Microsoft Dynamics AX 2012 Installation Guide

Microsoft Corporation

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This content is preliminary and is subject to change.

Microsoft Dynamics AX

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Prepare for the installation

This part of the documentation provides an overview of the installation process and explains procedures you must complete before you start the installation. The following sections are included.

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Overview of the installation

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

- What's new in installation
- Servers in the Microsoft Dynamics AX environment
- Microsoft Dynamics AX components
- Installation types

What's new in installation

This topic describes installation enhancements in Microsoft Dynamics AX 2012.

Simplified overall installation experience

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

- **Redesigned wizard pages.** The Setup wizard has a new look and feel designed for ease of use and consistency with other Windows® installers.
- **Better progress indicators.** The Setup wizard provides more detailed feedback than in previous releases. While components are being installed, you can see what has successfully completed, what is in progress, and what remains to be completed.
- **Run Setup once.** In previous releases of Microsoft Dynamics AX, you were required to run the Initialization Checklist after installing the basic components of Microsoft Dynamics AX (the Application Object Server (AOS), database, application files, and client). Most components, including Enterprise Portal and reporting extensions, could not be installed until after the checklist had been completed. This meant that you were required to run Setup multiple times in order to complete an installation. In Microsoft Dynamics AX 2012, the Initialization Checklist is no longer part of the installation process, and all components can be installed without completing the checklist.
- **Post-installation configuration steps.** In Microsoft Dynamics AX 2012, instructions for post-installation configuration are integrated into the Setup wizard. After a component has been installed, the Setup wizard displays the next steps required to complete the deployment. In previous releases, this information was provided only in the Installation Guide.
- **Kerberos authentication no longer required.** In previous releases of Microsoft Dynamics AX, you were required 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 the existence and configuration of these technologies at different stages of the installation process. In Microsoft Dynamics AX 2012, prerequisite validation has been improved in the following ways:

- **Standalone prerequisite validation utility.** Before installing Microsoft Dynamics AX, you can run a standalone utility to identify the prerequisites that are needed for the Microsoft Dynamics AX components that you select. The utility can install and configure some prerequisites for you.

- **Consolidated prerequisite verification.** All prerequisite and configuration validation happens at one time. This allows you to remedy all prerequisite issues at once, and then move on to installation.

Simplified client deployment

In previous releases, the Microsoft Dynamics AX client components were contained in an .msi (installer) file that also contained other components. This made it difficult to deploy a large number of 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 to use a shared configuration file. In previous releases, the administrator had to configure clients individually.

Integrated service pack and update installation

In previous releases, you could install service packs and updates only after the Microsoft Dynamics AX installation process was complete. Depending on the number of updates available, this could result in running 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 is also known as a "slipstreamed" installation. If updates are available when you deploy Microsoft Dynamics AX 2012, you can download them to the installation source location. When you run Setup from the updated installation source, all updates will be applied automatically.

Improved discoverability of log files and reports

In Microsoft Dynamics AX 2012, installation troubleshooting 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 spend time searching in multiple places. In addition, a new **Setup summary** report has been added. This report lists the components that you installed, their installation status, and next steps, if applicable. You can access the Setup log files and reports from links in the Setup wizard, or you can navigate to the **Setup Logs** location 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,

the user was required 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. Installing the files on the computer means that service packs or hotfixes can be applied to the Setup files just like any other Microsoft Dynamics AX file. When Setup starts, it verifies whether you have downloaded a more recent version of the files and installs them if they are available.

Simplified installation for single-computer deployments

In Microsoft Dynamics AX 2012, you can choose the **Single-computer installation** option to install a complete Microsoft Dynamics AX system on a single computer for testing, demonstration, or development. This option installs the database, the AOS, client components, business intelligence components, Enterprise Portal, the help server, and the developer components in a single Setup run. Setup will use default selections for all components, and it will not prompt you for additional input.

Servers in the Microsoft Dynamics AX environment

A production deployment of Microsoft Dynamics AX requires multiple servers. The following information lists the types of server that may be required in your implementation.

Servers in a minimum Microsoft Dynamics AX installation

Minimum server components include the database and the Application Object Server (AOS). While you can install the components on a single server computer, separate servers are recommended in a production environment. Single-server installations are typically used for development or testing purposes only.

Application Object Server (AOS)

An AOS server is a computer running 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 and application elements, including customizations.

