use Microsoft Dynamics AX Setup to install Enterprise Portal on the server. By default, Setup creates an Enterprise Portal intranet site on the SharePoint-80 Web application. For the purpose of this procedure, this portal is called Portal1 and it is connected to AOS1. For more information about how to install Enterprise Portal, see [Install Enterprise Portal on a stand-alone server](#).
2. Create a new web application on the Enterprise Portal server by using SharePoint Central Administration. For more information about how to create a new web application, see the Microsoft SharePoint 2010 products online Help.
3. Install Enterprise Portal on the new web application by using Microsoft Dynamics AX Setup. By default, a second portal is created on the port that is specified in SharePoint Central Administration. For the purpose of this procedure, this portal is called Portal2. Copy the URL of Portal2. You will need the URL later in this procedure when you register the portal. Portal2 is currently connected to AOS1.
4. Specify the new Microsoft Dynamics AX client configuration file for Portal2 by editing the web.config file. By default the web.config file is located in the following directory:  
C:\inetpub\wwwroot\wss\VirtualDirectories\- 5. Add the following Microsoft.Dynamics element under </system.web>. Replace <server\_name>, <path>, and <configuration\_file>.axc with the information specific to your computing environment. For example:

```
<Session Configuration="C:\inetpub\wwwroot\dynamicsax.axc" />
<Microsoft.Dynamics>
<Session Configuration="\<server_name>\<path>\<configuration_file>.axc" />
</Microsoft.Dynamics>
```

6. Save your changes in the web.config file.
7. Verify that the Business Connector Proxy account for AOS2 is the same as AOS1. Click **System administration > Setup > System > System service accounts**.
8. Use the Microsoft Dynamics AX client to register Portal2 on AOS2. Click **System administration > Setup > Enterprise Portal > Web sites**. Enter the URL in the **Internal URL** and **External URL** fields.
9. In the **Type** field, click **Full (Web parts and site templates)**. Portal2 is now connected to AOS2.

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10. Delete Portal2 from the **Web sites** form on AOS1.
11. On the Enterprise Portal server, open a command prompt and run the following command. This command closes stale Business Connector connections: `iisreset /noforce`

### Next steps

After you create the portals you must configure security, user access, and portal-wide settings. For more information, see [Checklists for deploying Enterprise Portal sites](#).

### See Also

[Checklist: Configure Role Centers](http://technet.microsoft.com/library/17abe92f-40df-4d5f-9f8d-4842c0a1d001(AX.60).aspx) ([http://technet.microsoft.com/library/17abe92f-40df-4d5f-9f8d-4842c0a1d001\(AX.60\).aspx](http://technet.microsoft.com/library/17abe92f-40df-4d5f-9f8d-4842c0a1d001(AX.60).aspx))

## Set up Enterprise Portal and Role Centers

By default, only the administrator who installed Enterprise Portal for Microsoft Dynamics AX can access the site and view content. For more information about configuring Enterprise Portal for different kinds of sites, see [Checklists for deploying Enterprise Portal sites](#).

### See Also

[Enterprise Portal architecture](http://technet.microsoft.com/library/967d873d-5a15-4a6c-990c-2831938731fb(AX.60).aspx) (http://technet.microsoft.com/library/967d873d-5a15-4a6c-990c-2831938731fb(AX.60).aspx)

[Enterprise Portal and Role Centers security and protection](http://technet.microsoft.com/library/272f6b6b-d619-409c-8fdb-35d545676414(AX.60).aspx) (http://technet.microsoft.com/library/272f6b6b-d619-409c-8fdb-35d545676414(AX.60).aspx)

## Deploy Microsoft Dynamics AX Web parts to a SharePoint site

This topic describes how to deploy Web parts for Enterprise Portal for Microsoft Dynamics AX to sites for Microsoft SharePoint 2010 products. For example, if your organization uses a standard SharePoint team site, you can use the procedure in this topic to deploy an Enterprise Portal Web part to that team site.

### Before you begin

Install Enterprise Portal on the web application that hosts the site, such as SharePoint 80. In Microsoft Dynamics AX Setup, clear the **Create Web site** option. By clearing the **Create Web site** option, you install the required files on the web application, but you do not create a new website that uses the Enterprise Portal template. For more information about how to install Enterprise Portal, see [Install Enterprise Portal on a stand-alone server](#).

### Deploy a Microsoft Dynamics AX Web part to a SharePoint site

1. Click **System administration > Setup > Enterprise Portal > Web sites**.
2. Click **New** to add the SharePoint site to the list of sites. In the **Internal URL** field, enter the address of the SharePoint site.
3. In the **Type** list, click **Web parts only**.
4. Click the **General** tab.
5. If this site can be viewed only by users in a specific partition or company, configure the **Partition independent** and **Company independent** options.
6. Close the form to save your changes.
7. Open the SharePoint v4.master style sheet from the following location:  
C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\TEMPLATE\GLOBAL\v4.master

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8. Add the following element to the v4.master style sheet:

```
<SharePoint:CSSRegistration name= "/_LAYOUTS/1033/STYLES/Themable/AXEP.css" runat="server"/>
```

 **Important:**

To enable a Microsoft Dynamics AX unified work list Web part in a standard SharePoint site, you also must add the following Java script elements to the v4.master style sheet:

```
<script type="text/javascript" src="/_layouts/ep/scripts/jquery-min.js" > </script>
```

```
<script type="text/javascript" > var $jq = jQuery.noConflict();</script>
```

9. Save your changes, and close the file.
10. On the SharePoint site, create a new Web part page or edit an existing page, and then click **Add a Web part**.
11. Beneath the **Categories** list, click **Upload a Web part**.
12. Browse to the following location, and then click the Web part to add:  
C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\TEMPLATE\FEATURES\DynamicsAxWebParts\WebParts
13. Click **Upload**. The site automatically updates the list. Click **Add a Web part** again, and then locate the **Imported Web parts** folder in the **Categories** list.
14. In the **Web Parts** list, click the Web part to add, and then click **Add**.

### See Also

[Deploy Enterprise Portal and Role Centers](#)

[Create an Enterprise Portal site](#)

## Troubleshoot installation issues with Enterprise Portal and Role Centers

The following sections provide information to help you troubleshoot issues you may encounter when you install Enterprise Portal for Microsoft Dynamics AX and Role Centers.

### Permissions issues

Most installation issues for Enterprise Portal result from insufficient permissions by the person performing the installation. Verify that you have the appropriate permissions to perform the installation. If this list does not help you identify and resolve the problem, view the Windows Event Logs for more information about the error you are receiving.

- Membership in the **System administrator** role in Microsoft Dynamics AX
- Membership in the **Administrators** group in Windows on the Web server
- Membership in the **Farm Administrators** group in Microsoft SharePoint 2010 products
- Membership in the **dbcreator** role on the instance of SQL Server that is used for SharePoint 2010 products
- Membership in the **WSS\_Content\_Application\_Pools** database role in the SharePoint\_Config database

We also recommend that you follow these steps before you deploy Enterprise Portal to verify that you have the correct permissions for the installation.

1. Verify that you can open SharePoint 2010 Central Administration on the Enterprise Portal server.
2. Verify that you have the appropriate permissions to create sites by using SharePoint 2010 Central Administration to create a SharePoint team site.
3. Verify that you can browse the team site without prompts and resolve the URL without proxy errors or other problems.
4. If you intend to deploy or configure Enterprise Portal at a command prompt, verify that you can start the SharePoint 2010 Management Shell.



#### Tip:

By default, when you install SharePoint 2010 products, the system creates a Web application on port 80. Microsoft Dynamics AX Setup deploys an Enterprise Portal site on the port 80 Web application unless you specify a different Web application. If you do not intend to deploy Enterprise Portal on the default port-80 Web application, you must use SharePoint 2010 Central Administration to create a new Web application before you install Enterprise Portal by using Setup. Also note, if you create a new Web application, you must specify the Business Connector proxy account as the application pool account in the **Configurable** list. If necessary, register a new managed account with SharePoint.

### Error installing Enterprise Portal: Access denied

If Enterprise Portal could not be installed and the setup summary and the Microsoft Dynamics AX setup log displayed an access denied message, it might mean that you do not have permission to overwrite an existing site collection on the port 80 web application. If you are a member of the farm administrator group in SharePoint, you can use SharePoint Central administration to delete the existing site collection on the port 80 web application. After you delete the site collection, restart IIS (Start > Run, type iisreset, and press Enter). After IIS restarts, try installing Enterprise Portal again.

### Installing to a site that uses a host header fails

If you attempt to install Enterprise Portal on an existing IIS site that is already configured to use a host header, the installation fails, unless you create a BackConnectionHostNames registry entry.

### Setup fails and the IIS application pool crashes when you attempt to install Enterprise Portal

When installing Enterprise Portal and Role Centers, you may encounter the following error: "An error occurred when Setup was creating a new site. The underlying connection was closed: An unexpected error occurred on a receive. An existing connection was forcibly closed by the remote host." This error occurs if SQL Server Analysis Management Objects (AMO) has not been installed on the Enterprise Portal server. To download AMO, download the **Microsoft SQL Server 2008 R2 Analysis Management Objects** package, which is included in the [Microsoft SQL Server 2008 R2 Feature Pack – June 2010](http://www.microsoft.com/downloads/en/details.aspx) (<http://www.microsoft.com/downloads/en/details.aspx>). After you install AMO, restart IIS and attempt to install Enterprise Portal again.

### SharePoint Search stops working after you install Enterprise Portal

If you install Enterprise Portal on a server that hosts a SharePoint Team site, the default Search settings for the team site can change. SharePoint Search returns errors. To restore Search for the SharePoint team site, reset the SharePoint Search settings to their default values.

1. Open the **Search Settings** page. By default, the URL is: `http://<server_name>/_layouts/enhancedSearch.aspx`
2. Under **Site Collection Search Center**, click **Do not use custom scopes**.
3. Under **Site Collection Search Dropdown Mode**, click **Do not show scopes dropdown, and default to contextual scope**.
4. Under **Site Collection Search Results Page**, click `/_layouts/OSSSearchResults.aspx`, and then click **OK**.

### Multiple portals on a server

If you intend to deploy multiple Enterprise Portals on the same server and those portals will connect to different Application Object Servers, then you must update the web.config file. For more information, see [Install multiple Enterprise Portals on the same server](#).



## Install Search

This section contains information about installing Microsoft Dynamics AX 2012 Enterprise Search. Use the following topics to help you install Search.

- [Checklist: Deploy Microsoft Dynamics AX Enterprise Search](#)
- [Install and configure Search prerequisites](#)
- [Configure the Search Crawler account](#)
- [Configure SharePoint Services logging](#)
- [Install Microsoft Dynamics AX Enterprise Search](#)
- [Install Enterprise Search on FAST Search Server 2010 for SharePoint](#)
- [Configure Enterprise Search by using the Search Configuration wizard](#)
- [Troubleshoot installation issues with Enterprise Search](#)

### Checklist: Deploy Microsoft Dynamics AX Enterprise Search

The following checklist can help you deploy Enterprise Search.

Task	More information
Install and configure Search prerequisites.	<a href="#">Install and configure Search prerequisites</a>
Install the Microsoft Dynamics AX client, database, and Application Object Server (AOS) in the environment before you install Enterprise Search, and then complete the initialization checklist. If you attempt to install Enterprise Search before you complete these other tasks, the installation fails.	<a href="#">Install Microsoft Dynamics AX 2012</a> ( <a href="http://technet.microsoft.com/library/fbe52b68-1294-4398-b233-f8ec37c6d531(AX.60).aspx">http://technet.microsoft.com/library/fbe52b68-1294-4398-b233-f8ec37c6d531(AX.60).aspx</a> )
Configure the domain account that is used to crawl search data.	<a href="#">Configure the Search Crawler account</a>
Configure logging to conserve disk space.	<a href="#">Configure SharePoint Services logging</a>
Specify which queries (and the underlying database tables) are crawled and indexed for Search. Or, if Search is already configured on a different AOS, you can import Search configurations to a new AOS.	<a href="#">Add AOT queries to the Search configuration</a> ( <a href="http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx">http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx</a> ) or <a href="#">Import Search configurations to an AOS</a> ( <a href="http://technet.microsoft.com/library/e44a9235-9a03-446b-9bee-494abf6631ff(AX.60).aspx">http://technet.microsoft.com/library/e44a9235-9a03-446b-9bee-494abf6631ff(AX.60).aspx</a> )

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Task	More information
Deploy Search in the environment by using Setup. By default, Setup publishes queries that are configured for Search to the SharePoint Business Data Connectivity Service (BDS). The BDS then crawls and indexes Search data for Microsoft Dynamics AX.	<a href="#">Install Search</a> or <a href="#">Install Enterprise Search on FAST Search Server 2010 for SharePoint</a>
Publish searchable queries to the Business Data Connectivity Service, so that the queries can be crawled by Microsoft SharePoint Services. This option is necessary if you configured additional AOT queries for Search after you installed Search. If you did not configure additional AOT queries for Search after you installed Search, you can skip this step.	<a href="#">Configure Enterprise Search by using the Search Configuration wizard</a>
Verify that Search is installed and data is discoverable in Search results.	Open the Microsoft Dynamics AX client, enter a word such as a customer name in the <b>Search</b> box, and press Enter.

### See Also


[Enterprise Search architecture](http://technet.microsoft.com/library/1bc490b8-fa42-4910-b3b7-6728e05d1dc0(AX.60).aspx) (http://technet.microsoft.com/library/1bc490b8-fa42-4910-b3b7-6728e05d1dc0(AX.60).aspx)

## Install and configure Search prerequisites

This topic describes how to configure prerequisite software and services for Microsoft Dynamics AX Enterprise Search. If the Microsoft Dynamics AX Prerequisite Checker displayed an error when you tried to install Enterprise Search, then this topic might help you troubleshoot the error.

### Services required for Search

Microsoft Dynamics AX Enterprise Search uses the following services.

Service	Details
<p>Microsoft Search Server service</p>	<p>The Microsoft Search Server service crawls, indexes, and retrieves Microsoft Dynamics AX data and metadata for Enterprise Search. This service is available in the following products.</p> <ul style="list-style-type: none"> <li>• SharePoint Server 2010</li> <li>• Microsoft Search Server 2010</li> <li>• Microsoft Search Server Express 2010, which is a free <a href="http://go.microsoft.com/fwlink/?LinkID=180385">download</a> (<a href="http://go.microsoft.com/fwlink/?LinkID=180385">http://go.microsoft.com/fwlink/?LinkID=180385</a>)</li> <li>• Microsoft FAST Search Server 2010</li> </ul> <p>One of these products must be available in the computing environment before you can install Enterprise Search. We recommend that you use SharePoint Server 2010 if your business or organization intends to deploy Enterprise Portal. Of all the products that are listed here, SharePoint Server 2010 is the only product that hosts Enterprise Portal and Enterprise Search.</p> <p> <b>Warning:</b> If you intend to deploy Microsoft Dynamics AX Enterprise Search on Microsoft Fast Search Server 2010 know that FAST Search Server requires additional configurations beyond what is described in this topic. For more information, see <a href="#">Install Enterprise Search on FAST Search Server 2010 for SharePoint</a>.</p>
<p>SharePoint Server Search service</p>	<p>The SharePoint Server Search service crawls and indexes content for a SharePoint system. This service also provides a user interface for running queries against the catalog of crawled content. SharePoint Search is installed with Microsoft SharePoint Server and all Microsoft Search Server products.</p> <p>Verify that the SharePoint Server Search 14 service is available in the <b>Services</b> Control Panel. Click <b>Start &gt; Administrative Tools</b>, and then click <b>Services</b>. If the service is not listed, install a supported version of Microsoft SharePoint Server or Microsoft Search Server. If the service exists, but is disabled then you must setup and configured the Search service in SharePoint Central Administration. Verify that the BDC service application is deployed by using the <b>Manage Service Applications</b> page in SharePoint Central Administration. Click <b>Start &gt; All Programs &gt; Microsoft SharePoint Products</b>, and then click <b>SharePoint Central Administration</b>.</p>

Service	Details
Business Data Connectivity (BDC) service	SharePoint uses the BDC service to display business data from back-end server applications, web services, and databases. Verify that the BDC service application is deployed by using the <b>Manage Service Applications</b> page in SharePoint Central Administration. Click <b>Start &gt; All Programs &gt; Microsoft SharePoint Products</b> , and then click <b>SharePoint Central Administration</b> . For more information about the BDC service, see the SharePoint documentation.

### Verify SharePoint components before you install Enterprise Search

Use the following procedure to verify that SharePoint Search is configured correctly. We recommend that you perform these checks before you attempt to install Microsoft Dynamics AX Enterprise Search.

1. Click **Start > All Programs > Microsoft SharePoint Products**, and then click **SharePoint Central Administration**.
2. Click **System Settings**, and then click **Manage Services on Server**.
3. Verify that the **SharePoint Server Search** service is running. Also verify that the **SharePoint Foundation Search** service is stopped. SharePoint Foundation Search is not required for Enterprise Search.

 **Warning:**

If SharePoint Server Search does not appear in the list, you might be using SharePoint Foundation, which requires additional configuration. See the section titled "SharePoint Search or SharePoint Server Search 14 service does not pass the prerequisite check" in [Troubleshoot installation issues with Enterprise Search](#).

4. From SharePoint Central Administration, click **Manage Service Applications**.
5. Click the **Business Data Connectivity Service** link and verify that the page loads without errors.
6. On the **Manage Service Applications** page, click the **Search Service Application** link and verify that the page loads without errors.
7. On the **Search Administration** page, click the **Content Sources** link and verify that the page loads without errors.

If all pages loaded without errors, you can install Microsoft Dynamics AX Enterprise Search in the environment. For more information, see [Install Microsoft Dynamics AX Enterprise Search](#).

### Configure the Search Crawler account

This topic describes how to configure the Enterprise Search crawler account so that the Microsoft SharePoint indexing service can crawl Microsoft Dynamics AX data for Enterprise Search. Before you can configure the account, you must create a domain account for the search crawler. For more information, see [Create service accounts](#).

1. Add the domain account as a user in Microsoft Dynamics AX. For more information, see [Create new users](#) ([http://technet.microsoft.com/library/4b742341-9d6e-4629-bbe5-620086b7fee8\(AX.60\).aspx](http://technet.microsoft.com/library/4b742341-9d6e-4629-bbe5-620086b7fee8(AX.60).aspx)).

2. Assign the user to the Search crawler role in Microsoft Dynamics AX. For more information, see [Assign users to security roles](http://technet.microsoft.com/library/214ee45b-5b99-4ea8-9454-f4297f68e38c(AX.60).aspx) (http://technet.microsoft.com/library/214ee45b-5b99-4ea8-9454-f4297f68e38c(AX.60).aspx).
3. Repeat this procedure for each data partition. If you do not add the Search crawler account to a data partition, users will not see search results for that partition. For more information about data partitions, see [Data partitioning architecture](http://technet.microsoft.com/library/27ba6c51-7ea7-4403-867a-46ccc1ee053a(AX.60).aspx) (http://technet.microsoft.com/library/27ba6c51-7ea7-4403-867a-46ccc1ee053a(AX.60).aspx).

## Configure SharePoint Services logging

By default, there is no limit on the disk space that diagnostic logging for Microsoft SharePoint 2010 products can use. If you do not specify a limit, diagnostic logging can use all of the space on the hard disk of the Enterprise Search server.

### Configure logging

Use the following procedure to specify limits for diagnostic logging for SharePoint 2010 products.

1. In **SharePoint 2010 Central Administration**, click **Monitoring**.
2. Under **Reporting**, click **Configure diagnostic logging**.
3. In the **Number of days to store log files** section, enter a number.
4. Select the **Restrict Trace Log disk space usage** option.
5. In the **Maximum storage space for Trace Logs (GB)** field, enter a number.
6. Click **OK**.
7. Under **Reporting**, click **Configure usage and health data collection**.
8. In the **Maximum log file size** field, enter a number.
9. Click **OK**.

### See Also

[SharePoint documentation: Configure diagnostic logging](http://go.microsoft.com/fwlink/?LinkId=194152)  
(http://go.microsoft.com/fwlink/?LinkId=194152)

# Install Microsoft Dynamics AX Enterprise Search

This topic describes how to install Microsoft Dynamics AX Enterprise Search. You install and deploy the files that are required to run searches for Microsoft Dynamics AX clients and Enterprise Portal for Microsoft Dynamics AX. You must complete the installation procedure on each search server.

## Before you install Enterprise Search

- Read about Microsoft Dynamics AX Enterprise Search architecture and security before you deploy Search. For more information, see [Enterprise Search architecture](http://technet.microsoft.com/library/1bc490b8-fa42-4910-b3b7-6728e05d1dc0(AX.60).aspx) ([http://technet.microsoft.com/library/1bc490b8-fa42-4910-b3b7-6728e05d1dc0\(AX.60\).aspx](http://technet.microsoft.com/library/1bc490b8-fa42-4910-b3b7-6728e05d1dc0(AX.60).aspx)) and [Enterprise Search security and protection](http://technet.microsoft.com/library/53d56eec-e274-4ac1-b89f-35ef10326145(AX.60).aspx) ([http://technet.microsoft.com/library/53d56eec-e274-4ac1-b89f-35ef10326145\(AX.60\).aspx](http://technet.microsoft.com/library/53d56eec-e274-4ac1-b89f-35ef10326145(AX.60).aspx)).
- Install the Microsoft Dynamics AX client, database, and Application Object Server (AOS) in the environment before you install Enterprise Search, and then complete the initialization checklist. If you attempt to install Enterprise Search before you complete these other tasks, the installation fails. For more information, see [Install Microsoft Dynamics AX 2012](http://technet.microsoft.com/library/fbe52b68-1294-4398-b233-f8ec37c6d531(AX.60).aspx) ([http://technet.microsoft.com/library/fbe52b68-1294-4398-b233-f8ec37c6d531\(AX.60\).aspx](http://technet.microsoft.com/library/fbe52b68-1294-4398-b233-f8ec37c6d531(AX.60).aspx)).
- Create a domain account for Enterprise Search. This account must be configured as a Microsoft Dynamics AX user. The user account must be assigned to the Search crawler role before you install search. For more information, see [Configure the Search Crawler account](#).
- Verify that the SharePoint Web application used for Microsoft Dynamics AX Enterprise Search is configured for NTLM authentication. Also verify that the Web application is not configured for anonymous authentication.
- On the computer where you will install Enterprise Search, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

- If you are setting up Enterprise Search in a SharePoint server farm, verify that the Business Data Connectivity service (BDC) is only running on the Enterprise Search server. You must stop this service on all Web front-end servers in the farm. If you do not stop the service on all Web front-end servers, Enterprise Search fails to install.
- If you are installing Enterprise Search on Microsoft Search Server 2010 Express, you must install the SharePoint Server 2010 hotfix package dated August 31, 2010. If you do not install the hotfix, you receive the following error message when you install Enterprise Search: "The trial period for this product has expired." For more information and to download the hotfix package, see Microsoft Knowledge Base article number [2276336](http://support.microsoft.com/kb/2276336) (<http://support.microsoft.com/kb/2276336>).
- Search is not supported in an environment with multiple AOS servers on the same server, unless all AOS servers point to the same database. Limitations in the Search server configuration (`mssdmn.exe.config`) and the Microsoft Dynamics AX client configuration prevent support for a topology with multiple AOS servers on the same server.