Servers in a complete Microsoft Dynamics AX installation

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

Report server

A report server is a server running Microsoft SQL Server Reporting Services. Reporting Services is a server-based solution that enables users to create and publish traditional, paper-based reports, as well as interactive web-based reports.

For more information about setting up a report server, see Install Reporting Services extensions.

Analysis server

An analysis server adds to the reporting functionality within 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 setting up an analysis server, see [Configure Analysis Services](#).

Web server

A web server hosts the Internet Information Services (IIS) websites that are required for Microsoft Dynamics AX features like Enterprise Portal, Help server, Enterprise Search, and IIS-based web services.

Enterprise Portal is a Microsoft SharePoint® 2010 products site that can make Microsoft Dynamics AX data and functionality available to trusted users, while making available only restricted functionality, such as catalog information and questionnaires, to anonymous users. For more information about setting up an Enterprise Portal server, see [Install Enterprise Portal](#).

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

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

Web services on IIS is an optional component. AOS-hosted services are available to users and applications across the Intranet. To consume services over the Internet, you must host services on Internet Information Services (IIS). For more information about setting up web services on IIS, see [Install web services on IIS](#).

Other servers in the environment

The following servers are commonly found in infrastructures that are running Microsoft Dynamics AX. This documentation provides guidance on how to use Microsoft Dynamics AX with them. Refer to the respective documentation for more information about installing and setting up these servers.

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 sending and receiving email messages and instant messages. Microsoft Dynamics AX can use email to send alerts to users. Microsoft Dynamics AX requires the messaging server to support SMTP.

Microsoft Dynamics AX components

This section describes the Microsoft Dynamics AX components that you can install using the Setup wizard.

A minimum Microsoft Dynamics AX installation consists of an instance of a database, an Application Object Server (AOS), and at least one client. These components can be installed on computers arranged in a variety of topologies, but all elements must be installed for the system to run.

Databases

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

For information about how to install the databases, see Install the Microsoft Dynamics AX databases.

Server components

Server components include the Application Object Server (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	For more information, see:
Application Object Server (AOS)	Install an Application Object Server (AOS) instance
Enterprise Portal (web server)	Install Enterprise Portal
Enterprise Search (web server)	Install Search
Help Server (web server)	Install help server

Business intelligence components

Business intelligence components provide reporting and analytical functionality that enables you to view and interpret business data. The Reporting Services integration enables you to create reports using Microsoft SQL Server Reporting Services. Integration with SQL Server Analysis Services enables you to use cubes for business intelligence and analytical reporting in Microsoft Dynamics AX.

Component	For more information, see:
Reporting Services extensions	Install Reporting Services extensions
Analysis Services configuration	Configure Analysis Services by running Setup

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	For more information, see:
Microsoft Dynamics AX Windows client	Install the Microsoft Dynamics AX client
Microsoft Office Add-ins	Install Office Add-ins
Remote Desktop Services integration	Install Remote Desktop Services integration

Developer tools

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

Component	For more information, see:
Debugger	Install the debugger
Visual Studio® Tools	Install Visual Studio Tools
Trace Parser	Install the Trace Parser

Integration components

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

Component	For more information, see:
Web services on IIS	Install web services on IIS
.NET Business Connector	Install the .NET Business Connector **Note:** The .NET Business Connector is installed automatically with the Microsoft Dynamics AX components that require it.
Synchronization proxy for Microsoft Project Server	Install the synchronization proxy for Microsoft Project Server

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Component	For more information, see:
Synchronization service for Microsoft Project Server	Install the synchronization service for Microsoft Project Server

Management utilities

Management utilities allow you to configure and manage Microsoft Dynamics AX components and artifacts such as report and web controls from the metadata store.

For information about how to install management utilities, see Install management utilities.

Installation types

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

Custom installation

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

Single-computer installation

Choose **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 required.

If you want to connect to an existing database or specify other custom settings, you must use the custom installation type.