## Install Enterprise Search

Use this procedure to install Enterprise Search. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary, based on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Enter a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Enterprise Search**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want Enterprise Search to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this screen is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by the .NET Business Connector. Click **Next**.
11. On the **Specify the search crawler account** page, enter the account information, and then click **Next**.
12. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is complete, click **Finish** to close the wizard.

## Post-installation configuration

If you installed Enterprise Search on a computer separate from the AOS, you must specify the **Search server url** in the **Enterprise Portal parameters** form. If you do not specify the URL, Search does not retrieve data.

1. Click **System administration > Setup > Enterprise Portal > Enterprise Portal parameters**.
2. Click **Search**.

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3. In the **Search server url** field, enter the URL to the SharePoint Search service where you just installed Search. Replace *server\_name* with the name of the server where you installed Search: `http://server_name/sites/DynamicsAXClientSearch/_vti_bin/search.aspx`
4. Click **Close** to save changes.

### Verify membership in the SQL db\_owner role

After you install Enterprise Search by using Setup, use SQL Server Management Studio to verify that the Business Connector proxy account and the search service application pool account (if different than the Business Connector proxy account) are members of the **db\_owner** role for the following databases: Search\_Service\_Application\_CrawlStoreDB\_<GUID>, Search\_Service\_Application\_DB\_<GUID>, Search\_Service\_Application\_PropertyStoreDB\_<GUID>.

#### **Important:**

If you installed FAST Search Server 2010 for SharePoint each role is prefaced with the word FAST. For example, FAST\_Search\_Service\_Application\_CrawlStoreDB\_<GUID>

### Post-installation validation

Data, metadata, and documents can only be crawled and indexed for search if the database table is included in a Microsoft Dynamics AX AOT query. After the table is specified in a query, the query must be configured for Search. You configure a query for Search by setting the **Searchable** property to **True** in the AOT. By default, only the following queries are configured for Search. These queries are automatically published and indexed after you install Enterprise Search:

- BdcDocuRef
- CustTableListPage
- EcoResProductPerCompanySearch
- HcmWorkerListPage
- SecurityRoleAllTasks
- smmBusinessRelations\_NoFilter
- VendorEnterpriseSearch

Use SharePoint Central Administration to verify that the crawl for these queries has finished running.

1. In SharePoint Central Administration, click **Manage service applications > Search Service Application**.
2. Under **Content Source**, verify that **Microsoft Dynamics AX** and **Microsoft Dynamics AX Metadata** show a crawl end time and no errors.
3. After the crawl complete, open an Microsoft Dynamics AX client and verify that the Search box appears in the upper-right corner. Also search on a term such as Sales and verify that the system returns results that are shown in both the middle pane (the data, metadata, and documents pane) and the **Help Topics** pane.

For information about how to make data, metadata, and documents available in Search, see [Add AOT queries to the Search configuration](http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx) ([http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9\(AX.60\).aspx](http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx)). After you have specified which queries should be available in Search, you



must publish the queries to SharePoint. For more information, see [Configure Enterprise Search by using the Search Configuration wizard](#).

### SharePoint Search stops working after you install Enterprise Portal

If you install Enterprise Portal on a server that hosts a SharePoint Team site, the default Search settings for the team site can change. SharePoint Search returns errors. To restore Search for the SharePoint team site, reset the SharePoint Search settings to their default values.

1. Open the **Search Settings** page. By default, the URL is: `http://<server_name>/_layouts/enhancedSearch.aspx`
2. Under **Site Collection Search Center**, click **Do not use custom scopes**.
3. Under **Site Collection Search Dropdown Mode**, click **Do not show scopes dropdown, and default to contextual scope**.
4. Under **Site Collection Search Results Page**, click `/_layouts/OSSSearchResults.aspx`, and then click **OK**.

# Install Enterprise Search on FAST Search Server 2010 for SharePoint

This topic describes how to deploy Microsoft Dynamics AX Enterprise Search on FAST Search Server 2010 for SharePoint.

## Prerequisites for Enterprise Search

The following list includes links to documents that describe how to configure the prerequisites for Microsoft Dynamics AX Enterprise Search. The list also includes links to documents that describe how to install and configure FAST Search Server 2010 for SharePoint. You must complete all of the tasks in order before you install Microsoft Dynamics AX Enterprise Search on FAST Search Server 2010. If you do not complete every task, Enterprise Search on FAST Search Server 2010 is not installed correctly.

1. [Configure the Search Crawler account](#)
2. [Add AOT queries to the Search configuration](#) ([http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9\(AX.60\).aspx](http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx))
3. [Install SharePoint 2012 Products and Technologies](#) (<http://go.microsoft.com/fwlink/?LinkId=241980>)
4. [Install FAST Search Server 2010 for SharePoint](#) (<http://go.microsoft.com/fwlink/?LinkId=241974>)
5. [Configure a stand-alone deployment or a multiple server deployment \(FAST Search Server 2010 for SharePoint\)](#) (<http://go.microsoft.com/fwlink/?LinkId=241975>)
6. [Create and set up the Content Search Service Application \(FAST Search Server 2010 for SharePoint\)](#) (<http://go.microsoft.com/fwlink/?LinkId=241976>)
7. [Create and set up the Query Search Service Application \(FAST Search Server 2010 for SharePoint\)](#) (<http://go.microsoft.com/fwlink/?LinkId=241977>)
8. [Enable queries from Microsoft SharePoint Server \(FAST Search Server 2010 for SharePoint\)](#) (<http://go.microsoft.com/fwlink/?LinkId=241978>)
9. [Install Hotfix 2276339 on the SharePoint server](#) (<http://go.microsoft.com/fwlink/?LinkId=241979>)

## Configure the Business Connector proxy account for membership in the db\_owner role

The Business Connector proxy account must be a member of the **db\_owner** role for each FAST Search database. Use Microsoft SQL Server Management Studio to verify that the Business Connector proxy account is listed as a user for each database, and that the user account is a member of the **db\_owner** role.

## Increase the time-out for Farm Search Administration

After you install Microsoft Dynamics AX Enterprise Search as described later in this topic, Setup starts a full crawl of the content sources for Microsoft Dynamics AX and Microsoft Dynamics AX metadata. The crawl must be completed without errors before you can configure managed properties as described later in this topic. By default, the time-out for the filter daemon in SharePoint is too short. Therefore, you receive the following error message when the content source for Microsoft Dynamics AX metadata is crawled: *The filter daemon did not respond within the time-out limit.* Use the following procedure to increase the Farm Search Administration timeout.

1. In SharePoint Central Administration, click **Manage Service Applications**.
2. Select the search service application for the FAST Search connector.
3. In the left navigation pane, click **Farm Search Administration**.
4. Under **Farm-Level Search Settings**, change the default value of **Time-out (seconds)**, 60,60, to larger numbers, such as 120,120.
5. Click **OK** to save your changes.

## Install Enterprise Search

If FAST Search is present on the server when you install Enterprise Search by using Microsoft Dynamics AX Setup, the system configures only the default FAST Search Server application, as specified in SharePoint. All other search service applications are ignored. After the installation is completed, the system performs a full crawl of the Microsoft Dynamics AX content sources. The full crawl of the content sources must be completed without errors before you can continue with the remaining procedures in this topic.

After the full crawl of the content sources is completed without errors, install Microsoft Dynamics AX Enterprise Search on the server. For more information, see [Install Microsoft Dynamics AX Enterprise Search](#).

## Create managed properties

FAST Search Server 2010 creates properties for crawled data. Microsoft Dynamics AX Enterprise Search enables a rich advanced search experience if these properties are mapped to Microsoft Dynamics AX managed properties. The following Windows PowerShell script creates managed properties for Microsoft Dynamics AX Enterprise Search and registers these properties so that they can be used by FAST Search Server 2010 at crawl time. The script also maps the crawled properties to managed properties to enable a rich advanced search experience.

1. On the FAST Search Server, create a new \*.ps1 file. Copy and paste the following code into the \*.ps1 file.

```
function MapManagedPropertyToCrawledProperty()
{
    Param
    (
        [string]$managedProperty = $null,
        [string]$crawledProperty = $null,
        [int32]$managedPropertyType = 1
    )

    $EntityManagedProperty = New-FASTSearchMetadataManagedProperty -Name $managedProperty -
Type $managedPropertyType
    $EntityCrawledProperty = Get-FASTSearchMetadataCrawledProperty -Name $crawledProperty
    $FullTextIndex = Get-FASTSearchMetadataFullTextIndex -Name Content
```

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```
$PropertyMapping = New-FASTSearchMetadataCrawledPropertyMapping -CrawledProperty
$EntityCrawledProperty -ManagedProperty $EntityManagedProperty

if ($managedPropertyType -eq 1)
{
    New-FASTSearchMetadataFullTextIndexMapping -ManagedProperty $EntityManagedProperty -
FullTextIndex $FullTextIndex -Level 1
}

Write-Host $managedProperty " mapped to " $crawledProperty
}

# Map predefined values
MapManagedPropertyToCrawledProperty -managedProperty Entity -crawledProperty EntityName -
managedPropertyType 1
MapManagedPropertyToCrawledProperty -managedProperty EntityPath -crawledProperty
EntityKey.Path -managedPropertyType 1
MapManagedPropertyToCrawledProperty -managedProperty EntityHelpText -crawledProperty
EntityKey.HelpText -managedPropertyType 1
MapManagedPropertyToCrawledProperty -managedProperty EntityType -crawledProperty
EntityKey.Type -managedPropertyType 2

# Create empty properties required by client search query
New-FASTSearchMetadataManagedProperty -Name Title1 -Type 1
New-FASTSearchMetadataManagedProperty -Name Title2 -Type 1
```

- Run the \*.ps1 file from the FAST Search Server 2010 PowerShell command window. Figure 1 shows the results of the command.

```

Administrator: Microsoft FAST Search Server 2010 for SharePoint
PS C:\FASTSearch> .\FASTMP.ps1

ImportanceLevel: : 1
ManagedProperty: : Entity
FullTextIndex: : content

Entity mapped to EntityName
ImportanceLevel: : 1
ManagedProperty: : EntityPath
FullTextIndex: : content

EntityPath mapped to EntityKey.Path
ImportanceLevel: : 1
ManagedProperty: : EntityHelpText
FullTextIndex: : content

EntityHelpText mapped to EntityKey.HelpText
EntityType mapped to EntityKey.Type

Name : Title1
Description :
Type : Text
Queryable : True
StemmingEnabled : False
RefinementEnabled : False
MergeCrawledProperties : False
SubstringEnabled : False
DeleteDisallowed : False
MappingDisallowed : False
MaxIndexSize : 1024
MaxResultSize : 64
DecimalPlaces : 3
SortableType : SortableDisabled
SummaryType : Static
IsMapped : False

Name : Title2
Description :
Type : Text
Queryable : True
StemmingEnabled : False
RefinementEnabled : False
MergeCrawledProperties : False
SubstringEnabled : False
DeleteDisallowed : False
MappingDisallowed : False
MaxIndexSize : 1024
MaxResultSize : 64
DecimalPlaces : 3
SortableType : SortableDisabled
SummaryType : Static
IsMapped : False

PS C:\FASTSearch> _
    
```

Figure 1: Output of the FAST Search Server 2010 PowerShell command for managed properties

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The following list describes the actions of the script and the corresponding results in the output:

- a. `MapManagedPropertyToCrawledProperty -managedProperty Entity -crawledProperty EntityName -managedPropertyType 1`  
The crawled property Entity was mapped to the managed property EntityName. The managed property is of type 1. Full-text index mapping was added to the property.
  - b. `MapManagedPropertyToCrawledProperty -managedProperty EntityPath -crawledProperty EntityKey.Path -managedPropertyType 1`  
The crawled property EntityPath was mapped to the managed property EntityKey.Path. The managed property is of type 1. Full-text index mapping was added to the property.
  - c. `MapManagedPropertyToCrawledProperty -managedProperty EntityHelpText -crawledProperty EntityKey.HelpText -managedPropertyType 1`  
The crawled property EntityHelpText was mapped to the managed property EntityKey.HelpText. The managed property is of type 1. Full-text index mapping was added to the property.
  - d. `MapManagedPropertyToCrawledProperty -managedProperty EntityType -crawledProperty EntityKey.Type -managedPropertyType 2`  
The crawled property EntityType was mapped to the managed property EntityKey.Type.
  - e. `New-FASTSearchMetadataManagedProperty -Name Title1 -Type 1`  
The managed property Title1 was registered.
  - f. `New-FASTSearchMetadataManagedProperty -Name Title2 -Type 1`  
The managed property Title2 was registered.
3. After the managed properties are created, use SharePoint Central Administration to start a full crawl of the Microsoft Dynamics AX and Microsoft Dynamics AX metadata content sources.

## Configure Enterprise Search by using the Search Configuration wizard

This topic describes how to configure Microsoft Dynamics AX Enterprise Search by using the Search Configuration Wizard.

### Before you configure Enterprise Search

You must complete the following tasks before you can configure Enterprise Search by using the Search Configuration Wizard:

1. Deploy Enterprise Search. For more information, see [Install Microsoft Dynamics AX Enterprise Search](#).
2. In the **Queries** node of the Application Object Tree (AOT), designate the queries that are available in search results by setting the **Searchable** property to True. For more information, see [Add AOT queries to the Search configuration](http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx) ([http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9\(AX.60\).aspx](http://technet.microsoft.com/library/1d4707eb-72d0-4d91-8432-eb5e5a4bbfb9(AX.60).aspx)).

### Configure Enterprise Search

The Search Configuration Wizard helps you publish Microsoft Dynamics AX queries to the Microsoft SharePoint Business Data Connectivity Service (BCS). The wizard lists the queries that passed all checks for best practices, and for which the **Searchable** property is set to True. You can select which queries and table fields you want to publish to the BCS. After you complete the wizard, the queries are published to the BCS, so that SharePoint can crawl the selected tables in the Microsoft Dynamics AX database. After the crawl is completed, users can view search results either in the Microsoft Dynamics AX 32-bit client or in Enterprise Portal.



#### Note:

You can run the Search Configuration Wizard on a server where Enterprise Search is installed from the Microsoft Dynamics AX client or by double-clicking AXSearchSetup.exe in the following directory: %systemdrive%\Program Files\Microsoft Dynamics AX\60\SetupSupport.

1. Click **System administration > Setup > Search > Search configuration**.
2. Complete the wizard. Microsoft Dynamics AX informs you that the queries were successfully published to the BCS.

If one or more queries were not published to the BCS, an error message is displayed. Review the log file at the following location: %systemdrive%\ProgramData\Microsoft\Dynamics AX\Dynamics AX Setup Logs\.

After the queries are published to the BCS, you can view the list of queries and the status of the database crawl in SharePoint Central Administration.

1. Click **Start**, and then click **SharePoint 2010 Central Administration**.
2. Under **Application Management**, click **Manage service applications**, and then click **Search Service Application**.
3. In the left pane, under **Crawling**, click **Content Sources**.

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4. To view the details, click either the content source for Microsoft Dynamics AX or the content source for Microsoft Dynamics AX metadata.



### **Important:**

By default, SharePoint schedules incremental crawls of the Microsoft Dynamics AX database. The incremental crawl only updates records if a parent table is modified. To ensure that the crawler updates records from joined tables, you should periodically perform a full crawl of the database.

## See Also

[Enterprise Search operations](http://technet.microsoft.com/library/98767015-42e2-4eb3-8f58-7d0e88ca559e(AX.60).aspx) (http://technet.microsoft.com/library/98767015-42e2-4eb3-8f58-7d0e88ca559e(AX.60).aspx)



## Troubleshoot installation issues with Enterprise Search

This topic includes information to help you troubleshoot issues you might encounter when you install Microsoft Dynamics AX Enterprise Search.

### Search prerequisite errors

This section includes error messages you might experience when you run the Microsoft Dynamics AX Prerequisite Validation utility from Setup. Each error includes recommended actions for resolving the problem. For more information about Search prerequisites, see [Install and configure Search prerequisites](#)

### Business Data connectivity (BDC) service application is not deployed

The Business Data Connectivity (BDC) service is installed with SharePoint Server 2010 and SharePoint Foundation. To pass the prerequisite check, you must configure the service application in SharePoint Central Administration. If you configure the service application by using the SharePoint configuration wizard you might create other issues because the wizard creates a SharePoint application that runs on Port 80. This port 80 application can conflict with other IIS Web applications and could cause them to stop working.

Use the following procedure to manually configure the BDC service.

#### **Note:**

Completing the steps in this procedure creates a BDC service database in SQL Server.

1. In **SharePoint Central Administration**, click **Application Management**, and then click **Manage Service Applications**.
2. Click **New > Business Data Connectivity** service.
3. Enter a name for the BDC service and the application pool, and then click **OK**. SharePoint displays a message that the Business Data Connectivity Service application was created.
4. Click **System Settings**, and then click **Manage Services on Server**. If the BDC service is in a status of **Stopped**, click the start link to start the service. Once the service is started, use Microsoft Dynamics AX Setup to run the Prerequisite validation utility.

### SharePoint Search or SharePoint Server Search 14 service does not pass the prerequisite check

By default, the SharePoint Search service is not installed on SharePoint Foundation. If you are running SharePoint Foundation you must install Microsoft Search Server Express 2010, which is a free [download](http://go.microsoft.com/fwlink/?LinkID=180385) (http://go.microsoft.com/fwlink/?LinkID=180385).

After you installed Search Server Express 2010, use the Services Control Panel to verify that the SharePoint Server Search 14 service is running. If the service is listed but **Disabled**, then you must configure it in SharePoint Central Administration.

#### **Note:**

Completing the steps in this procedure creates Search services databases in SQL server.

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1. In **SharePoint Central Administration**, click **Application Management**, and then click **Manage Service Applications**.
2. Click **New > Search Service Application**.
3. Enter a name for the service and the application pool, and then click **OK**. SharePoint displays a message that the Search Service application was created.
4. Click **System Settings**, and then click **Manage Services on Server**. If the Search service is in a status of **Stopped**, click the **Start** link to start the service. Once the service is started, use Microsoft Dynamics AX Setup to run the Prerequisite validation utility.

### The trial period for this product has expired

If you are using Microsoft Search Server 2010 Express, and you receive the error message "The trial period for this product has expired," you may have to install the SharePoint Server 2010 hotfix package dated August 31, 2010.

For more information and to download the hotfix package, see Microsoft Knowledge Base article number [2276336](http://support.microsoft.com/kb/2276336) (<http://support.microsoft.com/kb/2276336>).

### The Business Connector proxy account does not have permission to perform the operation

The Business Connector (BC) proxy account and the account that is used for the SharePoint Search service application pool must be a member of the db\_owner role for the following databases in SQL Server. If you receive this error, use SQL Server Management Studio to verify permissions for the following databases.

1. Search\_Service\_Application\_CrawlStoreDB\_<guid>
2. Search\_Service\_Application\_DB\_<guid>
3. Search\_Service\_Application\_PropertyStoreDB\_<guid>

## Install help server

The following topics explain how to install the Microsoft Dynamics AX Help server.

- [Before you install the help server](#)
- [Install the help server](#)
- [Install Help content at an alternative location](#)

### **Note:**

If you are upgrading the Help server between Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2, you should review [How to: Perform in-place upgrade to Microsoft Dynamics AX 2012 R2](#) ([http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f\(AX.60\).aspx](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx)).

## Before you install the help server

This topic describes the tasks that you must complete before you can install the Microsoft Dynamics AX Help server.

### Check for required permissions

Verify that you have the permissions that are required to install the Help server. For more information, see [Verify that you have the required permissions for installation](#).

### Install prerequisites

On the computer where you will install the Help server, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [Microsoft Dynamics AX 2012 System Requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>) guide.

### Select a web site for the Help server

The Help server must be installed on a web site in Internet Information Services (IIS). You can create a new web site for the Help server, or you can use an existing site. The following sections describe these options.

#### Create a new web site

If you want to create a new web site for the Help server, see the IIS documentation for information about how to create a web site.

#### Use an existing web site

You can install the Help server on an existing web site that is used by other applications. However, you must verify that neither Microsoft SharePoint Foundation 2010 nor Microsoft SharePoint Server 2010 is running on the same site.

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If you install the Help server on the default web site in IIS, and you later install Microsoft SharePoint Foundation or Microsoft SharePoint Server on the server, the SharePoint installation program stops the default web site and creates a new site for SharePoint. This new site runs on port 80. You must then open Internet Information Services (IIS) Manager and follow these steps:

1. Configure the default web site to run on a different port.
2. Restart the default web site.

## Install help content updates

If updates for the Microsoft Dynamics AX help content are available, you can incorporate the updates into the installation.

Use the following steps to include help updates in the installation:

1. Locate and download help content updates from the [CustomerSource](http://go.microsoft.com/fwlink/?LinkID=210925) (<http://go.microsoft.com/fwlink/?LinkID=210925>) web site (logon required).
2. Browse to the directory where the files from the Microsoft Dynamics AX DVD are shared. For more information, see [Create a shared directory for installation](#).
3. Navigate to the \Msi\HelpContent folder.
4. Copy the new or updated help .msi files to the appropriate language folder.
5. When you run Setup and select the Help Server component, the new content will be displayed as an option. Select the content sets that you want to install. Any content that was previously installed will be replaced. If you clear the check box for a content set that was previously installed, it will be removed.

## Install the help server

Use this procedure to install the Help server and Help files. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens vary based on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial wizard pages.
3. If the Setup Support files have not yet been installed on the computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Help Server**, and then click **Next**.

6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#).

 **Note:**

Validation errors can be resolved through the **Prerequisite validation results** page only if you are installing the Help server on a supported server operating system. If you are installing on an unsupported client operating system for demonstration or development purposes, you must supply missing prerequisites manually.

When no errors remain, click **Next**.

7. On the **Specify a location for configuration settings** page, specify whether you want the help server to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
8. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this screen is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

9. The Help Server must be installed on a 64-bit operating system. When you install Microsoft Dynamics AX components on a 64-bit system, the **Select a file location** page is displayed. Use this page to select the location where 32-bit versions of Microsoft Dynamics AX files should be installed, and then click **Next**.
10. On the **Select a display language** page, select a language and click **Next**.
11. On the **Specify a location for configuration settings** page, indicate whether client and server configuration settings should be stored locally or in a shared configuration file on the network. If you select the shared configuration, enter the network location of the file. Click **Next**.
12. On the **Connect to AOS instance** page, provide the name of the AOS server that the Help server will be using. You can optionally specify the AOS instance name, the AOS TCP/IP port number, and the services WSDL port. Click **Next**.
13. On the **Configure a Web site for Help Server** page, select the web site that you have chosen to host the Help server. Verify that the location of the physical directory for the web site is displayed. Click **Next**.
14. On the **Specify the Help Server account** page, enter a domain user account and password. This account must be the same as the .NET Business Connector proxy account for the AOS, and it must be a user in Microsoft Dynamics AX. This should be a service account that does not expire. Click **Next**.
15. On the **Language and content selection** page, select the Help languages and content types to install. EN-US must be installed, and is checked by default. Click **Next**.



**Tip:**

To add additional languages or content later, obtain the necessary MSI files and run Setup again.

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16. On the **Prerequisite Validation** page, resolve any errors. When no errors remain, click **Next**.
17. On the **Ready to install** page, click **Install**.
18. After the installation is complete, click **Finish** to close the wizard.

After the Microsoft Dynamics AX Help files are installed, they must be indexed by Windows Search Service before you can view them. Depending on system load and the number of files, it may take up to an hour for indexing to finish.

## Install Help content at an alternative location

The Help server folder on the file system contains both system files and content files. The location of this folder is a fixed parameter in Microsoft Dynamics AX. However, you can store the content at a different location by using the virtual directory feature in Internet Information Services (IIS).

The Microsoft Dynamics AX setup utility installs Help server files at C:\inetpub\wwwroot\DynamicsAX6HelpServer. Help content files are located in the Content folder under this directory. The following procedure shows how to move the Content folder to another location on the file system, so that Microsoft Dynamics AX can continue to access the folder.

1. On the Help server computer, create a content folder that is not located under the default directory for the Help server, C:\inetpub\wwwroot\DynamicsAX6HelpServer. In this example, the new folder is D:\content.
2. Move the Help files that are currently under C:\inetpub\wwwroot\DynamicsAX6HelpServer\Content so that they are under D:\content. Delete the original Content folder after it is empty.



### **Important:**

Do not put any configuration files in the new folder. This folder should contain only subfolders and content-related files, such as HTML, JavaScript, or image files.

3. Give the domain account for the Microsoft Dynamics AX administrative user **Read & execute, List folder contents, Read, and Write** permissions to the new folder. Additionally, give the local IIS user group, IIS\_IUSRS, **Read & execute, List folder contents, and Read** permissions to the folder.
4. Click **Start > Control Panel > Indexing Options > Modify**, and add the new folder as an indexed location.
5. Click **Start > Administrative Tools > Internet Information Services (IIS) Manager** to open IIS Manager.
6. In the navigation pane, expand the nodes to display C:\inetpub\wwwroot\DynamicsAX6HelpServer.
7. Right-click **DynamicsAX6HelpServer**, and then select **Add Virtual Directory**.
8. In the **Add Virtual Directory** window, in the **Alias** field, type **Content**. The directory tree that the Help server accesses when it retrieves content is restored, in virtual form.
9. In the **Physical path** field, type the path of the new folder, D:\content. Alternatively, you can navigate to the folder. Then click **OK**, and close IIS Manager.

10. Under C:\inetpub\wwwroot\DynamicsAX6HelpServer, locate the web.config file, and configure this file for the new content location. Open web.config in a text editor, and locate the **basePath** attribute. After the **basePath** attribute, add a new **contentPath** attribute that has the same format, and that contains the new content folder. In this example, the XML element begins as follows.

```
<dynamicsHelpConfig basePath="C:\inetpub\wwwroot\DynamicsAX6HelpServer"  
contentPath="D:\content"....
```

11. To trigger indexing of the new folder, click **Start > Administrative Tools > Services**, and then restart the Windows Search Service. The Help system should work correctly after indexing is completed.

## Install business intelligence components

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The business intelligence components for Microsoft Dynamics AX provide reporting and analytical functionality that enables you to view and interpret business data. You can use these components to create and use Microsoft SQL Server Reporting Services reports and Microsoft SQL Server Analysis Services cubes.

Use the following topics to install and configure the business intelligence components:

- [Install Reporting Services extensions for Microsoft Dynamics AX](#)
- [Configure Analysis Services](#)



## Install Reporting Services extensions for Microsoft Dynamics AX

Microsoft SQL Server Reporting Services is the primary reporting platform for Microsoft Dynamics AX. The reports that are included with Microsoft Dynamics AX run on the Reporting Services platform.

To integrate Microsoft Dynamics AX and Reporting Services, you must complete several procedures. You must first install the Reporting Services extensions by running the Microsoft Dynamics AX Setup Wizard and selecting the **Reporting Services extensions** option. This option installs the extensions and enables you to deploy the reports that are included with Microsoft Dynamics AX.

The following topics provide step-by-step instructions.


- [Checklist: Install the Reporting Services extensions and deploy reports](#)
- [Before you install the Reporting Services extensions](#)
- [Install the Reporting Services extensions](#)
- [Complete the Reporting Services integration](#)

### Checklist: Install the Reporting Services extensions and deploy reports

To install the Microsoft SQL Server Reporting Services extensions and deploy reports, complete the tasks in the following checklist.

Task	More information
Complete the pre-installation tasks: <ol style="list-style-type: none"> <li>1. Verify that you have the permissions that are required to install the Reporting Services extensions.</li> <li>2. Install prerequisites.</li> <li>3. Configure the Reporting Services instance.</li> </ol>	<a href="#">Before you install the Reporting Services extensions</a>
Install the Reporting Services extensions.	<a href="#">Install the Reporting Services extensions</a>

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Task	More information
<p>Complete the Reporting Services integration. The directions vary, depending on whether you are running Reporting Services in native mode or SharePoint integrated mode.</p> <p> <b>Note:</b> SharePoint integrated mode is supported if you are using Microsoft Dynamics AX 2012 R2.</p> <p>If you are running Reporting Services in native mode, complete the following procedures:</p> <ol style="list-style-type: none"><li>1. Deploy the default reports that are included with Microsoft Dynamics AX, if you did not already deploy the reports when you installed the Reporting Services extensions.</li><li>2. Assign users to the DynamicsAXBrower role on the Report Manager site.</li></ol> <p>If you are running Reporting Services in SharePoint integrated mode, complete the following procedures:</p> <ol style="list-style-type: none"><li>1. Create a document library to store reports.</li><li>2. Deploy the default reports that are included with Microsoft Dynamics AX.</li><li>3. Grant users permission to view reports in SharePoint.</li></ol>	<p><a href="#">Complete the Reporting Services integration</a></p>

### Before you install the Reporting Services extensions

Before you install the Microsoft SQL Server Reporting Services extensions, you must complete the following procedures.

### Verify that you have the required permissions to install the Reporting Services extensions

To install the Reporting Services extensions, you must have the required permissions. For more information, see [Verify that you have the required permissions for installation](#).

### Install prerequisites

On the computer where Reporting Services is installed, or where you plan to install Reporting Services, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

## Configure Reporting Services in native mode

If you installed Reporting Services in native mode, you must complete the following procedures to configure the Reporting Services instance.


### Configure the Reporting Services instance by using the Reporting Services Configuration Manager tool


Use the following procedure to configure the Reporting Services instance.

 **Note:**

If you installed the Reporting Services instance in its default configuration, Reporting Services is already configured for you. However, we recommend that you complete this procedure to verify that the options are configured correctly.

1. Click **Start > All Programs > Microsoft SQL Server > Configuration Tools > Reporting Services Configuration Manager** to open Reporting Services Configuration Manager.
2. Connect to your Reporting Services instance.
3. Configure the options that are described in the following table. For detailed information about each option, see the SQL Server documentation.

Click this option...	To do this...
[ServerName]\[InstanceName]	Verify that the Reporting Services instance is running. If it is not running, click <b>Start</b> .
Service Account	<p>The action that you should take depends on the configuration mode that you selected when you installed the Reporting Services instance.</p> <ul style="list-style-type: none"> <li>• If you installed the default configuration for native mode, no action is required. The service account is set to the account that you specified when you installed the Reporting Services instance.</li> <li>• If you installed but did not configure the report server, select the Network Service built-in account.</li> </ul> <p> <b>Note:</b> When you install the Reporting Services extensions, the Business Connector proxy account is automatically assigned as the service account for the Reporting Services instance.</p>
Web Service URL	Create a virtual directory for the Reporting Services web service. By default, the virtual directory is named <b>ReportServer</b> , and the URL is <code>http://[SSRSServerName]:80/ReportServer</code> .
Database	Create a database for the Reporting Services instance. By default, the database is named <b>ReportServer</b> .
Report Manager URL	Create a virtual directory for Report Manager. Report Manager is the website that reports are published to. By default, the virtual directory is named <b>Reports</b> , and the URL is <code>http://[SSRSServerName]:80/Reports</code> .

Click this option...	To do this...
E-mail Settings	This option is not required. For more information, see the SQL Server documentation.
Execution Account	Take no action.   <b>Note:</b> When you install the Reporting Services extensions, the Business Connector proxy account is automatically assigned as the execution account for the Reporting Services instance.
Encryption Keys	This option is not required. For more information, see the SQL Server documentation.
Scale-out Deployment	This option is not required. For more information, see the SQL Server documentation.

- Click **Exit** to close Reporting Services Configuration Manager.

#### Configure the Reporting Services instance for local administration

To administer an instance of the report server locally, you must complete additional configuration steps when you deploy Reporting Services on Windows Server 2008. Windows Server 2008 limits the overuse of elevated permissions by removing administrator permissions when you access applications. If you are a member of the local Administrators group, you run most applications as if you are using the Standard User account because the operating system removes permissions.

Although this practice improves the overall security of your system, it prevents you from using the predefined, built-in role assignments that Reporting Services creates for local administrators. However, by completing additional configuration steps, you can manage the report server's content and operations by using standard user permissions. For instructions, see [How to: Configure a Report Server for Local Administration on Windows Vista and Windows Server 2008](http://technet.microsoft.com/en-us/library/bb630430.aspx) (<http://technet.microsoft.com/en-us/library/bb630430.aspx>) on TechNet.

After you have configured the Reporting Services instance for local administration, verify that you can access the websites that are listed in the following table.

Website	Default URL
Reporting Services web service	http://[SSRSServerName]:80/ReportServer
Report Manager	http://[SSRSServerName]:80/Reports

## Configure Reporting Services in SharePoint integrated mode

If you installed Reporting Services in SharePoint integrated mode, use one of the following procedures to configure the Reporting Services instance. The procedure that you should use depends on the version of SQL Server that you are using.

### Note:

SharePoint integrated mode is supported if you are using Microsoft Dynamics AX 2012 R2.

## Configure Reporting Services 2008 in SharePoint integrated mode

If you are using Reporting Services 2008, follow these steps to configure Reporting Services in SharePoint integrated mode.

1. Configure Reporting Services by using the following topics in the SQL Server documentation:

- [How to: Install and Configure SharePoint Integration on a Stand-alone Server](http://technet.microsoft.com/en-us/library/bb677368(SQL.105).aspx)  
(http://technet.microsoft.com/en-us/library/bb677368(SQL.105).aspx)
- [How to: Install and Configure SharePoint Integration on Multiple Servers](http://technet.microsoft.com/en-us/library/bb677365(SQL.105).aspx)  
(http://technet.microsoft.com/en-us/library/bb677365(SQL.105).aspx)

### Note:

When you configure Reporting Services, set the Reporting Services service account and execution account to the Business Connector proxy account.

2. Configure the Reporting Services integration in SharePoint Central Administration. For more information, see [How to: Configure Report Server Integration in SharePoint Central Administration](http://technet.microsoft.com/en-us/library/bb326213(SQL.105).aspx) (http://technet.microsoft.com/en-us/library/bb326213(SQL.105).aspx) in the SQL Server documentation.
3. Verify that you can access the websites that are listed in the following table.

Website	Default URL
Reporting Services web service	http://[SSRSServerName]:80/ReportServer
SharePoint site	http://[SharePointServerName]/sites/[SiteName]

## Configure Reporting Services 2012 in SharePoint integrated mode

If you are using Reporting Services 2012, follow these steps to configure Reporting Services in SharePoint integrated mode.

1. Configure Reporting Services by using the following topics in the SQL Server documentation:

- [Install Reporting Services SharePoint Mode as a Single Server Farm](http://technet.microsoft.com/en-us/library/gg492276.aspx)  
(http://technet.microsoft.com/en-us/library/gg492276.aspx)

### Important:

When installing Reporting Services 2012 in SharePoint integrated mode, be sure that you **do not** mark the **Reporting Services – Native** option on the **Feature Selection** page of the SQL Server Setup Wizard.

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- [Add an Additional Report Server to a Farm \(SSRS Scale-out\)](http://technet.microsoft.com/en-us/library/hh479774.aspx) (http://technet.microsoft.com/en-us/library/hh479774.aspx)
  - [Add an Additional Reporting Services Web Front-end to a Farm](http://technet.microsoft.com/en-us/library/hh479775.aspx) (http://technet.microsoft.com/en-us/library/hh479775.aspx)
2. Verify that you can access the websites that are listed in the following table.

Website	Default URL
Reporting Services web service	http://[SharePointServerName]/_vti_bin/ReportServer -or- http:[SharePointServerName]/sites/[SiteName]/_vti_bin/ReportServer
SharePoint site	http://[SharePointServerName]/sites/[SiteName]

For more information about how to verify that the integration is configured correctly, see [Verify a Reporting Services Installation](http://technet.microsoft.com/en-us/library/ms143773.aspx) (http://technet.microsoft.com/en-us/library/ms143773.aspx) in the SQL Server documentation.

## Install the Reporting Services extensions

Use this procedure to install the Microsoft SQL Server Reporting Services extensions. You must complete this procedure on the computer that is running Reporting Services.

This procedure assumes that you are installing the Reporting Services extensions on a dedicated server where no other Microsoft Dynamics AX components are installed. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, select **Custom installation**. Click **Next**.
5. On the **Select components** page, follow these steps:
  - a. Select the **Reporting Services extensions** check box.  
When you select the option to install the Reporting Services extensions, the management utilities are automatically selected for installation, also.
  - b. A message is displayed that states that you must complete the code upgrade checklist if you are upgrading. Click **OK**.
  - c. Click **Next**.
6. On the **Prerequisite Validation** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location in which to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.

8. On the **Specify a location for configuration settings** page, specify whether you want the Reporting Services extensions to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

You can connect to an AOS instance that is part of an AOS cluster. However, do not connect to an AOS instance that serves as the dedicated load balancer for a cluster. For more information about how to integrate Reporting Services with an AOS scale-out deployment, see [Planning considerations for reporting](http://technet.microsoft.com/library/05dd329c-ba8a-41e6-a2d5-1d534c34b10a(AX.60).aspx) (http://technet.microsoft.com/library/05dd329c-ba8a-41e6-a2d5-1d534c34b10a(AX.60).aspx).

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by Business Connector. Click **Next**.
11. On the **Specify a Reporting Services instance** page, complete the action listed in the following table.

Field	Action you should take	Notes
<b>Instance name</b>	Select the name of the Reporting Services instance.  If you are using Reporting Services 2012 in SharePoint integrated mode, select <b>@Sharepoint</b> .	SharePoint integrated mode is supported only if you are using Microsoft Dynamics AX 2012 R2.
<b>Site URL</b>	Select the URL of the SharePoint site that has been integrated with Reporting Services.	This field is displayed only when Reporting Services 2012 is running in SharePoint integrated mode.
<b>Deploy reports</b>	Select the check box to deploy the default reports that are included with Microsoft Dynamics AX.  If you do not deploy the reports now, you can deploy them later by using Windows PowerShell commands. For more information, see <a href="#">Deploy the default reports</a> .	This check box is displayed only when Reporting Services is running in native mode. If Reporting Services is running in SharePoint integrated mode, you must deploy the reports after you complete this wizard. Deploy the reports by using Windows PowerShell commands. For more information, see <a href="#">Deploy the default reports</a> .

Click **Next**.

12. On the **Prerequisite Validation** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.

If you selected to deploy the reports in step 11, a Windows PowerShell window is displayed. This window shows the progress of the deployment, which may take several minutes. Do not close this window. When the reports are deployed, the window closes automatically.

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14. Click **Finish** to close the Setup wizard.

If you selected to deploy the reports in step 11, you can close the Setup wizard before the reports have finished being deployed. The deployment of the reports is not affected.

15. The **Microsoft Dynamics AX 2012 Setup Summary Report** is displayed. This report lists additional procedures that you must complete to integrate Microsoft Dynamics AX and Reporting Services. For more information about the procedures, see [Complete the Reporting Services integration](#).

## Complete the Reporting Services integration

To fully integrate Microsoft Dynamics AX and Microsoft SQL Server Reporting Services, you must complete additional configuration procedures. The procedures vary, depending on whether you are running Reporting Services in native mode or SharePoint integrated mode.

### **Note:**

SharePoint integrated mode is supported if you are using Microsoft Dynamics AX 2012 R2.

If you are running Reporting Services in native mode, complete the following procedures:

1. [Deploy the default reports](#)
2. [Grant users access to reports](#)

If you are running Reporting Services in SharePoint integrated mode, complete the following procedures:

1. [Create a document library to store reports](#)
2. [Deploy the default reports](#)
3. [Grant users access to reports](#)

## Create a document library to store reports

If you are using Microsoft Dynamics AX 2012 R2, and if Microsoft SQL Server Reporting Services is running in SharePoint integrated mode, create a document library in SharePoint to store your reports. Complete this procedure before you deploy the default reports that are included with Microsoft Dynamics AX.

### **Note:**

This procedure does not apply to you if you are running Reporting Services in native mode.

### **Create a document library**

Create a document library on your SharePoint site to store reports. For information about how to create a document library, see the SharePoint documentation.

After you create the document library, add Reporting Services content types to the library. For more information, see [Add Report Server Content Types to a Library \(Reporting Services in SharePoint Integrated Mode\)](#) ([http://technet.microsoft.com/en-us/library/bb326289\(v=sql.110\).aspx](http://technet.microsoft.com/en-us/library/bb326289(v=sql.110).aspx)) in the SQL Server documentation.



### Specify the URL of the document library

After you have created the document library, complete the following procedure to specify the URL of the document library in the **Report servers** form in Microsoft Dynamics AX.

1. Open Microsoft Dynamics AX.
2. Click **System administration > Setup > Business intelligence > Reporting Services > Report servers**.
3. In the **Configuration ID** field, enter a name that identifies the Reporting Services instance and the Application Object Server (AOS) instance that you are connecting.
4. In the **Description** field, enter a brief description to help you identify the Reporting Services instance and the AOS instance that you are connecting.
5. Select the **Default configuration** check box to make the Reporting Services and AOS instances that are specified in this record the active connection.
6. On the **Reporting Server information** tab, enter the following information:
  - a. In the **Server name** field, enter the name of the server that is running Reporting Services.
  - b. In the **Server instance name** field, enter the name of the Reporting Services instance.

 **Note:**

If you are using Reporting Services 2012, enter **@Sharepoint**.

- c. Leave the **Report Manager URL** field blank. This field becomes unavailable when you select the **SharePoint integrated mode** check box in a later step.
- d. In the **Web service URL** field, enter the URL of the Reporting Services web service.
  - If you are using Reporting Services 2008, the URL is typically `http://[SSRSServerName]/ReportServer`.
  - If you are using Reporting Services 2012, the URL is typically `http://[SharePointServerName]/_vti_bin/ReportServer` or `http://[SharePointServerName]/sites/[SiteName]/_vti_bin/ReportServer`.
- e. Select the **SharePoint integrated mode** check box.
- f. In the **Microsoft Dynamics AX report folder** field, enter the URL of the document library that you created to store reports.  
 For example, suppose that you have created a document library that is named *Reports* on a SharePoint site that is named *Contoso*. In this example, the URL is as follows:  
`http://[SharePointServerName]/sites/Contoso/Reports`
7. On the **Application Object Server information** tab, select the name of the AOS instance.

### Deploy the default reports

Microsoft Dynamics AX includes many default reports that you must deploy. If you did not deploy the reports when you installed the Microsoft SQL Server Reporting Services extensions, you can deploy them by using Windows PowerShell. The following procedures can help you deploy the reports.

#### Before you begin

Before you can deploy the reports by using Windows PowerShell, you must complete the following tasks:

- Verify that Windows PowerShell 2.0 is installed on the computer that you are using.
- Verify that your Windows domain account is a member of the Administrators group on the server that is running Reporting Services.

 **Note:**

If your Windows domain account is assigned to a group that is a member of the Administrators group, it may take some time to validate that you are a member of the Administrators group. If you experience a delay when you deploy reports, consider adding your Windows domain account directly to the Administrators group.

- If Reporting Services is running in native mode, verify that you are assigned to the System Administrator role on the Report Manager website.
- If Reporting Services is running in SharePoint integrated mode, verify that you have been granted **Contribute** permission to the document library where you plan to deploy the reports.

 **Note:**

SharePoint integrated mode is supported if you are using Microsoft Dynamics AX 2012 R2.

#### Open Windows PowerShell and view a list of reports

Complete the following procedure to open Windows PowerShell and view a list of the reports that are included with Microsoft Dynamics AX.

1. Open Windows PowerShell as an administrator by following these steps:
  - a. Click **Start > Administrative Tools**.
  - b. Right-click the **Microsoft Dynamics AX 2012 Management Shell** option.
  - c. Click **Run as administrator**.
2. Retrieve a list of the reports that are included with Microsoft Dynamics AX, and store the list in a local variable by entering the following command:

```
$reports = Get-AXReport -ReportName *
```

For more information about the Get-AXReport command, see [Get-AXReport](http://go.microsoft.com/fwlink/?LinkID=217546) (<http://go.microsoft.com/fwlink/?LinkID=217546>).

3. View the list of reports by entering the following command:

```
$reports
```

### Filter the list of reports

In the previous procedure, you displayed a list of all the reports that are included with Microsoft Dynamics AX. To modify and filter the list, you can use the following commands:

- To modify the list so that only the **Name** and **ChangedDate** fields are displayed, enter the following command:

```
$reports | Select-Object Name,ChangedDate
```

- To filter the list so that only specific reports are listed, enter keywords or report names. For example, to filter the list so that only reports that contain the word *CustTrans* are listed, enter the following command:

```
$reports | Select-Object Name,ChangedDate | Where { $_.Name -like "CustTrans*" }
```

### Deploy the reports

After you have retrieved a list of reports, you can deploy the reports. The `Publish-AXReport` command is used to deploy the reports. The following examples show how to use this command. For more information, see [Publish-AXReport](http://go.microsoft.com/fwlink/?LinkID=217550) (<http://go.microsoft.com/fwlink/?LinkID=217550>).

- To deploy a specific report, enter the name of the report. For example, to deploy the `CustTransList` report, enter the following command:

```
Publish-AXReport -ReportName CustTransList
```

- To deploy two or more specific reports, enter the names of the reports. For example, to deploy the `CustTransList` and `CustTransOpenPerDate` reports, enter the following command:

```
Publish-AXReport -ReportName CustTransList, CustTransOpenPerDate
```

- To deploy all reports, enter the following command:

```
Publish-AXReport -ReportName *
```

### See Also

[Administering Microsoft Dynamics AX by using Windows PowerShell](http://technet.microsoft.com/library/96e9ae2f-447a-426e-b77f-95636ddb9f15(AX.60).aspx)

([http://technet.microsoft.com/library/96e9ae2f-447a-426e-b77f-95636ddb9f15\(AX.60\).aspx](http://technet.microsoft.com/library/96e9ae2f-447a-426e-b77f-95636ddb9f15(AX.60).aspx))

[Windows PowerShell for Microsoft Dynamics AX](http://technet.microsoft.com/library/c9852f5b-0fee-4b80-8317-62f014187549(AX.60).aspx) ([http://technet.microsoft.com/library/c9852f5b-0fee-4b80-8317-62f014187549\(AX.60\).aspx](http://technet.microsoft.com/library/c9852f5b-0fee-4b80-8317-62f014187549(AX.60).aspx))

[Piping and the Pipeline in Windows PowerShell](http://go.microsoft.com/fwlink/?LinkID=187808) (<http://go.microsoft.com/fwlink/?LinkID=187808>)

### Grant users access to reports

This topic explains how to give users access to reports. Two procedures are described in this topic. The procedure that you should use depends on whether you are running Microsoft SQL Server Reporting Services in native mode or SharePoint integrated mode.

 **Note:**

SharePoint integrated mode is supported if you are using Microsoft Dynamics AX 2012 R2.

### Assign users to the DynamicsAXBrowser role on the Report Manager site

If you are running Reporting Services in native mode, you must assign users or groups to the DynamicsAXBrowser role on the Report Manager site. The following procedure explains how to complete this task.

1. Open the Report Manager website for the Reporting Services instance. By default, the URL is `http://[SSRSServerName]:80/Reports`.
2. Click the **DynamicsAX** folder.
3. Click **Folder Settings**.
4. Click **Security**.
5. Click **New Role Assignment**.
6. Enter the Active Directory user name or group to assign to the DynamicsAXBrowser role.
7. Select the **DynamicsAXBrowser** role.
8. Click **OK**.

### Grant users permission to view reports in SharePoint

If you are running Reporting Services in SharePoint integrated mode, you must grant users permission to view reports in SharePoint. To grant this permission, grant users **Read** permission to the document library that stores the reports. Alternatively, if the document library inherits permissions from the site, you can grant users **Read** permission to the site. The following procedure describes how to grant users **Read** permission to the site.

 **Important:**

If the SharePoint site is configured for claims-based authentication, you must also grant the following accounts **Read** permission to the document library or site:

- The account that is used as the Business Connector proxy
  - The account that is used to run the Microsoft Dynamics AX Application Object Server (AOS) service.
1. Open your browser, and navigate to the SharePoint site that contains the document library that stores the reports.
  2. Click **Site Actions > Site Permissions**.
  3. Click **Grant Permissions**. The **Grant Permissions** window is displayed.
  4. In the **Users/Groups** field, enter the Active Directory names of the users or groups that you want to view reports.
  5. In the **Grant Permissions** area, select the **Grant users permission directly** option.

6. Select the **Read** check box.

 **Note:**

If you want users of Enterprise Portal for Microsoft Dynamics AX to be able to filter reports by using a custom parameter value, select the **Design** check box. For more information about the permissions that are required to use Enterprise Portal, see [Enable users to access Enterprise Portal](http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx) ([http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897\(AX.60\).aspx](http://technet.microsoft.com/library/2adbf75e-a599-45ca-a849-765185bf7897(AX.60).aspx)).

7. Click **OK**.

**See Also**

[Security settings for reports](http://technet.microsoft.com/library/fd45fcf5-f9c7-4f28-98c9-be021a6cbfe2(AX.60).aspx) ([http://technet.microsoft.com/library/fd45fcf5-f9c7-4f28-98c9-be021a6cbfe2\(AX.60\).aspx](http://technet.microsoft.com/library/fd45fcf5-f9c7-4f28-98c9-be021a6cbfe2(AX.60).aspx))

## Configure Analysis Services

Microsoft SQL Server Analysis Services is a server-based solution that provides online analytical processing (OLAP) functionality. Analytical reports help users examine business data and identify trends that they might not otherwise discover when viewing data on traditional reports.


To integrate Microsoft Dynamics AX and Analysis Services, you must complete several procedures. You must first run the Microsoft Dynamics AX Setup wizard and select the **Analysis Services configuration** option. This option configures Analysis Services so that it can be used with Microsoft Dynamics AX. The topics in this section provide step-by-step instructions.

- [Checklist: Configure Analysis Services and deploy cubes](#)
- [Before you configure Analysis Services](#)
- [Configure Analysis Services by running Setup](#)
- [Complete the Analysis Services integration process](#)

### Checklist: Configure Analysis Services and deploy cubes

To configure Microsoft SQL Server Analysis Services for use with Microsoft Dynamics AX and to deploy the cubes that are included with Microsoft Dynamics AX, complete the tasks in the following checklist.

Task	More information
Complete the prerequisite tasks: <ol style="list-style-type: none"> <li>1. Verify that you have the permissions that are required to configure Analysis Services.</li> <li>2. Create a domain account to run the Analysis Services service.</li> <li>3. Assign the .NET Business Connector proxy account to the server administrator role in Analysis Services.</li> <li>4. Install prerequisites.</li> </ol>	<a href="#">Before you configure Analysis Services</a>
Configure Analysis Services by running the Microsoft Dynamics AX Setup Wizard.	<a href="#">Configure Analysis Services by running Setup</a>

Task	More information
<p>Complete the Analysis Services integration:</p> <ol style="list-style-type: none"> <li>1. Install SQL Server Shared Management Objects on Microsoft Dynamics AX client computers.</li> <li>2. Verify that information about exchange rates has been entered.</li> <li>3. Deploy the default cubes that are included with Microsoft Dynamics AX.</li> <li>4. Update the data source for online analytical processing (OLAP) if your Analysis Services database is not named <i>Dynamics AX</i>.</li> </ol> <p> <b>Note:</b> If you are using Microsoft Dynamics AX 2012 R2, this step does not apply to you.</p> <ol style="list-style-type: none"> <li>5. Configure the cubes, based on the changes that you have made to the Microsoft Dynamics AX configuration or license keys.</li> <li>6. Grant users access to the cubes.</li> <li>7. Automate the processing of cubes.</li> <li>8. Create new date dimensions for the cubes.</li> <li>9. Add financial dimensions to the cubes.</li> </ol>	<p><a href="http://technet.microsoft.com/library/7da728c6-9079-48fd-8dcb-1ce64759a412(AX.60).aspx">Install SQL Server Shared Management Objects</a> (http://technet.microsoft.com/library/7da728c6-9079-48fd-8dcb-1ce64759a412(AX.60).aspx)</p> <p><a href="http://technet.microsoft.com/library/0dc6d13d-abc7-411c-9d00-162767163465(AX.60).aspx">Verify that exchange rate information has been entered</a> (http://technet.microsoft.com/library/0dc6d13d-abc7-411c-9d00-162767163465(AX.60).aspx)</p> <p><a href="#">Deploy the default cubes</a></p> <p><a href="http://technet.microsoft.com/library/d19dbb45-bf32-4f36-b7d2-722c149df5ae(AX.60).aspx">Update the OLAP data source</a> (http://technet.microsoft.com/library/d19dbb45-bf32-4f36-b7d2-722c149df5ae(AX.60).aspx)</p> <p><a href="http://technet.microsoft.com/library/ee0aa94f-28f9-4427-82c6-51a18e0939be(AX.60).aspx">How to: Configure an Existing SQL Server Analysis Services Project</a> (http://technet.microsoft.com/library/ee0aa94f-28f9-4427-82c6-51a18e0939be(AX.60).aspx)</p> <p><a href="#">Grant users access to cubes</a></p> <p><a href="#">Automate the processing of cubes</a></p> <p><a href="http://technet.microsoft.com/library/81508890-2f55-40d4-9894-53118a598f1d(AX.60).aspx">How to: Create a Date Dimension for a Cube</a> (http://technet.microsoft.com/library/81508890-2f55-40d4-9894-53118a598f1d(AX.60).aspx)</p> <p><a href="http://technet.microsoft.com/library/507d6dab-53bb-4116-971b-f834bb3192c8(AX.60).aspx">How to: Add a Financial Dimension to a Cube</a> (http://technet.microsoft.com/library/507d6dab-53bb-4116-971b-f834bb3192c8(AX.60).aspx)</p>

## Before you configure Analysis Services

Before you configure Microsoft SQL Server Analysis Services for use with Microsoft Dynamics AX, you must complete the following procedures.

### Verify that you have the required permissions to configure Analysis Services

To configure Analysis Services, you must have the required permissions. For more information, see [Verify that you have the required permissions for installation](#).

### Create a domain account to run the Analysis Services service

Create a domain account that can run the Analysis Services service. For more information, see [Create service accounts](#).

### Assign the Business Connector proxy account to the Analysis Services server administrator role

The proxy account for Business Connector must be assigned to the server administrator role in Analysis Services. To complete that task, follow these steps.

## Microsoft Dynamics AX

1. Open Microsoft SQL Server Management Studio and connect to your Analysis Services instance.
2. In the tree view, right-click the Analysis Services instance, and then click **Properties**. The **Analysis Services Properties** window is displayed.
3. In the **Select a page** area, click **Security**.
4. Click **Add**. The **Select Users or Groups** form is displayed.
5. Enter the Business Connector proxy account in the following format: [DomainName]\[UserName]. Click **OK**.

## Install prerequisites

On the computer where Analysis Services is installed, or where you plan to install Analysis Services, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

## Configure Analysis Services by running Setup

Use this procedure to configure Microsoft SQL Server Analysis Services for use with Microsoft Dynamics AX. You must complete this procedure on the computer that is running Analysis Services.

This procedure assumes that you are configuring Analysis Services on a dedicated server where no Microsoft Dynamics AX components are installed. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, select **Custom installation**. Click **Next**.
5. On the **Select components** page, follow these steps:
  - a. Select the **Analysis Services configuration** check box.
  - b. A message is displayed that states that you must complete the code upgrade checklist if you are upgrading. Click **OK**.
  - c. We recommend that you select the **Management utilities** check box so that you can deploy cubes by using Windows PowerShell commands.
  - d. Click **Next**.
6. On the **Prerequisite Validation** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Select a file location** page, select the location in which to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.



8. On the **Specify a location for configuration settings** page, specify whether you want the cubes to access configuration information from the registry on the local computer or from a shared configuration file. If you select to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that is running the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

**Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by Business Connector. Click **Next**.
11. On the **Specify an Analysis Services instance** page, select an instance of Analysis Services. Click **Next**.
12. On the **Connect to a SQL Server Database** page, follow these steps:
  - a. Select the computer that hosts your Microsoft Dynamics AX online transaction processing (OLTP) database.
  - b. Select the Microsoft Dynamics AX OLTP database.
  - c. Click **Next**.
13. The domain account that the Analysis Services service runs as must have access to the Microsoft Dynamics AX OLTP database in order to process the cubes. The **Specify user accounts** page lists the accounts that currently have access to the OLTP database. If the account that the Analysis Services service runs as is not listed, click **Add user** to add it.  
Click **Next**.
14. On the **Prerequisite Validation** page, resolve any errors. When no errors remain, click **Next**.
15. On the **Ready to install** page, click **Install**.
16. Click **Finish** to close the Setup wizard.
17. The **Microsoft Dynamics AX 2012 Setup Summary Report** is displayed. This report lists additional procedures that you must complete to integrate Microsoft Dynamics AX and Analysis Services. For more information about the procedures, see [Complete the Analysis Services integration process](#).

### Complete the Analysis Services integration process

After you have completed the steps of the initialization checklist in Microsoft Dynamics AX, complete the following procedures to integrate Microsoft Dynamics AX with Microsoft SQL Server Analysis Services:

1. [Install SQL Server Shared Management Objects](http://technet.microsoft.com/library/7da728c6-9079-48fd-8dcb-1ce64759a412(AX.60).aspx) (http://technet.microsoft.com/library/7da728c6-9079-48fd-8dcb-1ce64759a412(AX.60).aspx)
2. [Verify that exchange rate information has been entered](http://technet.microsoft.com/library/0dc6d13d-abc7-411c-9d00-162767163465(AX.60).aspx) (http://technet.microsoft.com/library/0dc6d13d-abc7-411c-9d00-162767163465(AX.60).aspx)
3. [Deploy the default cubes](http://technet.microsoft.com/library/581f609e-588c-45ce-bc10-32a863ef4589(AX.60).aspx) (http://technet.microsoft.com/library/581f609e-588c-45ce-bc10-32a863ef4589(AX.60).aspx)
4. [Update the OLAP data source](http://technet.microsoft.com/library/d19dbb45-bf32-4f36-b7d2-722c149df5ae(AX.60).aspx) (http://technet.microsoft.com/library/d19dbb45-bf32-4f36-b7d2-722c149df5ae(AX.60).aspx)
5. [How to: Configure an Existing SQL Server Analysis Services Project](http://technet.microsoft.com/library/ee0aa94f-28f9-4427-82c6-51a18e0939be(AX.60).aspx) (http://technet.microsoft.com/library/ee0aa94f-28f9-4427-82c6-51a18e0939be(AX.60).aspx)
6. [Grant users access to cubes](http://technet.microsoft.com/library/dd6bba5a-22d8-4bf0-9355-bee63b45818b(AX.60).aspx) (http://technet.microsoft.com/library/dd6bba5a-22d8-4bf0-9355-bee63b45818b(AX.60).aspx)
7. [Automate the processing of cubes](http://technet.microsoft.com/library/4b5e2423-fefd-490f-8561-a09eecedcc78(AX.60).aspx) (http://technet.microsoft.com/library/4b5e2423-fefd-490f-8561-a09eecedcc78(AX.60).aspx)
8. [How to: Create a Date Dimension for a Cube](http://technet.microsoft.com/library/81508890-2f55-40d4-9894-53118a598f1d(AX.60).aspx) (http://technet.microsoft.com/library/81508890-2f55-40d4-9894-53118a598f1d(AX.60).aspx)
9. [How to: Add a Financial Dimension to a Cube](http://technet.microsoft.com/library/507d6dab-53bb-4116-971b-f834bb3192c8(AX.60).aspx) (http://technet.microsoft.com/library/507d6dab-53bb-4116-971b-f834bb3192c8(AX.60).aspx)

## Install client components

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The topics in this section provide information about how to install the client components for Microsoft Dynamics AX. The following topics are included:

- [Install the Microsoft Dynamics AX client](#)
- [Install Office Add-ins](#)
- [Install Remote Desktop Services integration](#)
- [Troubleshoot installation issues with client components](#)

# Install the Microsoft Dynamics AX client

The Microsoft Dynamics AX client is an interface to Microsoft Dynamics AX data and functionality. The topics in this section provide information about how to install a Microsoft Dynamics AX client.

The following topics are included:

- [Install a client](#)
- [Mass deployment of the Microsoft Dynamics AX Windows client](#)
- [Configure clients to use a shared configuration](#)
- [Configure clients to access data in a partition](#)

## Install a client

When you install a Microsoft Dynamics AX client, the following components are included:

- The Microsoft Dynamics AX interface that connects to an instance of Application Object Server (AOS)
- The Microsoft Dynamics AX Configuration utility

You can access the Microsoft Dynamics AX Configuration utility from the **Administrative Tools** menu. On computers that run Windows 7, **Administrative Tools** is an item in Control Panel.

If you are installing many clients, we recommend that you install them from a file server and create a shared configuration file. For more information, see [Mass deployment of the Microsoft Dynamics AX Windows client](#).

### **Note:**

If you are upgrading clients between Microsoft Dynamics AX 2012, Microsoft Dynamics AX 2012 Feature Pack, and Microsoft Dynamics AX 2012 R2, you should review [How to: Perform in-place upgrade to Microsoft Dynamics AX 2012 R2](#) ([http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f\(AX.60\).aspx](http://technet.microsoft.com/library/eb8193f4-0318-427f-bcc9-2919f47afb8f(AX.60).aspx)).

## Before you install a client

Complete the following tasks before you install a Microsoft Dynamics AX client.

- Read [Manage client security](#) ([http://technet.microsoft.com/library/60c8d10d-9c97-43c0-b99c-9bda66c8376f\(AX.60\).aspx](http://technet.microsoft.com/library/60c8d10d-9c97-43c0-b99c-9bda66c8376f(AX.60).aspx)) to learn about deployment best practices that can help secure the Microsoft Dynamics AX client.
- On the computer where you plan to install the client, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

- Install the Microsoft Dynamics AX databases and AOS in the environment.

## Install a client

Use this procedure to install a Microsoft Dynamics AX client by using the Setup wizard. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Client**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Select client preferences** page, select the display language that is used in the client, and specify whether you want Setup to create a desktop shortcut for the client. Additionally, select one of the following installation types:
  - **Business user** – The basic client is installed. This type of client installation is appropriate for most users.
  - **Developer** – The client, the developer workspace, and additional files that are required for development tasks are installed.
  - **Administrator** – The client and additional files that are required for administrative tasks are installed. Administrative tasks include the deployment of artifacts and the creation of users.

Click **Next**.

9. On the **Specify a location for configuration settings** page, specify whether you want the client to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file.

If you use a shared configuration file, client configuration settings are not stored locally, and the Microsoft Dynamics AX Configuration utility is not installed on the client computer.

 **Note:**

If you install the client at the same time as an AOS instance, this screen is not displayed, and configuration settings are saved in the registry automatically.

For more information about how to use a shared configuration file, see [Configure clients to use a shared configuration](#).

Click **Next**.

10. On the **Connect to an AOS instance** page, enter the name of the computer that runs the AOS instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services.

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If you do not know the name of the AOS instance or the port information, contact the Microsoft Dynamics AX administrator.

 **Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

Click **Next**.

11. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
12. On the **Ready to install** page, click **Install**.
13. After the installation is completed, click **Finish** to close the wizard.

## Mass deployment of the Microsoft Dynamics AX Windows client

The topics in this section provide information that can help you deploy many Windows clients for Microsoft Dynamics AX at the same time.

The following topics are included in this section:

- [Deploy the client by using Microsoft System Center Configuration Manager 2007](#)
- [Deploy the client by using Microsoft System Center 2012 Configuration Manager](#)
- [Deploy the client by using Group Policy](#)

### Deploy the client by using Microsoft System Center Configuration Manager 2007

Microsoft System Center Configuration Manager 2007 is a comprehensive solution that is used to assess, deploy, and update servers, clients, and devices across physical, virtual, distributed, and mobile environments. This topic describes how to use Configuration Manager to deploy Microsoft Dynamics AX clients in a medium to large organization.

This topic does not provide information about how to set up the network infrastructure, such as the Active Directory directory service, Microsoft SQL Server, and System Center Configuration Manager.

For more information about how to set up and use Configuration Manager, see the [Configuration Manager 2007 Documentation Library](#) (<http://technet.microsoft.com/en-us/library/bb680651.aspx>) on TechNet.

#### Overview of the deployment process

To deploy Microsoft Dynamics AX clients by using Configuration Manager, you must create and define the following objects:

- **Collections** – A collection is a group of resources, such as users, user groups, or computers. A collection defines the target of a software deployment.  
For more information about collections, see [Collections Overview](#) (<http://go.microsoft.com/fwlink/?LinkId=145870>) in the Configuration Manager documentation.
- **Packages** – A package is the set of installation source files that Configuration Manager manages and distributes for a software deployment. Packages include distribution points and the programs that are used to deploy the software.  
For more information about packages, see [About Packages](#) (<http://go.microsoft.com/fwlink/?LinkId=145871>) in the Configuration Manager documentation.
- **Programs** – Programs contain command-line switches and additional parameters that are used by designated source files in packages, such as Setup.exe.  
For more information about programs, see [About Programs](#) (<http://go.microsoft.com/fwlink/?LinkId=145872>) in the Configuration Manager documentation.
- **Distribution points** – Distribution points are site systems for Configuration Manager that store packages that can be deployed to Configuration Manager clients. When the client receives and processes an advertisement, the client contacts a distribution point to download the package and start the installation process.  
For more information about distribution points, see [About Distribution Points](#) (<http://go.microsoft.com/fwlink/?LinkId=145873>) in the Configuration Manager documentation.

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- **Advertisements** – Advertisements let administrators target a software deployment to collections of computers or users. An advertisement specifies a package, a program, and the collection to which the advertisement is sent and deployed.

For more information about advertisements, see [About Advertisements](#)

(<http://go.microsoft.com/fwlink/?LinkId=145875>) in the Configuration Manager documentation.

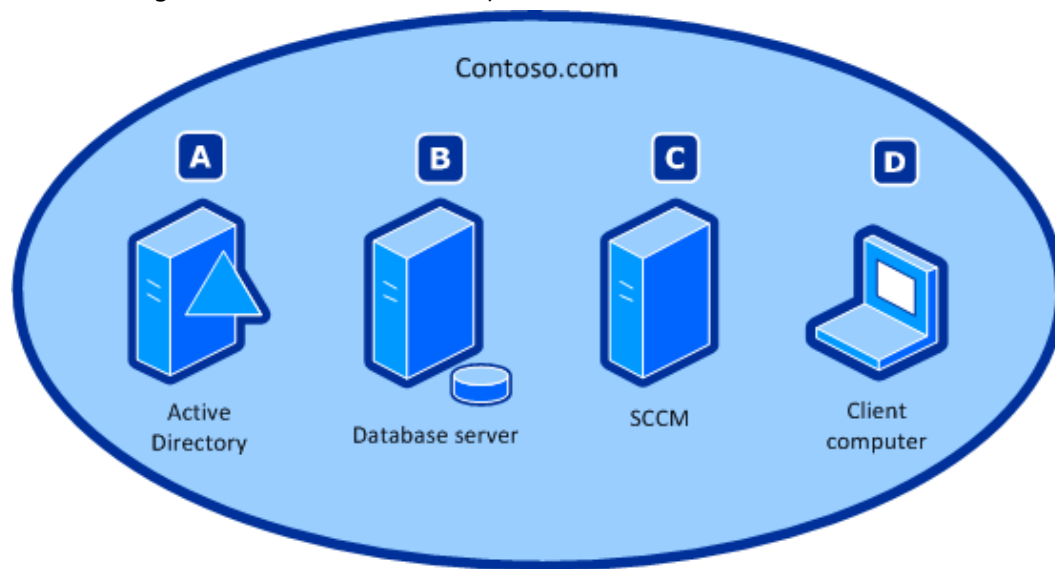
### Example: Deploy Microsoft Dynamics AX clients by using Configuration Manager

This section provides an example of a network environment for the Configuration Manager infrastructure. This section also describes how Configuration Manager is used to deploy Microsoft Dynamics AX clients in this environment.

You can use this example as a guide when you use Configuration Manager to deploy Microsoft Dynamics AX clients in your implementation.

### Network environment

The following illustration shows an example of a network environment.



All the computers are members of the Contoso.com domain.

Servers A, B, and C run Windows Server 2008. The applications and roles on each computer are as follows:

- **A** – The domain controller that runs Active Directory, the Domain Name System (DNS) Server role, and the Dynamic Host Configuration Protocol (DHCP) Server role
- **B** – The database server that runs Microsoft SQL Server 2008
- **C** – The management point and distribution point that runs System Center Configuration Manager
- **D** – The client computer that runs Windows 7 Professional and the System Center Configuration Manager client

#### **Note:**

In the network environment in this example, server C performs multiple roles in the site system. However, we do not recommend this configuration in production environments that have many resources.



### Create a collection

This section explains how to use direct membership rules to create a collection in System Center Configuration Manager 2007. For more information about membership rules, see [About Membership Rules](http://go.microsoft.com/fwlink/?LinkId=145884) (http://go.microsoft.com/fwlink/?LinkId=145884) in the Configuration Manager documentation.

1. In the Configuration Manager Console, click **System Center Configuration Manager > Site Database > Computer Management > Collections**.
2. Right-click **Collections**, and then click **New Collection**. On the **General** page of the New Collection Wizard, enter a name for the collection.
3. On the **Membership Rules** page, click the computer icon to open the Create Direct Membership Rule Wizard. Click **Next**.
4. On the **Search for Resources** page, in the **Resource class** field, select **System Resource**. Then, in the **Attribute name** field, select **Name**. In the **Value** field, enter **%**, and then click **Next**.
5. On the **Collection Limiting** page, click **Browse**, select **All Windows Workstation or Professional Systems**, click **OK**, and then click **Next**.
6. On the **Select Resources** page, select the check box for each computer resource that you want to target. Click **Next**.
7. On the **Finished** page, click **Finish**.
8. On the **Membership Rules** page of the New Collection Wizard, click **Next**.
9. On the **Advertisements** page, you cannot assign an advertisement, because you have not yet created an advertisement. Click **Next**.
10. On the **Security** page, accept the default values, click **Next**, and then click **Close**.

### Prepare the source directory for the package

The source directory for a package contains all the files and subdirectories that are required to run the programs in a package. For Microsoft Dynamics AX, the source directory must contain a copy of the installation media for Microsoft Dynamics AX.

For more information about source directories for packages, see [How to Set Up a Package Source Directory](http://go.microsoft.com/fwlink/?LinkId=145890) (http://go.microsoft.com/fwlink/?LinkId=145890) in the Configuration Manager documentation.

### Create a package for Microsoft Dynamics AX

This section explains how to create a package that contains the parameters that are used to install the Microsoft Dynamics AX client.

In this example, the Microsoft Dynamics AX client and its prerequisites are contained in one package that has multiple programs. You can also deploy the programs in separate packages.

The location from which the package is distributed is known as the distribution point.

1. In the Configuration Manager Console, click **System Center Configuration Manager > Site Database > Computer Management > Software Distribution > Packages**.
2. Right-click **Packages**, point to **New**, and then click **Package**.
3. On the **General** page of the New Package Wizard, enter the name, version, manufacturer, and language. For example, enter **Microsoft Dynamics AX 2012 EN**. Click **OK**, and then click **Next**.
4. Click **Next** on all the remaining pages of the wizard to accept the default settings. On the **Wizard Completed** page, click **Close**.

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### Determine which parameters are used for a silent installation

Before you create programs that are used to install the Microsoft Dynamics AX client and its prerequisites, you must determine which command-line parameters are required to silently install the software. A silent installation is an installation that does not require user interaction.

To install client components, use parameters for the Microsoft Dynamics AX Setup program. For information about individual parameters, see the [Setup parameters reference](http://go.microsoft.com/fwlink/?LinkId=191476) (<http://go.microsoft.com/fwlink/?LinkId=191476>) on TechNet. Setup can also configure some required prerequisites, such as operating system features and roles, and redistributable components that are on the installation media for Microsoft Dynamics AX. If you want Setup to automatically configure these prerequisites, include the parameter *ConfigurePrerequisites=1* when you create the program that installs the client.

You can silently install other prerequisites by running the individual programs from the command line. You must create a separate program for each of these prerequisites. To determine the command-line parameters that are required, we recommend that you run the Microsoft Dynamics AX prerequisite verification utility on a representative client. When you use the utility to configure prerequisites, the log file indicates the commands that were used.

For more information about how to find the appropriate command-line parameters for a silent installation, see [Run Setup in silent mode](#).

### Create programs

Next, you must create the programs that are included in the package.

Create one program that contains the parameters that are used to silently install the Microsoft Dynamics AX client. In addition, create a separate program for every prerequisite of Microsoft Dynamics AX that cannot be configured automatically by the Microsoft Dynamics AX Setup program.

### Create a program to install the Microsoft Dynamics AX client

Use the following procedure to create a program that installs the Microsoft Dynamics AX client.

1. In the Configuration Manager Console, right-click **Programs**, point to **New**, and then click **Program**.
2. On the **General** page of the New Program Wizard, enter a name for the package in the **Name** field. In the **Command line** field, enter the Setup parameters that you want to use. For example, type the following command.

```
setup.exe RunMode=Custom HideUI=1 AcceptLicenseTerms=1 ByPasswarnings=0 InstallClientUI=1  
ClientAOSServer=Ax62-AOS01 AOSPort=2712 AOSWsdPort=8101 ClientLanguage=en-us  
ConfigurePrerequisites=1 LogDir="c:\Temp"
```

#### **Important:**

If you want Setup to automatically configure the prerequisites that it can configure, specify the parameter *ConfigurePrerequisites=1*.

If you do not want the Microsoft Dynamics AX Configuration utility to be installed when clients are installed, specify the parameter *ClientConfig=0*. To set up clients so that they use a shared configuration file, set the *ClientConfigFile* parameter to the path of the configuration file in the shared directory. For example, specify the parameter as follows.

```
ClientConfigFile="X:\<name of configuration file>.axc"
```

For more information about whether to install the Configuration Utility, and about using shared configuration files, see [About the Microsoft Dynamics AX 2012 Configuration utility](http://technet.microsoft.com/library/71ed1cd3-6473-4bbe-8f6d-ef792f0dfe6c(AX.60).aspx) ([http://technet.microsoft.com/library/71ed1cd3-6473-4bbe-8f6d-ef792f0dfe6c\(AX.60\).aspx](http://technet.microsoft.com/library/71ed1cd3-6473-4bbe-8f6d-ef792f0dfe6c(AX.60).aspx)).

3. In the **Run** field, select **Hidden**. In the **After running** field, verify that **No action required** is selected. Click **Next**, and then accept the default values on the **Requirements** page.
4. On the **Environment** page, in the **Program can run** field, select **Whether or not a user is logged on**. The **Run mode** field is automatically set to **Run with administrative rights**. Make sure that the **Drive mode** field is set to **Runs with UNC name**, and then click **Next**.
5. On the **Advanced** page, select **Suppress program notifications**, and then click **Next**.

 **Note:**

If you want a notification about the installation to be displayed on each user's desktop, clear **Suppress program notifications**.

6. On the **Summary** page, click **Next**. The **Wizard Completed** page is displayed.
7. To exit the New Program Wizard, click **Close**.

### Create programs to install prerequisites

You must create a program for every prerequisite that cannot be configured automatically by the Microsoft Dynamics AX Setup program. The following example shows how to create a program that installs Report Viewer 2012.

1. In the Configuration Manager Console, right-click **Programs**, point to **New**, and then click **Program**.
2. On the **General** page of the New Program Wizard, enter a name for the package in the **Name** field. For example, enter **Report viewer 2012 installation**. In the **Command line** field, type the command that is used to install the prerequisite. For Report Viewer 2012, type the following command.

```
Redist\ReportViewer2010\ReportViewer /passive
```

3. In the **Run** field, select **Hidden**. In the **After running** field, verify that **No action required** is selected. Click **Next**, and then accept the default values on the **Requirements** page.
4. On the **Environment** page, in the **Program can run** field, select **Whether or not a user is logged on**. The **Run mode** field is automatically set to **Run with administrative rights**. Make sure that the **Drive mode** field is set to **Runs with UNC name**, and then click **Next**.
5. On the **Advanced** page, select **Suppress program notifications**, and then click **Next**.

 **Note:**

If you want a notification about the installation to be displayed on each user's desktop, clear **Suppress program notifications**.

6. On the **Summary** page, click **Next**. The **Wizard Completed** page is displayed.
7. To exit the New Program Wizard, click **Close**.

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### Select a distribution point

To use a server as a distribution point that distributes packages to client computers, you must first designate a site system as a distribution point. In this example, the site server that is named SCCM is configured as both a management point and a distribution point.

1. In the Configuration Manager Console, right-click **Distribution Points**, click **New Distribution Points**, click **Next**, and then select the check box for the distribution point. In this example, the new distribution point is server C. Click **Next**.
2. When you have finished running the New Distribution Points Wizard, click **Close**.

Before you advertise the package, we recommend that you verify that the package is stored on the distribution point. For more information about how to verify the status of a package, see [How to View the Status of a Package](http://go.microsoft.com/fwlink/?LinkId=145898) (<http://go.microsoft.com/fwlink/?LinkId=145898>) in the Configuration Manager documentation.

### Create an advertisement for the Microsoft Dynamics AX client package

Next, you must advertise the package that contains both the Configuration Manager distribution point and the programs that are used to deploy the Microsoft Dynamics AX client and its prerequisites. This example shows how to create an advertisement of the Microsoft Dynamics AX client package.

1. In the Configuration Manager Console, right-click **Advertisements**, point to **New**, and then click **Advertisement**.
2. On the **General** page of the New Advertisement Wizard, enter a name in the **Name** field. Click the **Browse** button for the **Package** field, and then click the package that you want to advertise. Click **OK**. Click the **Browse** button for the **Collection** field, click the collection, click **OK**, and then click **Next**.
3. On the **Schedule** page, in the **Advertisement start time** fields, enter the date and time when the advertisement becomes available, and then click the asterisk (\*) button for **Mandatory Assignments**.
4. On the **Assignment Schedule** page, click **Schedule**, and then enter the same date and time that you entered in the **Advertisement start time** fields on the **Schedule** page. Click **OK**.
5. On the **Schedule** page, select the check boxes for **Enable Wake On LAN**, **Ignore maintenance windows when running program**, and **Allow system restart outside maintenance windows**, and then click **Next**.

#### **Note:**

In your production environment, policies may require that you select different values for the assignment schedule than the values that are shown in this example. For more information about these options, see [Advertisement Name Properties: Schedule Tab](http://go.microsoft.com/fwlink/?LinkId=145900) (<http://go.microsoft.com/fwlink/?LinkId=145900>) in the Configuration Manager documentation.

6. Accept the default values on the remaining pages. On the **Wizard Completed** page, click **Close**.

The package is advertised to the targeted collection, and the silent installation of Microsoft Dynamics AX client starts.

For information about how to monitor the status of an advertisement, see [How to View the Status of an Advertisement](http://go.microsoft.com/fwlink/?LinkId=145901) (<http://go.microsoft.com/fwlink/?LinkId=145901>) in the Configuration Manager documentation.

## Deploy the client by using Microsoft System Center 2012 Configuration Manager

Microsoft System Center 2012 Configuration Manager is a comprehensive solution that is used to assess, deploy, and update servers, clients, and devices across physical, virtual, distributed, and mobile environments. This topic describes how to use Configuration Manager to deploy Microsoft Dynamics AX clients in a medium to large organization.

This topic does not provide information about how to set up the network infrastructure, such as the Active Directory directory service, Microsoft SQL Server, or Configuration Manager.

For more information about how to set up and use Configuration Manager, see the [Documentation Library for System Center 2012 Configuration Manager](http://technet.microsoft.com/en-us/library/gg682041.aspx) (<http://technet.microsoft.com/en-us/library/gg682041.aspx>) on TechNet.

### Overview of the deployment process

To deploy Microsoft Dynamics AX clients by using Configuration Manager, you must create and define the following objects:

- **Collections** – A collection is a group of resources, such as users, user groups, or computers. A collection defines the target of a software deployment.  
For more information about collections, see [Collections in Configuration Manager](http://go.microsoft.com/fwlink/?LinkId=272071) (<http://go.microsoft.com/fwlink/?LinkId=272071>) on TechNet.
- **Packages** – A package is the set of installation source files that Configuration Manager manages and distributes for a software deployment. Packages include distribution points and the programs that are used to deploy the software.  
For more information about packages, see [Packages and Programs in Configuration Manager](http://go.microsoft.com/fwlink/?LinkId=272072) (<http://go.microsoft.com/fwlink/?LinkId=272072>) on TechNet.
- **Distribution points** – Distribution points are site systems for Configuration Manager that store packages that can be deployed to Configuration Manager clients. When the client receives a deployment, the client contacts a distribution point to download the package and start the installation process.  
For more information about distribution points, see [Introduction to Content Management in Configuration Manager](http://go.microsoft.com/fwlink/?LinkId=272073) (<http://go.microsoft.com/fwlink/?LinkId=272073>) on TechNet.

### Create a collection

This section explains how to use direct membership rules to create a collection in System Center 2012 Configuration Manager. For more information about membership rules, see [Collections in Configuration Manager](http://go.microsoft.com/fwlink/?LinkId=272071) (<http://go.microsoft.com/fwlink/?LinkId=272071>) on TechNet.

1. In the Configuration Manager console, click **Assets and Compliance**.
2. In the **Assets and Compliance** workspace, click **Device Collections**.
3. On the **Home** tab, in the **Create** group, click **Create Device Collections**.
4. On the **General** page of the New Collection Wizard, enter a name and description for the collection. In the **Limiting collection** field, select **All systems**.
5. On the **Membership Rules** page, in the **Add Rule** list, click **Direct rule**.

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6. On the **Search for Resources** page of the Create Direct Membership Rule Wizard, specify the following information:
  - **Resource class** – In the list, select the type of resource to search for and add to the collection. Select **System Resource** to search for inventory data that is returned from client computers. Select **Unknown Computer** to select among values that are returned by unknown computers.
  - **Attribute name** – In the list, among the attributes that are associated with the selected resource class, select the attribute to search for. For example, if you want to select computers by their NetBIOS name, select **System Resource** in the **Resource class** list and **NetBIOS name** in the **Attribute name** list.
  - **Exclude resources marked as obsolete** – If a client computer is marked as obsolete, do not include this value in the search results.
  - **Exclude resources that do not have the Configuration Manager client installed** – If the search results include a resource for which a Configuration Manager client is not installed, do not include this value in the search results.
  - **Value** – Enter a value for which to search the selected attribute name. You can use the percent sign (%) as a wildcard character. For example, if you want to search for computers that have a NetBIOS name that starts with 'M', enter **M%** in this field.
7. On the **Select Resources** page of the Create Direct Membership Rule Wizard, in the **Resources** list, select the resources to add to the collection, and then click **Next**.
8. Complete the Create Direct Membership Rule Wizard.

### Prepare the source directory for the package

The source directory for a package contains all the files and subdirectories that are required to run the programs in the package. For Microsoft Dynamics AX, the source directory must contain a copy of the installation media for Microsoft Dynamics AX.

### Create a command file for installation parameters

Before you create a package to install the Microsoft Dynamics AX client and its prerequisites, you must create a command (.cmd) file that contains the command-line parameters that are used to install the software.

To install client components, use parameters for the Microsoft Dynamics AX Setup program. For information about individual parameters, see [Setup parameters reference](http://go.microsoft.com/fwlink/?linkid=191476) (<http://go.microsoft.com/fwlink/?linkid=191476>) on TechNet. Setup can also configure some required prerequisites, such as operating system features and roles. Additionally, Setup can configure redistributable components that are on the installation media for Microsoft Dynamics AX. If you want Setup to automatically configure these prerequisites, include the parameter *ConfigurePrerequisites=1*. You can silently install other prerequisites by running the individual programs from the command line. You must create a separate program for each prerequisite. To determine the command-line parameters that are required, we recommend that you run the Microsoft Dynamics AX prerequisite verification utility on a representative client. When you use the utility to configure prerequisites, the log file indicates the commands that were used.

For more information about how to find the appropriate command-line parameters for a silent installation, see [Run Setup in silent mode](#).

When you have determined which parameters to use, create a parameter file in a text editor, such as Notepad. For example, create a text file that contains the following command:

```
setup.exe RunMode=Custom HideUI=1 AcceptLicenseTerms=1 ByPasswarnings=0 InstallClientUI=1
ClientAOSServer=Ax62-AOS01 AOSPort=2712 AOSWsdLPort=8101 ClientLanguage=en-us
ConfigurePrerequisites=1 LogDir="c:\Temp"
```

Save the file so that it has the .cmd file name extension.

### Create a package for the Microsoft Dynamics AX client

This section explains how to create the package that is used to install the Microsoft Dynamics AX client. For more information about how to create packages, see [How to Create Packages and Programs in Configuration Manager](http://technet.microsoft.com/en-us/library/gg682112.aspx) (<http://technet.microsoft.com/en-us/library/gg682112.aspx>) on TechNet.

1. In the Configuration Manager console, click **Software Library**.
2. In the **Software Library** workspace, expand **Application Management**, and then click **Packages**.
3. On the **Home** tab, in the **Create** group, click **Create Package**.
4. On the **Package** page of the Create Package and Program Wizard, specify the following information:
  - **Name** – Specify a name for the package. For example, enter **Microsoft Dynamics AX 2012**.
  - **Description** – Optional: Enter a description for the package.
  - **Manufacturer** – Optional: Specify a manufacturer name to help you identify the package in the Configuration Manager console. For example, enter **Microsoft**.
  - **Language** – Optional: Specify the language version of the package. For example, enter **U.S. English**.
  - **Version** – Optional: Specify the version number for the package. For example, enter **R2**.
  - **This package contains source files** – Select this option to use distribution points.
  - **Source folder** – Click **Browse** to open the **Set Source Folder** dialog box, and then specify the location of the source files for the package.
5. On the **Program Type** page of the Create Package and Program Wizard, select **Standard Program**, and then click **Next**.
6. On the **Standard Program** page of the Create Package and Program Wizard, enter a name for the program. In the **Command Line** field, browse to the location of the .cmd file that you created. Optionally, specify a startup folder for the program. For all other options on the **Standard Program** page, accept the default values.  
Click **Next**.
7. On the **Requirements** page of the Create Package and Program Wizard, specify your requirements, or accept the default values. Click **Next**.
8. On the **Summary** page of the wizard, review the actions that will be taken, and then complete the wizard. The new package and program are displayed in the **Packages** node of the **Software Library** workspace.

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### Deploy the package for the Microsoft Dynamics AX client

Next, you must deploy the package that contains both the distribution point and the programs that are used to deploy the Microsoft Dynamics AX client and its prerequisites.

For more information about how to deploy packages, see [How to Deploy Packages and Programs in Configuration Manager](http://technet.microsoft.com/en-us/library/gg682178.aspx) (<http://technet.microsoft.com/en-us/library/gg682178.aspx>) on TechNet.

1. In the Configuration Manager console, click **Software Library**.
2. In the **Software Library** workspace, expand **Application Management**, and then click **Packages**.
3. Select the package to deploy, and then, on the **Home** tab, in the **Deployment** group, click **Deploy**.
4. On the **General** page of the Deploy Software Wizard, specify the name of the package and program to deploy, the collection to deploy the package and program to, and optional comments for the deployment.
5. On the **Content** page of the wizard, click **Add**. Select the distribution points to which to deploy the content that is associated with the package and program.
6. On the **Deployment Settings** page of the wizard, accept the default values.
7. On the **Scheduling** page of the wizard, specify when this package and program are deployed or made available to client computers.
8. On the **User Experience** page of the wizard, select the options that are appropriate to your implementation.
9. On the **Distribution Points** page of the wizard, under **Deployment options**, select **Download content from distribution point and run locally**.
10. On the **Summary** page of the wizard, review the actions that will be taken, and then complete the wizard.



## Deploy the client by using Group Policy

Group Policy provides an infrastructure that lets you centrally manage the configuration of operating systems and applications. This topic describes the processes and procedures that you must use to deploy Microsoft Dynamics AX clients by using Group Policy.

When you publish the Microsoft Dynamics AX client by using Group Policy, the program becomes available from the **Install a program from the network** option in the **Programs and Features** Control Panel. Users can install the Microsoft Dynamics AX client by using the settings that you specify.

For more information about Group Policy, see the [Group Policy Planning and Deployment Guide](http://technet.microsoft.com/library/cc754948(v=WS.10).aspx) ([http://technet.microsoft.com/library/cc754948\(v=WS.10\).aspx](http://technet.microsoft.com/library/cc754948(v=WS.10).aspx)) on TechNet.

### Overview of the deployment process

You must perform the following procedures to deploy Microsoft Dynamics AX clients by using Group Policy.

1. **Create a distribution point** – Create the location from which the software is installed.
2. **Create a transform for the ClientOba.msi file** – Modify the Microsoft Windows Installer package, or .msi file, for the Microsoft Dynamics AX client to enable the client to be deployed by using Group Policy. There are two versions of the .msi file: ClientOba.msi, which is for 32-bit systems, and ClientOba64.msi, which is for 64-bit systems.
3. **Create a Group Policy object** – Create a Group Policy object and publish it to the domain.
4. (Optional) **Update Group Policy settings on client computers** – Run the Gpupdate utility if you want the changes to be applied to a client computer immediately. If you do not use Gpupdate, you must wait the default update interval or restart the computer.

### Create a distribution point

To publish the Microsoft Dynamics AX installation by using Group Policy, you must first create a distribution point on the publishing server.

1. Log on to the server computer as an administrator.
2. Create a shared network folder where you can put the .msi file for the Microsoft Dynamics AX client components.
3. Set permissions on the shared network folder to allow access to the distribution package. Make sure that all users who must install Microsoft Dynamics AX have Read access to this directory.
4. Install the package to the distribution point. From the folder where you saved the Microsoft Dynamics AX DVD image, run the msixec tool. In the command, include the /a parameter, and specify the location of the distribution point. For example, you might use the following command to install the 64-bit Microsoft Dynamics AX client components to the distribution point:

```
msiexec /a ClientOba64.msi TARGETDIR=\\<Server>\<Directory>\<SharedFolder>
```

#### **Note:**

The msixec tool lets you install, modify, and perform operations on Windows Installer files from the command line. For more information about how to use msixec, see [Msiexec \(command-line options\)](http://technet.microsoft.com/en-us/library/cc759262(WS.10).aspx) ([http://technet.microsoft.com/en-us/library/cc759262\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc759262(WS.10).aspx)) on TechNet.

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### Create a transform for the ClientOba.msi file

The .msi file for the Microsoft Dynamics AX client components must be modified before it can be published by using Group Policy. You can use the Orca database editor to modify .msi files. For more information about how to install and use Orca, see the Microsoft Knowledge Base article [How to use the Orca database editor to edit Windows Installer files](http://support.microsoft.com/kb/255905) (http://support.microsoft.com/kb/255905).

1. Open ClientOba.msi or ClientOba64.msi by using the Orca editor.
2. Click **Transform > New Transform**.
3. Select the features that you want to install. In the left pane, select the **Feature** table. In the right pane, use the **Level** column to specify whether features are installed on client computers. The following table shows the possible values.

Level	Description
0	The feature is not available for installation.
<150	The feature is installed on the local hard disk.
>150	The feature is available for installation, but it is not installed by default.

 **Note:**

If you do not want a feature to be installed automatically on client computers, set the level to 0. If a parent feature has a level of 0, all child features are also unavailable.

4. Set information about the connection to Application Object Server (AOS). In the left pane, select the **Property** table. In the right pane, double-click to add a line for each property and value. The following table describes the properties that you can set.

Property	Value
<b>AOS2</b>	(Required) Enter the name of the AOS instance that clients connect to.
<b>ClientAOSServer</b>	(Required) Enter the name of the AOS instance that clients connect to.
<b>AOSPort</b>	Enter the TCP/IP port for the AOS. By default, the AOS uses port 2712.
<b>AOSWSDLPort</b>	Enter the WSDL port for the AOS. By default, the AOS uses port 8101.
<b>InstallDir</b>	(Required) Specify the location where program files for Microsoft Dynamics AX are installed. By default, the path is <Drive>:\Program Files\Microsoft Dynamics AX\60.
<b>InstallDir32</b>	(Required for 64-bit operating systems) Specify the location where 32-bit versions of program files for Microsoft Dynamics AX are installed. You cannot specify the same path for both 64-bit files and 32-bit files.
<b>DirectExecute</b>	(Required) Enter <b>1</b> to enable the .msi file to be run directly.

5. Click **Transform > Generate Transform**. Enter a name and location for the .mst file.

### Create a Group Policy object

An Active Directory–based Group Policy object (GPO) is a virtual collection of policy settings. Active Directory–based GPOs can be linked to a domain, site, or organizational unit. The settings in GPOs can be applied to users or computers. GPOs are stored in a domain and replicated to all the domain controllers for the domain.

Use the following procedure to create a GPO that installs the Microsoft Dynamics AX client components.

1. On the domain controller, click **Administrative Tools > Group Policy Management** to open the Group Policy Management console.
2. Under the domain for which you want to create a GPO, right-click **Group Policy Objects** and then click **New**.
3. Specify a name for the GPO and then click **OK**.
4. Select the new GPO and then click the **Settings** tab.
5. Under **User Configuration**, right-click, and then select **Edit** to open the Group Policy Management Editor.
6. Expand **User Configuration > Policies > Software Settings**.
7. Right-click **Software Installation**, and then select **New Package**.
8. Browse to the distribution point that you set up.
9. Click **Advanced**.
  - On the **Deployment** tab, select a deployment type of **Published**.
  - On the **Modification** tab, select the .mst file that you created.
10. Click **OK** to finish configuring the GPO.

### (Optional) Update Group Policy settings on client computers

Typically, after you modify group policy settings, you must wait a default update interval or restart the computer. The default update interval is 90 minutes on domain members and 5 minutes on domain controllers. However, if you want the changes to be applied immediately, you can run the Gpupdate utility at a command prompt.

For more information about how to use the Gpupdate utility, see [Gpupdate](http://technet.microsoft.com/en-us/library/bb490983.aspx) (http://technet.microsoft.com/en-us/library/bb490983.aspx) on TechNet.

### Configure clients to use a shared configuration

By default, the Microsoft Dynamics AX client reads configuration information from the registry on the local computer. If you deploy many Microsoft Dynamics AX clients, it can be difficult to maintain or troubleshoot configurations. To enhance security and simplify client administration, we recommend that large deployments run the Microsoft Dynamics AX client as a Windows Server RemoteApp. For more information, see the Windows Server RemoteApp documentation on TechNet. If your organization cannot deploy the Microsoft Dynamics AX client as a remote application, we recommend that you deploy the client by using one of the methods that are listed in the following table.

Deployment method	For more information
Microsoft System Center Configuration Manager	<a href="#">Deploy the client by using Microsoft System Center Configuration Manager 2007</a> <a href="#">Deploy the client by using Microsoft System Center 2012 Configuration Manager</a>
Group Policy	<a href="#">Deploy the client by using Group Policy</a>

If you deploy the Microsoft Dynamics AX client by using one of these methods, we recommend that you configure clients to access configuration information from a file that is stored on a network share. A shared configuration file can reduce the time that you spend administering or troubleshooting clients.

#### Before you begin


If your business or organization runs Microsoft Dynamics AX 2012 clients on both 32-bit and 64-bit versions of the Windows operating system, you must create multiple configuration files. Microsoft Dynamics AX clients that run on a 32-bit version of Windows must connect to a client configuration file that was created on a 32-bit version of Windows. Similarly, Microsoft Dynamics AX clients that run on a 64-bit version of Windows must connect to a client configuration file that was created on a 64-bit version of Windows.

#### Create a shared configuration file

1. On a file server or the server that hosts Application Object Server (AOS), create the directory that the clients share. Configure the directory so that all users of the Microsoft Dynamics AX client have read access.
2. Use the Microsoft Dynamics AX 2012 Configuration utility to save a Microsoft Dynamics AX configuration as a file. For more information, see [Manage a client configuration](http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx) ([http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3\(AX.60\).aspx](http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx)). If your business or organization runs both 32-bit and 64-bit versions of Windows, you must save a separate configuration file for each operating system. Open the Microsoft Dynamics AX 2012 Configuration utility on each operating system, and save a configuration as a file. We recommend that you give each configuration a name that identifies the version, such as 32bit.axc and 64bit.axc.
3. Copy the configuration files to the share that you created in step 1.

## Set up clients to use the shared configuration file

The following table lists three methods that you can use to set up clients to use a shared configuration file. For more information, see [Install a client](#).

Method	For more information
In the Setup wizard, enter the path of the shared configuration file when you install the Microsoft Dynamics AX client.	<a href="#">Install a client</a>
Log on to a client computer, and use the <b>Set Configuration Store</b> option in the Microsoft Dynamics AX 2012 Configuration utility to specify the new shared configuration file. This method is useful when a client is already installed and configured to read configurations from the registry on the local computer.	<a href="#">Manage a client configuration</a> ( <a href="http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx">http://technet.microsoft.com/library/813ed1c9-aec5-47f5-9c1f-94e934fda5d3(AX.60).aspx</a> )
Use the ClientConfigFile setup parameter, and specify the path of the shared configuration file. This method can be used for client installations that are run in silent mode. The following example shows the format of the parameter.  ClientConfigFile="%Drive%:\<name of configuration file>.axc"   <b>Tip:</b> If you want to install clients, but you do not want to install the Microsoft Dynamics AX 2012 Configuration utility, set the ClientConfig parameter to 0 (zero).	<a href="#">Run Setup in silent mode</a>

## See Also

[Client security and protection](#) ([http://technet.microsoft.com/library/72fe9fe4-4edd-4e3b-b56d-731f844a4c7b\(AX.60\).aspx](http://technet.microsoft.com/library/72fe9fe4-4edd-4e3b-b56d-731f844a4c7b(AX.60).aspx))

## Configure clients to access data in a partition

Microsoft Dynamics AX 2012 R2 enables data isolation by using data *partitions*. Data partitions provide a logical separation of data in the Microsoft Dynamics AX database. Partitions are defined in the **Partitions** form, where the system administrator creates the partition and provides a *partition key*. A partition key identifies a partition by using a unique string value that the system administrator specifies. Microsoft Dynamics AX displays the partition key in the title bar of the client application. For more information about partitions, see [Data partitioning architecture](#) ([http://technet.microsoft.com/library/27ba6c51-7ea7-4403-867a-46ccc1ee053a\(AX.60\).aspx](http://technet.microsoft.com/library/27ba6c51-7ea7-4403-867a-46ccc1ee053a(AX.60).aspx)).

This topic describes two ways to configure Microsoft Dynamics AX clients to access data in a specific partition.

### Before you begin

Before you configure clients to access data in a partition, verify the following.

1. You are an administrator in Microsoft Dynamics AX.
2. You are an administrator on the local client computer where you will create a configuration by using the Microsoft Dynamics AX 2012 Configuration utility. This requirement is only necessary if you use the configuration file procedure later in this section.
3. You have the partition key(s) from the **System administration > Setup > Partitions** form.
4. All users who require access to a designated partition are listed on the **Users** form for that partition.

### Configure clients to access data in a partition by using a configuration file

This procedure describes how to configure clients to access data in a partition by using a Microsoft Dynamics AX client configuration file. If your business or organization has only one partition, you can create a partition-specific configuration and then deploy the configuration by using a shared-configuration file. For more information, see [Configure clients to use a shared configuration](#). If your business or organization has multiple partitions, you can create multiple client configurations and then deploy those configurations by using the system tools available for mass-client deployments. For more information, see [Mass deployment of the Microsoft Dynamics AX Windows client](#). For multiple partitions, you can also configure clients to access data in a partition by creating multiple client shortcuts as described in the next procedure in this topic.

1. Open the configuration utility. Click **Start > Control Panel > Administrative Tools > Microsoft Dynamics AX 2012 Configuration**.
2. In the **Configuration target** list, select **Local client**.
3. Click **Manage**, and then click **Create configuration**.
4. In the **Create configuration** dialog box, in the **Name** box, type a name.
5. You can copy settings from either the active configuration or the original configuration, which is the default configuration. Select the configuration that you want to copy settings from, and then click **OK**.
6. On the **General** tab, enter a partition key in the **Partition** field. Click **OK** to save your changes or save your changes to a file for shared-configuration client deployments.
7. Open the Microsoft Dynamics AX client and verify that you see the partition key in the title bar.

### Configure clients to access data in a partition by using a Windows shortcut

You can also configure clients to access data in a specific partition by adding the `-partition= key` argument to the Microsoft Dynamics AX client shortcut.

1. On a computer where the Microsoft Dynamics AX client is installed, click **Start > All Programs**, and then right-click the **Microsoft Dynamics AX 2012** shortcut.
2. Click **Properties**.
3. In the **Target** field, add the `-partition= key` argument to the end of the path.  
For example: "C:\Program Files (x86)\Microsoft Dynamics AX\60\Client\Bin\Ax32.exe" -partition=test
4. Click **OK**, and then double-click the shortcut to verify that the client opens in the specified partition.
5. Repeat this procedure to create shortcuts to different partitions.

## Install Office Add-ins

Use the Microsoft Office Add-ins for Microsoft Dynamics AX to integrate the Microsoft Dynamics AX client with Microsoft Excel or Microsoft Word. When you install the Office Add-ins, a new contextual tab for Microsoft Dynamics AX is created on the ribbon in Excel and Word. Users can use the controls on this tab to create and update data in an Excel spreadsheet or a Word document.

### Before you install the Office Add-ins

On the computer where you are installing this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

### Install the Office Add-ins

Use this procedure to install the files for the Office Add-ins on a client computer. If you install other Microsoft Dynamics AX components at the same time, the installation screens vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Office Add-ins**. When you select **Office Add-ins**, **Remote Desktop Services integration** is selected automatically. Click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing the Office Add-ins on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want 32-bit versions of Microsoft Dynamics AX files to be installed, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want the Office Add-ins to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file.

If you use a shared configuration file, client configuration settings are not stored locally, and the Microsoft Dynamics AX Configuration utility is not installed on the client computer.

For more information about how to use a shared configuration file, see [Configure clients to use a shared configuration](#).

Click **Next**.

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9. On the **Connect to an AOS instance** page, enter the name of the computer that runs the Application Object Server (AOS) instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services.

If you do not know the name of the AOS instance or the port information, contact the Microsoft Dynamics AX administrator.

 **Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

Click **Next**.

10. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
11. On the **Ready to install** page, click **Install**.
12. After the installation is completed, click **Finish** to close the wizard.
13. The first time that you open Excel or Word on a computer where the Office Add-ins component was installed, you are prompted to install the add-in. Click **Install** to continue with the installation.



## Install Remote Desktop Services integration

The Remote Desktop Services integration components for Microsoft Dynamics AX support integration with local applications, such as Microsoft Word and Microsoft Excel, when Microsoft Dynamics AX is hosted on a Remote Desktop server. Install the Remote Desktop Services integration components on local client computers. The Remote Desktop Services integration components are selected automatically when you install the Office Add-ins for Microsoft Dynamics AX.

### Before you install the Remote Desktop Services integration components

On the computer where you plan to install the components, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

### Install the Remote Desktop Services integration components

Use this procedure to install the Remote Desktop Services integration components on a client computer. If you install other Microsoft Dynamics AX components at the same time, the installation screens vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Specify a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Remote Desktop Services integration**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Ready to install** page, click **Install**.
8. After the installation is completed, click **Finish** to close the wizard.

## Troubleshoot installation issues with client components

This topic provides information that can help you troubleshoot issues that you may encounter when you install the Microsoft Dynamics AX client components.

### User not recognized error when you try to start the client

If you are not a user in the system, the client returns the following error: "User not recognized." An administrative user can add you to the system as a user, and then assign you to the appropriate security roles. The person who installed Microsoft Dynamics AX is the first administrative user. For more information, see the Microsoft Dynamics AX [Technical Library](http://go.microsoft.com/fwlink/?LinkId=182420) (<http://go.microsoft.com/fwlink/?LinkId=182420>) on TechNet.

### Open the client configuration utility

You can access the Microsoft Dynamics AX Configuration utility from the **Administrative Tools** menu. On computers that run Windows 7, **Administrative Tools** is an item in Control Panel.

### Connection with Application Object Server cannot be established

When you try to start the client, you may receive the following error: "Connection with the Application Object Server cannot be established."

This error can indicate that the **Microsoft Dynamics AX Object Server** service is not running. On the server computer for Application Object Server (AOS), verify the status of the service by using the **Services** control panel. (Click **Start** > **Administrative Tools** > **Services**.)

If you specified a shared configuration file when you installed the client, you might receive this error the first time that you start the client. To resolve this issue, click **OK** to close the client, and then restart the client.

## Install developer tools

---

The topics in this section provide information about how to install the developer tools.

Use the developer tools to customize Microsoft Dynamics AX. For example, you can use the developer tools to create customizations or extensions to Enterprise Portal for Microsoft Dynamics AX, and to create advanced production reports by using Microsoft SQL Server Reporting Services. The developer tools include the debugger, Microsoft Visual Studio Tools, and the Trace Parser.

The following topics are included in this section:

- [Install the debugger](#)
- [Install Visual Studio Tools](#)
- [Install the Trace Parser](#)
- [Troubleshoot installation issues with the developer tools](#)

# Install the debugger

The debugger tool provides debugging capabilities for X++ developers. The debugger tool communicates with the Microsoft Dynamics AX client, .NET Business Connector, or batch jobs that run on the Microsoft Dynamics AX server.

### **Note:**

To use the Help documentation for the debugger, the Microsoft Dynamics AX client must also be installed.

## Before you install the debugger

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

## Install the debugger

Use this procedure to install the debugger. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Debugger**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
9. On the **Ready to install** page, click **Install**.
10. After the installation is completed, click **Finish** to close the wizard.

## After you install the debugger

To use the debugger, users must belong to the **Microsoft Dynamics AX Debugging Users** local group on the computer. The person who installed the debugger is automatically added to this group.

## Install Visual Studio Tools

Visual Studio Tools integrate the development of Microsoft Dynamics AX with Microsoft Visual Studio. Developers can use these tools to create managed code that accesses X++ objects. Developers can also use the tools to create or modify controls for Enterprise Portal for Microsoft Dynamics AX and reports for Microsoft SQL Server Reporting Services. For more information about Visual Studio Tools, see [Visual Studio Development for Microsoft Dynamics AX](http://msdn.microsoft.com/library/3b2cfb0f-4211-42ca-a514-55af7ff11dcd(AX.60).aspx) ([http://msdn.microsoft.com/library/3b2cfb0f-4211-42ca-a514-55af7ff11dcd\(AX.60\).aspx](http://msdn.microsoft.com/library/3b2cfb0f-4211-42ca-a514-55af7ff11dcd(AX.60).aspx)).

### Note:

If you want to have access to all the development capabilities, we recommend that you install the Microsoft Dynamics AX client on the same computer as Visual Studio Tools.

## Before you install Visual Studio Tools

Complete the following tasks before you install Visual Studio Tools:

- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).  
For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).
- If Visual Studio is running, we recommend that you close it before you install Visual Studio Tools.

## Install Visual Studio Tools

Use this procedure to install Visual Studio Tools. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Visual Studio Tools**. When you select **Visual Studio Tools**, the **Management utilities** component is selected automatically. Click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want Visual Studio Tools to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.

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9. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.



**Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

10. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
11. On the **Ready to install** page, click **Install**.
12. After the installation is completed, click **Finish** to close the wizard.

## See Also

[Visual Studio Integration](http://msdn.microsoft.com/library/f7c6e32a-be2c-41ec-98ea-4a1e7ff9b342(AX.60).aspx) (http://msdn.microsoft.com/library/f7c6e32a-be2c-41ec-98ea-4a1e7ff9b342(AX.60).aspx)

## Install the Trace Parser

The Trace Parser consolidates information from multiple sources, such as RPC and SQL, to provide an integrated view of the application's performance at run time.

### Before you install the Trace Parser

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

### Install the Trace Parser

Use this procedure to install the Trace Parser. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Trace Parser**. When you select **Trace Parser**, **.NET Business Connector** is automatically selected. Click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Select a display language** page, select the language in which you want to run Microsoft Dynamics AX for the first time.



**Note:**

.NET Business Connector is a kind of Microsoft Dynamics AX client. Therefore, if .NET Business Connector is the first client that you install on a computer, Setup requires that you set the display language.

9. On the **Specify a location for configuration settings** page, specify whether you want .NET Business Connector to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.

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10. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.



### **Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

11. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by .NET Business Connector. Click **Next**.
12. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is completed, click **Finish** to close the wizard.

## Troubleshoot installation issues with the developer tools

This topic provides information that can help you troubleshoot issues that you may encounter when you install the developer tools for Microsoft Dynamics AX.

### Trace Parser installation fails

If you install Trace Parser at the same time as other Microsoft Dynamics AX components, the Trace Parser installation may fail. In the Setup log, you see the following error: "Component installation task stopped due to an error." To resolve this issue, uninstall and then reinstall the Trace Parser component.



## Install integration components

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The topics in this section provide information about how to install the integration components for Microsoft Dynamics AX.

Integration components enable Microsoft Dynamics AX to be integrated with external applications. The integration components include web services on Internet Information Services (IIS), .NET Business Connector, and the synchronization proxy and synchronization service for Microsoft Project Server.

The following topics are included in this section:

- [Install web services on IIS](#)
- [Install the .NET Business Connector](#)
- [Install the synchronization proxy for Microsoft Project Server](#)
- [Install the synchronization service for Microsoft Project Server](#)

## Install web services on IIS

This topic describes installation of the Microsoft Dynamics AX web services on Internet Information Services (IIS).

 **Note:**

Web services on IIS is an optional component. The Application Object Server (AOS) is the Windows Communication Foundation (WCF) service host for Microsoft Dynamics AX services. The AOS-hosted services are available to users and applications across an intranet. To consume services over the Internet, you must host services on Internet Information Services (IIS). Skip this procedure if you do not need to expose the Microsoft Dynamics AX services over the Internet.

### Before you install the Web services on IIS

Verify that the following steps are completed before you install the Microsoft Dynamics AX web services on IIS:

- On the computer where you will install the web services, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).



**Caution:**

Do not install web services on IIS on a server that is a network domain controller.

- Create a domain account will be used as the Business Connector proxy account. For more information, see [Create service accounts](#).
- Make sure that you have the required permissions to install the web services. For more information, see [Verify that you have the required permissions for installation](#).

### Install and configure the Web Server (IIS) Role

Use the following steps to verify that the Web Server role is configured properly:

1. When you ran the prerequisite validation utility in the preceding section, it configured the Web Server role. However, the prerequisite validation utility does not install the ASP.NET role service. Use the following steps to install the ASP.NET role service. For more information about role services, see [Available Role Services by Category](http://technet.microsoft.com/en-us/library/cc753473.aspx) (<http://technet.microsoft.com/en-us/library/cc753473.aspx>).
  - Start Server Manager. Expand the **Server Manager (computer\_name)** node. Right-click **Web Server (IIS)**, and then click **Add Role Services**.
  - On the **Select Role Services** dialog, expand the **Web Server (Installed) > Application Development (Installed)** node, and then select **ASP.NET**. Click **Next** and step through the wizard pages. Restart the server.

2. Create a website that Setup will use to install the Microsoft Dynamics AX web services. You can create a new website or use an existing one, such as Default Web Site on IIS. See the IIS documentation for instructions about how to create a new website.

**Tip:**

For ease of administration, we recommend that you create a new website before installing Microsoft Dynamics AX web services.

## Install the web services on IIS

Use this procedure to install the Microsoft Dynamics AX web services on IIS. If you are installing other Microsoft Dynamics AX components at the same time, the installation pages vary based on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial wizard pages.
3. If the setup support files have not yet been installed, the **Select a file location** page is displayed. The setup support files are required for installation. Provide a file location or accept the default location and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Web services on IIS**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where 32-bit versions of Microsoft Dynamics AX files should be installed and then click **Next**.
8. On the **Connect to an AOS instance** page, enter the name of the computer that is running the AOS instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the Web Services Description Language (WSDL) port for services. Click **Next**.

**Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on this computer reuse the existing AOS connection.

9. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account used by the .NET Business Connector. Click **Next**.
10. On the **Configure IIS for Web services** page, accept default values or provide information for the website, application pool, and virtual directory. Setup will create a virtual directory and an application pool for the Microsoft Dynamics AX web services under the selected website. The application pool will run as the .NET Business Connector proxy user that you entered in the previous step.

**Important:**

You must restart IIS after Setup installs the web services. Select **Restart IIS after installation is complete** to automatically restart IIS.

Click **Next** to continue.

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11. On the **Specify an AOS account** page, provide the service accounts for the AOS instances that you will use with web services on IIS. For more information about AOS accounts, see, [Create service accounts](#).  
Click **Next** to continue.
12. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is complete, click **Finish** to close the wizard.

## After you install the Web services on IIS

This section provides instructions for how to configure and test web services on IIS.

### Configure IIS

For IIS 7.0, use the following steps to configure the application pool that is associated with Microsoft Dynamics AX web services. This step is required to set the correct version of the .NET Framework.

1. In Server Manager, Expand the **Server Manager > Roles > Web Server (IIS)** node and then click **Internet Information Services (IIS) Manager**.
2. In the **Connections** pane, expand the node for your server name and then click **Application Pools**.
3. In the **Application Pools** pane, right-click the application pool that is associated with the Microsoft Dynamics AX web services and click **Basic Settings...**
4. In the **Edit Application Pool** dialog box, select .NET Framework 4.0 or a later version, such as V4.0.30319. Select **Integrated** from the **Managed pipeline mode** list. Notice that the **Start application pool immediately** option is selected. Click **OK** to return to Server Manager.
5. Restart the server.

### Verify the website registration in Microsoft Dynamics AX

Use the following steps to register the website in Microsoft Dynamics AX.

1. Click **System administration > Setup > Services and Application Integration Framework > Web sites**.
2. On the **Web sites** form, verify that the website was created and has appropriate values for the **Name**, **Virtual directory share path**, **Description**, and **URL** fields. The default name is *computername-Default Web Site-MicrosoftDynamicsAXAif60*. The default URL is *http://computername:8101/MicrosoftDynamicsAXAif60*. The default share path for the virtual directory is *\\computername\MicrosoftDynamicsAXAif60*.
3. Click **Validate**. Verify that the Infolog dialog confirms:
  - The website is configured properly.
  - You can access the computer and the website.

For information about how to add or configure websites, see [Add or configure websites](http://technet.microsoft.com/library/5b1f0280-ee34-45b7-a688-298f00163715(AX.60).aspx) (http://technet.microsoft.com/library/5b1f0280-ee34-45b7-a688-298f00163715(AX.60).aspx).

 **Note:**

When you install web services on IIS, a record for the new website is added to AifWebsites table. If you uninstall web services on IIS, this record is not deleted from the table. This record may cause a warning to be displayed if you reinstall web services on IIS. You can manually delete the record from the AifWebsites table or simply ignore the warning.

### **Create an enhanced integration port**

For information about managing integration ports, see [Services and AIF operations](http://technet.microsoft.com/library/72e9566c-ce49-4321-a80f-5a9455ad9108(AX.60).aspx) (http://technet.microsoft.com/library/72e9566c-ce49-4321-a80f-5a9455ad9108(AX.60).aspx).

### **See Also**

[Walkthrough: Exchanging documents by using the HTTP adapter](http://technet.microsoft.com/library/416206cc-cdac-47be-9897-4096dd387616(AX.60).aspx) (http://technet.microsoft.com/library/416206cc-cdac-47be-9897-4096dd387616(AX.60).aspx)

## Install the .NET Business Connector

The .NET Business Connector for Microsoft Dynamics AX enables applications to interact with instances of Application Object Server (AOS). .NET Business Connector provides a set of managed classes that make it easier for applications to access X++ functionality.

The .NET Business Connector is installed automatically for Microsoft Dynamics AX components that require it. The .NET Business Connector can also be installed as a stand-alone component and used to develop third-party applications that can be integrated with Microsoft Dynamics AX. You must install .NET Business Connector on each computer where the integrated application is installed. The application then communicates with AOS through the instance of .NET Business Connector on the local computer.

Some components require that .NET Business Connector be configured to connect to Microsoft Dynamics AX by using a proxy account. When a proxy account is used, .NET Business Connector can connect to an AOS instance on behalf of Microsoft Dynamics AX users. For more information, see [Specify the .NET Business Connector proxy account](http://technet.microsoft.com/library/3e46dc0a-2ff4-4a06-ae61-041e52dcc774(AX.60).aspx) ([http://technet.microsoft.com/library/3e46dc0a-2ff4-4a06-ae61-041e52dcc774\(AX.60\).aspx](http://technet.microsoft.com/library/3e46dc0a-2ff4-4a06-ae61-041e52dcc774(AX.60).aspx)).

When you install .NET Business Connector, the Microsoft Dynamics AX Configuration utility is also installed.

### **Note:**

Windows Communication Foundation (WCF) services are the preferred method for integration with Microsoft Dynamics AX. The .NET Business Connector installation is provided for backward compatibility.

## Before you install .NET Business Connector

Complete the following tasks before you install .NET Business Connector.

- On the computer where you plan to install .NET Business Connector, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).  
For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).
- Install the Microsoft Dynamics AX databases and AOS in the environment. Alternatively, you can install these components when you install .NET Business Connector.

## Install .NET Business Connector

Use this procedure to install .NET Business Connector. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.

3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **.NET Business Connector**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Select a display language** page, select the language in which you want to run Microsoft Dynamics AX for the first time.

 **Note:**

.NET Business Connector is a kind of Microsoft Dynamics AX client. Therefore, if .NET Business Connector is the first client that you install on a computer, Setup requires that you set the display language.

9. On the **Specify a location for configuration settings** page, specify whether you want .NET Business Connector to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.
10. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

11. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
12. On the **Ready to install** page, click **Install**.
13. After the installation is completed, click **Finish** to close the wizard.

## Install the synchronization proxy for Microsoft Project Server

The synchronization proxy for Microsoft Project helps support the synchronization of project data in Microsoft Dynamics AX with data in Microsoft Project Server.

To use this functionality, you must install both the synchronization proxy and the synchronization service. You can install the synchronization service and the synchronization proxy at the same time. This topic explains only how to install the synchronization proxy.

The synchronization proxy uses Message Queuing to connect to Project Server and Microsoft Dynamics AX. You must install the synchronization proxy on the same computer as Project Server.

### Before you install the synchronization proxy

Complete the following tasks before you install the synchronization proxy:

- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).  
For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).
- Verify that you have the permissions that are required to install the synchronization proxy. For more information, see [Verify that you have the required permissions for installation](#).

### Install the synchronization proxy

Use this procedure to install the synchronization proxy. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Synchronization proxy for Microsoft Project Server**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.



8. On the **Specify a location for configuration settings** page, specify whether you want the synchronization proxy to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by .NET Business Connector. Click **Next**.
11. On the **Synchronization proxy/Message Queuing: Enter the service account information** page, enter the domain user account for the synchronization service, and then click **Next**.
12. On the **Connect to Microsoft Project Server** page, enter the name of the Project Server and the name of the database that is used for Project Server reporting. In the **Project web access URL** box, enter the URL of the website that is used to access Project Server.

 **Note:**

If the synchronization proxy must connect to multiple URLs for Project Server, use the first URL when you install the synchronization proxy. However, you must then uninstall and reinstall the synchronization proxy. When you reinstall the synchronization proxy, use a different URL. Uninstalling the proxy does not affect the proxy's ability to synchronize with URLs that were specified during previous installations.

Click **Next**.

13. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
14. On the **Ready to install** page, click **Install**.
15. After the installation is completed, click **Finish** to close the wizard.

## Install the synchronization service for Microsoft Project Server

The Microsoft Project synchronization service synchronizes project data in Microsoft Dynamics AX with data in Microsoft Project Server.

To use this functionality, you must install both the synchronization proxy and the synchronization service. You can install the synchronization service and the synchronization proxy at the same time. This topic explains only how to install the synchronization service.

If Project Server uses a Microsoft Database Engine (MSDE) database or a Microsoft SQL Server Express Edition database, install the synchronization service on the computer that runs Project Server.

When you install the synchronization service, Setup configures a message queue for the service. Setup also installs and starts the synchronization service.

### Before you install the synchronization service

Complete the following tasks before you install the synchronization service:

- On the computer where you are installing this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

- Install the Microsoft Dynamics AX databases and Application Object Server (AOS) in the environment.
- Configure a domain account that the synchronization service can run as. For more information, see [Create service accounts](#).

### Install the synchronization service

Use the following procedure to install the synchronization service. If you install other Microsoft Dynamics AX components at the same time, the installation screens vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Synchronization service for Microsoft Project Server**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.

7. If you are installing the synchronization service on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want 32-bit versions of Microsoft Dynamics AX files to be installed, and then click **Next**.
8. On the **Specify a location for configuration settings** page, specify whether you want the synchronization service to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.
9. On the **Connect to an AOS instance** page, enter the name of the computer that runs the AOS instance that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

 **Note:**

If you entered AOS connection information for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account that is used by .NET Business Connector. Click **Next**.
11. On the **Enter the password for the service account** page, enter the account information for the synchronization service. Click **Next**.
12. On the **Connect to a message queue** page, specify whether you want to create a new message queue or connect to an existing message queue.
  - If you want to create a new queue, Setup creates a private queue by default. Private queues can be accessed only from the local computer. Select **Make this a public queue** to allow other computers to access the queue.
  - If you want to connect to an existing queue, enter the queue address.Click **Next**.
13. On the **Specify service accounts for synchronization message queues** page, enter the service accounts that communicate through message queues. You must provide a domain account that is used by the Project Server eventing service, and the service account of at least one AOS instance. Otherwise, Setup cannot configure the correct permissions. Click **Next**.
14. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
15. On the **Ready to install** page, click **Install**.
16. After the installation is completed, click **Finish** to close the wizard.

## Install management utilities

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Management utilities let you configure and manage Microsoft Dynamics AX components and artifacts. Use these utilities to deploy artifacts, such as reports and Web controls, from the metadata store.

### Before you install management utilities

- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).  
For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).
- Make sure that the Windows Update service is running on the computer where you will install this component.

### Install management utilities

Use this procedure to install the Microsoft Dynamics AX management utilities. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Management utilities**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.
8. On the **Specify client configuration options** page, specify whether you want management utilities to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, enter the network location of the file. Click **Next**.

9. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.



**Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

10. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
11. On the **Ready to install** page, click **Install**.
12. After the installation is complete, click **Finish** to close the wizard.

## Install retail components

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The topics in this section provide information about how to install the retail components for Microsoft Dynamics AX.

 **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2.

Retail provides mid-market and large retailers a complete solution for the head office and point of sale (POS). Retail can help retailers increase financial returns, improve service, manage growth, and streamline efficiencies. Retail consists of several components that are typically distributed across multiple computers and locations.

 **Important:**

To use the retail components in Microsoft Dynamics AX 2012 Feature Pack, you must select the **Extensions** model file when you install the Microsoft Dynamics AX database. For more information about how to install model files, see [Install the Microsoft Dynamics AX databases](#).

The following topics are included in this section:

- [Install Retail Headquarters](#)
- [Install Retail POS \(point of sale\)](#)
- [Install Commerce Data Exchange: Synch Service \(Retail Store Connect\)](#)
- [Install Commerce Data Exchange: Real-time Service \(Retail Transaction Service\)](#)
- [Install the Retail Store Database Utility](#)
- [Install Retail SDK \(Retail POS Plug-ins\)](#)
- [Install Retail Online Channel](#)

## Install Retail Headquarters

The Retail Headquarters component installs components that are necessary to use Retail functionality in Microsoft Dynamics AX.

### **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2.

When you install Retail Headquarters, Retail Scheduler is also installed. Retail Scheduler coordinates communication between Microsoft Dynamics AX and stores.

At the head office location, install this component on the computer that runs Microsoft Dynamics AX AOS.

## Before you install Retail Headquarters

- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

- Before you install Retail Headquarters, we recommend that you install the AOS, Microsoft Dynamics AX clients, the Microsoft Dynamics AX databases with all required models, and the .NET Business Connector.

## Install Retail Headquarters

Use this procedure to install Retail Headquarters. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. On the **Modify Microsoft Dynamics AX installation** page, click **Add or modify components**, and then click **Next**.
4. On the **Add or modify components** page, select **Retail Headquarters**, and then click **Next**.
5. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
6. On the **Ready to install** page, click **Install**.
7. After the installation is completed, click **Finish** to close the wizard.

## Install Retail POS (point of sale)

Retail POS is a component that is required for the day-to-day operation of Retail at a store. When you install the Retail POS component, the Retail Salt Utility is also installed. The Retail Salt Utility provides extra encryption for the passwords and credentials that are associated with the Retail system.

 **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2.

At the store, install this component on each register computer. If you plan to use a stand-alone database server at the store, you must also install Retail POS on the database server, even if Retail POS will not be used on that computer. This step is required to set up the database. Additionally, install Retail POS on a communications server if that computer will also be used to process transactions.

 **Note:**

If you are upgrading Retail POS, you should review [Deploy Retail POS](http://technet.microsoft.com/library/6e7aa873-c07a-4936-8b93-a00c53548767(AX.60).aspx) ([http://technet.microsoft.com/library/6e7aa873-c07a-4936-8b93-a00c53548767\(AX.60\).aspx](http://technet.microsoft.com/library/6e7aa873-c07a-4936-8b93-a00c53548767(AX.60).aspx)).

## Before you install Retail POS

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

## Install Retail POS

Use this procedure to install Retail POS. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Retail POS**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Ready to install** page, click **Install**.
8. After the installation is completed, click **Finish** to close the wizard.



## After you install Retail POS

For information about how to configure Retail POS, see [Deploy Retail POS](http://technet.microsoft.com/library/6e7aa873-c07a-4936-8b93-a00c53548767(AX.60).aspx) (http://technet.microsoft.com/library/6e7aa873-c07a-4936-8b93-a00c53548767(AX.60).aspx) and [Setting up Retail POS](http://technet.microsoft.com/library/cc3960c3-c226-40ce-a484-0119bcb2cfd4(AX.60).aspx) (http://technet.microsoft.com/library/cc3960c3-c226-40ce-a484-0119bcb2cfd4(AX.60).aspx).

## Install Commerce Data Exchange: Synch Service (Retail Store Connect)

Commerce Data Exchange: Synch Service is a service that shares data among retail components. These components include the head office, stores, and individual point of sale (POS) terminals. When you install Synch Service, the Retail Salt Utility and Retail Scheduler are also installed. The Retail Salt Utility provides extra encryption for the passwords and credentials that are associated with the Retail system. Retail Scheduler is used to manage the distribution of data between the head office and the stores.

 **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2. In Microsoft Dynamics AX 2012 Feature Pack, Synch Service is called Retail Store Connect.

### Before you install Synch Service

- Determine how many instances of Synch Service you will install, and on which computers.  
In a basic deployment of Retail, one instance of Synch Service is installed at the head office, and one instance is installed at each store. In this scenario, the head-office instance communicates with AOS, and a store instance communicates with the store database.

Operations in a large organization may scale more efficiently if you install multiple Synch Service instances at each site, either on a single server or on multiple servers. For more information, see [Run multiple instances of Synch Service](http://technet.microsoft.com/library/07c47aa8-3be8-4b63-b2d6-5d942b03a8be(AX.60).aspx) ([http://technet.microsoft.com/library/07c47aa8-3be8-4b63-b2d6-5d942b03a8be\(AX.60\).aspx](http://technet.microsoft.com/library/07c47aa8-3be8-4b63-b2d6-5d942b03a8be(AX.60).aspx)).

 **Caution:**

Although a single instance of Synch Service can manage all communications for the organization, excessive load or network latency may degrade performance.

If Retail Scheduler will be used on a Microsoft Dynamics AX client computer to run jobs and send data to stores, install Synch Service on the client system.

- Determine whether you will use network load balancing (NLB) and IPsec. Retail supports network load balancing (NLB) for data coming from the store to Microsoft Dynamics AX. NLB is not supported for outbound data. If you are using multiple instances of Synch Service, NLB can distribute incoming data among them, but all instances must have the same service name. If IPsec is enabled, NLB is not recommended.
- Select a service account for the Synch Service service. For information about the requirements for service accounts, see [Create service accounts](#).
- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

## Install Synch Service

Use this procedure to install Synch Service. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Synch Service**, and then click **Next**.
6. On the **Configure Commerce Data Exchange: Synch Service** page, select the checkbox if you want to configure Synch Service.
  - To create a message database for Synch Service, enter the name of the server where you want to create the database, and then enter a name for the new database.
  - To configure the service account for Synch Service, enter a user name and password.
7. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
8. On the **Ready to install** page, click **Install**.
9. After the installation is completed, click **Finish** to close the wizard.

## Install Commerce Data Exchange: Real-time Service (Retail Transaction Service)

Commerce Data Exchange: Real-time Service is an integrated service that provides real-time communication between Microsoft Dynamics AX and individual point of sale (POS) terminals.

When you install this component, the Retail Salt Utility and the .NET Business Connector are also installed. The Retail Salt Utility provides extra encryption for the passwords and credentials that are associated with the Retail system. The .NET Business Connector enables applications to interact with instances of Application Object Server (AOS).

### **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2. In Microsoft Dynamics AX 2012 Feature Pack, Real-time Service is called Retail Transaction Service.

At the head office, install Real-time Service on the communications server.

### Before you install Real-time Service

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

### Install Real-time Service

Use this procedure to install Real-time Service. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Real-time Service**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. If you are installing on a 64-bit operating system, the **Select a file location** page is displayed. Select the location where you want to install 32-bit versions of Microsoft Dynamics AX files, and then click **Next**.

8. On the **Select a display language** page, select the language in which you want to run Microsoft Dynamics AX for the first time.

**Note:**

.NET Business Connector is a kind of Microsoft Dynamics AX client. Therefore, if .NET Business Connector is the first client that you install on a computer, Setup requires that you set the display language.

9. On the **Specify a location for configuration settings** page, specify whether you want .NET Business Connector to access configuration information from the registry on the local computer or from a shared configuration file. If you want to use a shared configuration file, you must enter the network location of the file. Click **Next**.
10. On the **Connect to an AOS instance** page, enter the name of the computer that runs the instance of Application Object Server (AOS) that you want to connect to. You can optionally specify the name of the AOS instance, the TCP/IP port number, and the WSDL port for services. Click **Next**.

**Note:**

If you entered information about the AOS connection for other Microsoft Dynamics AX components that are installed on this computer, this page is not displayed. Subsequent installations on the same computer reuse the existing AOS connection.

11. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account used by the .NET Business Connector. Click **Next**.
12. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
13. On the **Ready to install** page, click **Install**.
14. After the installation is completed, click **Finish** to close the wizard.

## After you install Real-time Service

After you install Real-time Service, you must set up Real-time Service profiles and assign them to registers and online stores. For more information, see [Set up a Real-time Service profile](#) ([http://technet.microsoft.com/library/4abdd0b8-813d-4216-8bae-0b66de66e5d3\(AX.60\).aspx](http://technet.microsoft.com/library/4abdd0b8-813d-4216-8bae-0b66de66e5d3(AX.60).aspx)).

## Install the Retail Store Database Utility

The Retail Store Database Utility is used to create and configure an offline database, and to create and identify a store database. The utility is also used to create a configuration file that is used to identify point of sale (POS) registers.

 **Note:**

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2.

At the store, install the Retail Store Database Utility on computers where you must create a store database. A store database may be created either on a stand-alone database server or on a POS computer.

### Before you install the Retail Store Database Utility

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

### Install the Retail Store Database Utility

Use this procedure to install the Retail Store Database Utility. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Retail Store Database Utility**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Configure Retail store databases and POS** page, select the check box if you want to create store databases and associate them with a POS system.
  - To create a store database, enter the name of the server where you want to create the database, and then enter a name for the new database.

When creating a shared store database, do not enter anything in the **Offline database name** or **Offline server name** fields. After you have created the shared store database, you can open the Retail Store Database Utility to designate this database as an offline database, but you cannot perform both actions at the same time.

- To create an offline database, enter the name of the server where you want to create the database, and then enter a name for the new database.
- Enter POS identification information.

 **Important:**

Dummy values are required in the **Identification** fields because of a known issue.

In the **Store ID** field, type the ID of the store that the POS terminal is associated with. The store record does not need to be created before you complete this step. However, the ID must match later when the record is created and the profile is linked.

In the **Terminal ID** field, type a unique ID for the POS terminal. The terminal ID that you enter must be listed in the POS terminals form.

In the **Company** field, type the applicable company code.

8. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
9. On the **Ready to install** page, click **Install**.
10. After the installation is completed, click **Finish** to close the wizard.

## After you install the Retail Store Database Utility

For information about how to create databases by using the Retail Store Database Utility, see [Create a store database or an offline database](http://technet.microsoft.com/library/99ba8d75-d3ef-457d-a714-95dd894fccc5(AX.60).aspx) ([http://technet.microsoft.com/library/99ba8d75-d3ef-457d-a714-95dd894fccc5\(AX.60\).aspx](http://technet.microsoft.com/library/99ba8d75-d3ef-457d-a714-95dd894fccc5(AX.60).aspx)).

## Install Retail SDK (Retail POS Plug-ins)

The Retail Software Development Kit (SDK) includes sample code and templates that can be used to customize Retail for Microsoft Dynamics AX. For information about how to customize your Retail implementation, see the [Microsoft Dynamics AX developer documentation](http://msdn.microsoft.com/en-us/library/aa155304.aspx) (<http://msdn.microsoft.com/en-us/library/aa155304.aspx>) on MSDN.

### Note:

Retail components are available only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2. In Microsoft Dynamics AX 2012 Feature Pack, the Retail SDK component is called Retail POS Plug-ins.

## Before you install Retail SDK

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

## Install Retail SDK

Use this procedure to install Retail SDK. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Retail SDK**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Ready to install** page, click **Install**.
8. After the installation is completed, click **Finish** to close the wizard.



## Install Retail Online Channel

Retail Online Channel includes components that are needed to provision an online sales channel using Microsoft SharePoint products. This component allows you to integrate data from Microsoft Dynamics AX into the SharePoint site. You can also administer the online channel by using the Microsoft Dynamics AX client.

**Note:**

Retail Online Channel is available only with Microsoft Dynamics AX 2012 R2.

### Before you install Retail Online Channel

On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).

For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](http://go.microsoft.com/fwlink/?LinkId=165377) (http://go.microsoft.com/fwlink/?LinkId=165377).

## Install Retail Online Channel

Use this procedure to install Retail Online Channel. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Select installation type** page, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Retail Online Channel**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
7. On the **Ready to install** page, click **Install**.
8. After the installation is completed, click **Finish** to close the wizard.

## Install the RapidStart Connector

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The Rapid Start Connector for Microsoft Dynamics AX enables RapidStart Services for Microsoft Dynamics ERP to communicate with an on-premise Microsoft Dynamics AX implementation.

 **Note:**

The RapidStart Connector is available through the Microsoft Dynamics AX Setup wizard only with Microsoft Dynamics AX 2012 Feature Pack and Microsoft Dynamics AX 2012 R2.

RapidStart Services is an online service that provides a questionnaire-based framework to configure and set up Microsoft Dynamics ERP products. This service is extensible and customizable to fit the business processes that must be configured. For more information about RapidStart Services, see <http://www.dynamicsonline.com>.

Install the RapidStart Connector on the server where the Application Object Server (AOS) is installed.

## Before you install the RapidStart Connector

- Register your organization for RapidStart Services. Contact your partner or register yourself through <http://www.dynamicsonline.com>.
- On the computer where you plan to install this component, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#).  
For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).
- Create a domain account to use for the RapidStart Connector Windows service. For more information, see [Create service accounts](#).

## Install the RapidStart Connector

Use this procedure to install the RapidStart Connector. If you install other Microsoft Dynamics AX components at the same time, the installation pages vary, depending on the components that you are installing.

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. If the Setup Support files have not yet been installed on this computer, the **Select a file location** page is displayed. The Setup Support files are required for installation. Provide a file location or accept the default location, and then click **Next**. On the **Ready to install** page, click **Install**.
4. On the **Modify Microsoft Dynamics AX installation** page, click **Add or modify components**, and then click **Next**.
5. On the **Add or modify components** page, select **RapidStart Connector**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.

7. On the **Microsoft Dynamics ERP RapidStart Connector** page, enter the domain user account for the RapidStart Connector Windows service, and then click **Next**.
8. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
9. On the **Ready to install** page, click **Install**.
10. After the installation is completed, click **Finish** to close the wizard.

## After you install the RapidStart Connector

Additional configuration is required after you install the RapidStart Connector. For more information, see [Configure Projects for Microsoft Dynamics AX ERP - RapidStart Services](http://go.microsoft.com/fwlink/?LinkId=238738) (<http://go.microsoft.com/fwlink/?LinkId=238738>).

For information about how to use RapidStart Services, see [Help for Microsoft Dynamics ERP RapidStart Services users](http://go.microsoft.com/fwlink/?LinkId=225970) (<http://go.microsoft.com/fwlink/?LinkId=225970>).

# Perform a single-computer installation of Microsoft Dynamics AX

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You can set up Microsoft Dynamics AX on a single computer to create a development, test, pilot, or trial environment.

When you select a single-computer installation, the complete Microsoft Dynamics AX system is automatically installed and configured on the local computer.

The topics in this section provide information about how to install Microsoft Dynamics AX on a single computer. The following topics are included:

- [Perform a single-computer installation](#)
- [Considerations for installing multiple instances on a computer](#)

## Perform a single-computer installation

Use the information in this topic to perform a single-computer installation of Microsoft Dynamics AX. Use this type of installation to install a complete Microsoft Dynamics AX system on a single computer for development, demonstration, or testing. For more information about the components that are included in a single-computer installation, see [Installation types](#).

Setup uses default settings to configure all components. User names and passwords are the only input that is required. For more information about individual components, see the corresponding topics in this guide.

### **Important:**

We do not recommend that you perform a single-computer installation in a production environment. Use this type of installation only for development and testing.

## Before you perform a single-computer installation

Prerequisites for all components that are included in the single-server installation must be installed before you can use this type of installation. On the computer where you plan to perform the installation, run the prerequisite validation utility to verify that system requirements have been met. For information about how to run the prerequisite validation utility, see [Check prerequisites](#). For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements](#) (<http://go.microsoft.com/fwlink/?LinkId=165377>).

### **Note:**

Reports and online analytical processing (OLAP) cubes may display errors if the computer is not connected to a domain.

## Perform a single-computer installation

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the first wizard pages.
3. On the **Select installation type** page, click **Single-computer installation**, and then click **Next**.
4. On the **Prerequisite validation results** page, resolve any errors. For more information about how to resolve prerequisite errors, see [Check prerequisites](#). When no errors remain, click **Next**.
5. On the **Specify an AOS account** page, select whether you want to use the Network Service account of the local computer or a domain account to run the Application Object Server (AOS) service. Click **Next**.
6. On the **Specify Business Connector proxy account information** page, enter the name and password for the proxy account that is used for .NET Business Connector. Click **Next**.
7. On the **Prerequisite validation results** page, resolve any errors. When no errors remain, click **Next**.
8. On the **Ready to install** page, click **Install**.
9. After the installation is completed, click **Finish** to close the wizard.

**Note:**

If you install Help Server at the same time as other Microsoft Dynamics AX components, the Help Server installation may fail. In the Setup log, you see the following error: "Component installation task stopped due to an error." To resolve this issue, uninstall and then reinstall the Help Server component.

## Considerations for installing multiple instances on a computer

In a single environment, you can install multiple instances of Application Object Server (AOS) and the Microsoft Dynamics AX database.

You can install multiple instances of Microsoft Dynamics AX components on separate computers or on the same computer. AOS instances and databases cannot be shared among instances of Microsoft Dynamics AX.

Multiple Microsoft Dynamics AX instances are primarily used in development environments that support multiple customers.

 **Caution:**

We do not recommend or support the installation of multiple versions of Microsoft Dynamics AX components on the same computer in a production environment.

The following table lists the considerations when you install a second instance of a component.

Component	Considerations
AOS	<p>Each AOS instance is automatically assigned a number between 01 and 99. This number is displayed in the <b>Programs and Features</b> item in Control Panel.</p> <p>We recommend that you create a group in Active Directory Domain Services to manage permissions for the AOS accounts. For more information, see <a href="#">Install an Application Object Server (AOS) instance</a>.</p>
Database	<p>During initialization, you can import existing data into the database.</p>
Components that require .NET Business Connector	<p>You can install only one instance of .NET Business Connector on a computer. In an environment that has multiple AOS instances, use the Microsoft Dynamics AX Configuration utility to make sure that the instance of .NET Business Connector on the local computer connects to the correct AOS instance for the component that you are installing.</p> <p>In the utility, in the <b>Configuration Target</b> list, select <b>Business Connector (non-interactive use only)</b>. On the <b>Connection</b> tab, verify that the correct AOS instance is displayed.</p> <p>For more information about how to use the Microsoft Dynamics AX Configuration utility, click the <b>Help</b> button in the utility.</p>

Component	Considerations
Reporting Services extensions	<p>You can install multiple instances of Microsoft SQL Server Reporting Services on the same computer. In this kind of deployment environment, each instance of Reporting Services is connected to an independent Microsoft Dynamics AX installation. You may want to install multiple instances of Reporting Services on the same computer to support development and production installations of Microsoft Dynamics AX, or to support multiple production installations of Microsoft Dynamics AX.</p> <p>For information about how to install multiple instances of Reporting Services, see <a href="http://technet.microsoft.com/library/0aca4bf4-aac9-4acd-9323-7547a8583c9f(AX.60).aspx">Install multiple instances of Reporting Services on the same computer (for use with Microsoft Dynamics AX)</a> (<a href="http://technet.microsoft.com/library/0aca4bf4-aac9-4acd-9323-7547a8583c9f(AX.60).aspx">http://technet.microsoft.com/library/0aca4bf4-aac9-4acd-9323-7547a8583c9f(AX.60).aspx</a>).</p>
Enterprise Portal	<p>You can install multiple Enterprise Portal instances on the same computer. Portals can be configured to access the same or different Microsoft Dynamics AX AOS instances. For more information, see <a href="#">Install multiple Enterprise Portals on the same server</a>.</p>

## Install Microsoft Dynamics AX in silent mode

When you run the Setup wizard, Setup runs in interactive mode. In other words, a graphical user interface (GUI) prompts you for the required information. Alternatively, you can run Setup in silent mode. When Setup runs in silent mode, no GUI is displayed. Instead, you supply the required information at the command prompt or in a parameter file. You can install any Microsoft Dynamics AX component in silent mode.

Use the following topics to run Setup in silent mode.

Topic	Description
<a href="#">Run Setup in silent mode</a>	Provides the procedures to run the Setup wizard without the graphical user interface.
<a href="http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94(AX.60).aspx">Setup parameters reference</a> ( <a href="http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94(AX.60).aspx">http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94(AX.60).aspx</a> )	Lists the parameters that can be used for silent installation. This topic is available on TechNet.

## Run Setup in silent mode

When you run the Setup wizard, Setup runs in interactive mode. In other words, a graphical user interface (GUI) prompts you for the required information. Alternatively, you can run Setup in silent mode. When Setup runs in silent mode, no GUI is displayed. Instead, you supply the required information at the command prompt or in a parameter file. You can install any Microsoft Dynamics AX component in silent mode.

### Note:

A silent installation is especially useful when you deploy multiple clients at the same time. For more information, see [Mass deployment of the Microsoft Dynamics AX Windows client](#).

## Determine which parameters to use

The same parameters are available whether you enter them at the command prompt or create a parameter file.

To determine which Microsoft Dynamics AX Setup parameters you want to use, we recommend that you review the example parameter file that is included on the Microsoft Dynamics AX DVD. The file is located at *<Path to DVD or shared directory>\Support\ExampleParmFile.txt*. For more information about individual parameters, see the [Setup parameters reference](http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94(AX.60).aspx) ([http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94\(AX.60\).aspx](http://technet.microsoft.com/library/474f9d72-e1e5-433a-840e-d9eb00753e94(AX.60).aspx)) on TechNet.

Microsoft Dynamics AX Setup can configure some required prerequisites, such as operating system features and roles and redistributable components that are on the Microsoft Dynamics AX installation media. If you want Setup to automatically configure these prerequisites, include the parameter *ConfigurePrerequisites=1*.



You can install other prerequisites silently by running the individual programs from the command line. To determine the command-line parameters that you want to use, we recommend that you run the stand-alone prerequisite validation utility on a representative client. When you use the utility to configure prerequisites, the log file indicates the commands that were used. By default, the log file is located at `<Drive>\Users\<UserName>\AppData\Local\Microsoft Dynamics AX 6\Prerequisite Utility Logs\Date Time\Log.txt`.

## Specify installation parameters at the command prompt

Use the following procedure to run the installation by entering parameters at the command prompt.

1. Open a Command Prompt window.
2. At the command prompt, type the following command:  
`<Path to DVD or shared directory>\Setup.exe parameter1="value" parameter2="value"`

When you use multiple parameters, insert a single space between parameters.

### **Warning:**

If you enter duplicate parameters, Setup fails silently.

3. After you have listed all parameters, press ENTER.

## Specify installation parameters by using a parameter file

Use the following procedure to run the installation by specifying a parameter file at the command prompt.

1. Create a text file that lists the appropriate installation parameters and their values. In the parameter file, the *Name=Value* combination for each parameter must be on a separate line.

### **Warning:**

If you enter duplicate parameters, Setup fails silently.

Do not include double quotation marks in parameter files. Because the carriage return is used as a delimiter in a parameter file, values that usually require double quotation marks do not require them here.

To prevent a line in a parameter file from being read, type a number sign (#) before the line. The line is now treated as a comment instead of a command or parameter.


2. Open a Command Prompt window.
3. At the command prompt, type the following command:  
`<Path to DVD or shared directory>\Setup.exe ParmFile=<path of file>\FileName.txt`

The path can be fully qualified or relative to the location of the Setup.exe file. Relative paths can include upward qualifiers such as `..\..\`.

4. Press ENTER.

# Firewall settings for Microsoft Dynamics AX components

If you use Windows Firewall to help protect your computers, Microsoft Dynamics AX components require the settings in the following table. For more information about Windows Firewall, see the Windows documentation.

Component	Computer	Firewall setting	Notes
Setup	Any	Allow outbound HTTP connections.	To access the documentation that is available from the Setup wizard, you must be able to connect to the Internet from the computer where you are running Setup.
Databases	Database server	Exclude the port that is used by Microsoft SQL Server. By default, SQL Server uses port 1433.	For more information, see the SQL Server documentation.
Application Object Server (AOS)	AOS server	<ul style="list-style-type: none"> <li>Exclude the TCP/IP port that is used by the AOS instance. By default, AOS uses port 2712. Setup automatically creates the inbound rule "Dynamics AX 6.0 –MicrosoftDynamicsAX (RPC)" for the TCP/IP port.</li> <li>Exclude the services WSDL port that is used by the AOS instance. By default, AOS uses port 8101. Setup automatically creates the inbound rule "Dynamics AX 6.0 –MicrosoftDynamicsAX (WSDL)" for the WSDL port.</li> <li>Exclude the services endpoint port that is used by the AOS instance. By default, AOS uses port 8201. Setup automatically creates the inbound rule "Dynamics AX 6.0 –MicrosoftDynamicsAX (NetTCP)" for the services endpoint port.</li> </ul>	<p>Windows Firewall must be enabled on the computer. Each AOS instance must use a different port number.</p> <p> <b>Note:</b> By default, every time that you install an additional AOS instance on a computer, the TCP/IP port number and the services endpoint port numbers are incremented by 1. For example, by default, the second AOS instance on a computer is assigned to TCP/IP port 2713.</p>

Component	Computer	Firewall setting	Notes
Client	Client workstation	Exclude Ax32.exe.	The client uses a TCP port to connect to the AOS instance.
Microsoft SQL Server Reporting Services extensions	Report server	Exclude the port that is used by Reporting Services virtual directories, if Reporting Services uses a port other than port 80.	If you are installing Reporting Services extensions in a perimeter network, you may need to add a firewall policy that enables you to connect to the Microsoft Dynamics AX database. For example, if you are using Forefront Threat Management Gateway (TMG), you must add a <b>Non-Web Server Protocol Rule</b> . For more information, see <a href="http://technet.microsoft.com/en-us/library/cc441596.aspx">Configuring SQL Server publishing</a> ( <a href="http://technet.microsoft.com/en-us/library/cc441596.aspx">http://technet.microsoft.com/en-us/library/cc441596.aspx</a> ) in the Forefront TMG documentation.
Microsoft SQL Server Analysis Services integration	Analysis server	<ul style="list-style-type: none"> <li>Exclude the port that is used by Analysis Services. By default, Analysis Services uses port 2383.</li> <li>If you are using SQL Server Browser, you must also exclude port 2382.</li> </ul>	For more information about how to configure access to Analysis Services through Windows Firewall, see the SQL Server documentation on MSDN.
Debugger	Developer workstation	Exclude AxDebug.exe and its target programs, such as Ax32.exe and AxServ32.exe.	The debugger uses a dynamically allocated TCP port.
Enterprise Portal for Microsoft Dynamics AX	Web server	<ul style="list-style-type: none"> <li>Enable the Web Server (HTTP).</li> <li>Exclude the port that is used by the Enterprise Portal website, if the site uses a port other than port 80.</li> </ul>	If you do not enable the Web Server in Windows Firewall, you can view the site only from the local server.
Help Server	Web server	Exclude the port that is used by the Help Server web site, if the site uses a port other than port 80.	
Enterprise Search	Web server	Exclude the port that is used by the Search web site, if the site uses a port other than port 80.	
Web services	Web server	Exclude the port that is used by the services web site, if the site uses a port other than port 80.	External programs use this port to consume the Microsoft Dynamics AX web services that are based on Internet Information Services (IIS).

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Component	Computer	Firewall setting	Notes
Management utilities	Remotely managed computer	Enable Remote Administration.	You must enable Remote Administration on computers that are administered remotely by using Windows PowerShell. For example, enable Remote Administration on a computer if you deploy reports to that computer from another computer where Windows PowerShell is installed.
Synch Service	Head-office communications server	<ul style="list-style-type: none"> <li>Exclude the port that is used by Microsoft SQL Server. By default, SQL Server uses port 1433.</li> <li>Exclude the port that is used by Synch Service. By default, Synch Service uses port 16750.</li> <li>Exclude the port that is used by Real-time Service. By default, Real-time Service uses port 1239.</li> </ul>	For instructions, see the <a href="http://go.microsoft.com/fwlink/?LinkId=237283">Implementation Guide for PCI Compliance</a> (http://go.microsoft.com/fwlink/?LinkId=237283).
Synch Service	Store communications server	<ul style="list-style-type: none"> <li>Enable Internet Protocol security (IPsec).</li> <li>Exclude the port that is used by Microsoft SQL Server. By default, SQL Server uses port 1433.</li> <li>Exclude the port that is used by Synch Service. By default, Synch Service uses port 16750.</li> </ul>	For more information, see the <a href="http://go.microsoft.com/fwlink/?LinkId=237283">Implementation Guide for PCI Compliance</a> (http://go.microsoft.com/fwlink/?LinkId=237283).
Real-time Service	<ul style="list-style-type: none"> <li>Store communications server</li> <li>Register</li> <li>Web server that hosts an online store</li> </ul>	Exclude the port that is used by Real-time Service, if the site uses a port other than port 80.	For more information, see the <a href="http://go.microsoft.com/fwlink/?LinkId=237283">Implementation Guide for PCI Compliance</a> (http://go.microsoft.com/fwlink/?LinkId=237283).

Component	Computer	Firewall setting	Notes
Retail POS	Store communications server	<p>Exclude the port that is used by Microsoft SQL Server. By default, SQL Server uses port 1433.</p> <p>Exclude the port that is used by Synch Service. By default, Synch Service uses port 16750.</p>	<p>For more information, see the <a href="#">Implementation Guide for PCI Compliance</a> (<a href="http://go.microsoft.com/fwlink/?LinkId=237283">http://go.microsoft.com/fwlink/?LinkId=237283</a>).</p>
Retail POS	Store database server	<p>Exclude the port that is used by Microsoft SQL Server. By default, SQL Server uses port 1433.</p> <p>On a register that has its own local database, you only need to open the firewall to SQL Server if Sync Service is on a computer other than the register.</p>	<p>For more information, see the <a href="#">Implementation Guide for PCI Compliance</a> (<a href="http://go.microsoft.com/fwlink/?LinkId=237283">http://go.microsoft.com/fwlink/?LinkId=237283</a>).</p>

## Troubleshoot the installation

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This section provides general information about how to troubleshoot an installation of Microsoft Dynamics AX. The following topics are included:

- [Troubleshoot general installation issues](#)
- [Troubleshoot prerequisite issues](#)

Additionally, the following topics can help you find solutions for issues that may occur when you install individual Microsoft Dynamics AX components:

- [Troubleshoot installation issues with AOS](#)
- [Troubleshoot installation issues with client components](#)
- [Troubleshoot installation issues with Enterprise Portal and Role Centers](#)
- [Troubleshoot installation issues with Enterprise Search](#)
- [Troubleshoot installation issues with the developer tools](#)

## Troubleshoot general installation issues

This topic provides information that can help you troubleshoot issues that you may encounter when you run the Setup wizard for Microsoft Dynamics AX.

### The Setup wizard does not start automatically

If the Setup wizard does not start automatically when you put the DVD in the drive, double-click the **setup.exe** file in the root directory of the DVD.

### Cannot locate file <Drive>\setup.exe AutoRun=1

When you click **Microsoft Dynamics AX components** in the initial installation screen, you may receive the message, "Cannot locate file: \<Drive>\setup.exe AutoRun=1". This message indicates that the file association has changed for the autorun.hta file that is used by Setup.

By default, HTML Application Host is the program that is associated with the .hta file type. However, if Microsoft Visual Studio is installed on Windows Server 2012, the .hta file type can be associated with Visual Studio instead.

To resolve this issue, you can use one of the following options:

- Before you run Setup, use the **Default Programs** Control Panel to associate the .hta file type with the HTML Application Host program.
- If you are prompted to choose a program with which to open setup.exe, choose **HTML Application Host**.
- Right-click the file setup.exe and choose **Run as administrator**.
- Right-click the file setup.exe and choose **Properties**. Click the **Compatibility** tab. Under **Compatibility mode**, select Windows 7.

## Setup fails

If Setup fails, view the setup log that is created every time that Microsoft Dynamics AX is installed.

1. Open the setup log file. By default, the path of this file is `\%AllUsersProfile%\Microsoft\Dynamics AX\Dynamics AX Setup Logs\Date Time\DynamicsSetupLog.txt`.
2. Find the error message that was generated by the failure. For detailed information, review the information immediately after the error message in the log.

### Exception: System.Runtime.InteropServices.COMException

During installation, Setup verifies the operating system version of the computer. If Setup is unable to verify the operating system version, Setup can fail. When this issue occurs, the log file displays the message "Setup encountered an unhandled exception and could not be completed" and the message "Exception: System.Runtime.InteropServices.COMException". To work around this issue, restart the computer and run Setup again.


### Exception from HRESULT: 0x8024402C

During installation, Setup tries to connect to the Microsoft Update website to install updates. Error code 0x8024402C indicates that the connection to the Windows Update servers failed. This error may occur if proxy or firewall settings are configured incorrectly. For more information, see Microsoft Knowledge Base article number [900936](http://support.microsoft.com/kb/900936) (<http://support.microsoft.com/kb/900936>).

## Buttons are not visible on Setup pages

If Windows runs with certain DPI and resolution settings, Setup pages are not displayed correctly, and you cannot continue.



The following table shows the supported and unsupported DPI and resolution settings for Windows 7 and Windows Server 2008 R2.

DPI	Resolution	Supported/Not supported
100	800 x 600	Not supported
125	800 x 600	Not supported
150	800 x 600	Not supported
100	1024 x 768	Supported  <b>Note:</b> This resolution is not supported on Chinese operating systems.
125	1024 x 768	Not supported
150	1024 x 768	Not supported
100	1280 x 1024	Supported

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DPI	Resolution	Supported/Not supported
125	1280 x 1024	Supported
150	1280 x 1024	Not supported
100	1600 x 1200	Supported
125	1600 x 1200	Supported
150	1600 x 1200	Supported

The following table shows the supported and unsupported DPI and resolution settings for Windows Vista and Windows Server 2008.

DPI	Resolution	Supported/Not supported
96	800 x 600	Not supported
120	800 x 600	Not supported
96	1024 x 768	Supported  <b>Note:</b> This resolution is not supported on Chinese operating systems.
120	1024 x 768	Supported  <b>Note:</b> This resolution is not supported on Chinese operating systems.
96	1152 x 864	Supported
120	1152 x 864	Supported
96	1280 x 1024	Supported
120	1280 x 1024	Supported
96	1600 x 1200	Supported
120	1600 x 1200	Supported

## You must set a value for the parameter ClientAosServer

When you install Microsoft Dynamics AX silently by using a parameter file, you may incorrectly receive the following error message in the setup log file: "Setup cannot continue. You must set a value for the parameter ClientAosServer." Verify that the parameter file contains the required value. If Setup continues, and you do not receive any other errors, you can ignore this message.



## Label IDs are displayed instead of label text

If label IDs are displayed instead of label text the first time that you start the client, this means that the labels for the selected language are not available. Use one of the following resolutions:

- You may have selected a language that has not yet been released for Microsoft Dynamics AX. To resolve this issue, select a supported language.
- You may have selected a supported language that has not been installed. To install supported languages other than U.S. English, you must install the Foundation Labels model. For information about which languages are available, and about how to install an additional model, see [Install the Microsoft Dynamics AX databases](#).

## Could not load type 'System.ServiceModel.Activation.HttpModule'

After installing a component that uses Internet Information Services (IIS), such as Help Server or web services on IIS, you may receive the following error: "Could not load type 'System.ServiceModel.Activation.HttpModule' from assembly 'System.ServiceModel, Version=3.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089'".

This error indicates that Microsoft .NET Framework 4.0 was installed, and then an earlier version of the .NET Framework was installed, or .NET 3.0 WCF HTTP Activation was enabled.

To resolve the problem, follow the instructions in [Microsoft Knowledge Base article 2015129](http://support.microsoft.com/kb/2015129) (<http://support.microsoft.com/kb/2015129>).

## Troubleshoot prerequisite issues

This topic provides information that can help you troubleshoot issues that you may encounter when you run the prerequisite validation utility.

### **Important:**

This topic does not contain an exhaustive list of prerequisite errors. Before you use the information in this topic, try to resolve prerequisite issues by using the instructions that are provided in the prerequisite validation utility.

### **Prerequisite errors related to Enterprise Portal**

For information about how to troubleshoot prerequisite issues for Enterprise Portal, see [Troubleshoot installation issues with Enterprise Portal and Role Centers](#).

### **Prerequisite errors related to Enterprise Search**

For information about how to properly configure software prerequisites for Enterprise Search, see [Install and configure Search prerequisites](#).

### **Cumulative Update 3 for Microsoft SQL Server 2008 R2 cannot be installed**

If the “Required updates for Microsoft SQL Server” prerequisite fails, the prerequisite validation utility instructs you to install Cumulative Update 3 for SQL Server 2008 R2. When you attempt to install Cumulative Update 3, and other Cumulative Updates have already been installed, you may receive a message that says that a higher version number of SQL Server 2008 R2 is already installed. If you receive this message and the prerequisite check still fails, we recommend that you download and install [Cumulative update package 8](http://support.microsoft.com/kb/2534352/en-us) (http://support.microsoft.com/kb/2534352/en-us) or higher for SQL Server 2008 R2.

### **Required restart after you install the Microsoft .NET Framework version 4.0**

Most of the time, a pending restart of the computer is not considered a mandatory prerequisite. However, if you just installed the Microsoft .NET Framework version 4.0, the installation of some components may fail if you do not restart the computer. To avoid issues, we recommend that you restart the computer after you install the .NET Framework version 4.0.

## Prerequisite check failure for the Microsoft SQL Server Reporting Services service

If you are running the stand-alone prerequisite validation utility, you cannot select the instance of Microsoft SQL Server Reporting Services that is validated for the Reporting Services extensions. By default, the utility validates the first instance that matches the supported version. If multiple instances of Reporting Services are installed, and the instance that the utility validates is not running, the prerequisite check fails. When you run the Setup wizard, you can select a specific instance. In this case, the prerequisite check passes.

## Prerequisite check failure for Microsoft Visual Studio 2010 Tools for the Microsoft Office system

The following prerequisites may conflict with each other:

- Required updates for Microsoft Visual Studio 2010
- Visual Studio 2010 Tools for the Microsoft Office system

If you must install both prerequisites on the same computer, we recommend that you install the required updates for Visual Studio first. If you install the Visual Studio updates later, an older version of Visual Studio 2010 Tools for Microsoft Office is installed, and the Office Add-ins for Microsoft Dynamics AX may not work correctly.

## Prerequisite check warning for the startup type of the SQL Server Full-text Filter Daemon Launcher service

If multiple instances of SQL Server are installed, the prerequisite check for the startup type of the SQL Server Full-text Daemon Launcher service may generate a warning, even if the startup type is set correctly. This warning is generated because Setup verifies the prerequisite for the default instance of SQL Server instead of the instance that you selected.

There is a workaround for this issue. For the instance of SQL Server where you are installing Microsoft Dynamics AX components, make sure that the startup type for the SQL Server Full-text Daemon Launcher service is set to **Automatic**. If the startup type is set correctly, you can ignore the prerequisite warning and continue with the installation.