> **Important:**
> You should not use the single-computer installation in a production environment. Use this installation type 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

This section contains the procedures you must complete before you start the Microsoft Dynamics AX installation. The following topics are included:

- Pre-installation checklist
- Create service accounts
- Verify that you have the required permissions for installation
- Check prerequisites
- Create a shared directory for installation

Pre-installation checklist

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

Task	For more information, see:
1. Plan the Microsoft Dynamics AX deployment.	Implementation Planning Guide
2. Look for updated Microsoft Dynamics AX 2012 installation documentation on the web.	Install Microsoft Dynamics AX web page
3. Review the system requirements.	System requirements on the web
4. Create domain accounts for Windows services to run as. For example, you must create domain accounts to run Microsoft Dynamics AX services and SQL Server services.	Create service accounts
5. Copy the DVD contents to a shared directory.	Create a shared directory for installation
6. Make sure that your domain account has appropriate rights to perform the installation.	Verify that you have the required permissions for installation
7. Verify that prerequisites have been met.	Check prerequisites

Create service accounts

A Microsoft Dynamics AX implementation requires many services to run. Set up accounts to run the services. Each account that you set up must:

- Be a dedicated account (used only for the specific service).
- Have a password that does not expire.
- Have minimal access to network resources.
- Be able to log on as a service.

Create accounts for Microsoft Dynamics AX services

Create the following accounts to run Microsoft Dynamics AX services.

Account	Description	To configure this account:
AOS service account	The account that the **Microsoft Dynamics AX Object Server** Windows service will run as. This account is used to communicate with the database server. Consider the following points when you select an account: • We strongly recommend that you use a domain account in a production environment. You should use the Network Service account only in development and testing environments. • If the SQL Server and the AOS are on different computers, you must use a domain account. • If you plan to install any Microsoft Dynamics AX components on a domain controller, you must use a domain account. • If you plan to use Message Queuing (also known as MSMQ) for document exchange with web services on IIS, and you want to send signed messages, you must use a domain account. (If you are sending unsigned messages using web services on IIS, the AOS can run under the Network Service account.)	Select this account when running the Setup wizard to install an AOS instance. For more information, see [Install an AOS instance].
Business Connector proxy account	The account that the .NET Business Connector will run as. This account will be used to connect to the AOS on behalf of a Microsoft Dynamics AX user, without granting that user excessive privileges in the system. ☑ **Note:** This account must not be a Microsoft Dynamics AX user.	Select this account in the **System service accounts** form.
Search crawler account	The account that Enterprise Search will run as. This account will be used by the Microsoft SharePoint Indexing Service to crawl Microsoft Dynamics AX data. This account must be assigned to the Search crawler security role in Microsoft Dynamics AX. We recommend that this account be configured with no local logon rights.	Select this account in the **Assign users to roles** form. For more information, see [Assign users to security roles].

Account	Description	To configure this account:
Synchronization service account	The account that the Microsoft Project Server synchronization service will run as. We recommend that this account be configured with no local logon rights.	Select this account in the **System service accounts** form. For more information, see Install the synchronization service for Microsoft Project Server.

Create accounts for SQL Server services

Create the following accounts to run SQL Server services.

Account	Description	To configure this account:
SQL Server Database Engine account	The account that the **SQL Server (MSSQLSERVER)** Windows service will run as.	Select this account when installing the Database Engine. For more information, see the SQL Server documentation.
SQL Server Reporting Services account	The account that the **SQL Server Reporting Services (MSSQLSERVER)** Windows service will run as.	When installing Reporting Services, specify that the Reporting Services Windows service should run as the .NET Business Connector account.
SQL Server Analysis Services account	The account that the **SQL Server Analysis Services (MSSQLSERVER)** Windows service will run as.	Select this account when installing Analysis Services. ◆ **Important:** The account that you select must have read access to the Microsoft Dynamics AX online transaction processing (OLTP) database.

Verify that you have the required permissions for installation

Before beginning the Microsoft Dynamics AX installation process, work with a system administrator to ensure that the account you log on with at each server has appropriate permissions. The permissions listed below are implemented according to 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 permissions that are required in addition to administrator access on the computer.

Component	Additional permissions required to install
Databases	Member of the **dbcreator** role on the SQL Server instance. If you are installing the databases remotely from a computer other than the database server, you must log on to the remote computer with an account that is an administrator on the SQL Server computer. Setup requires access to SQL Server services.
Application Object Server (AOS)	Member of the **securityadmin** role on the SQL Server instance you want to connect to.
Enterprise Portal	Member of the **System administrator** role in Microsoft Dynamics AX and a member of the **dbcreator** role on the SQL Server instance being used for Microsoft SharePoint Services.
Enterprise Search	Member of the **System administrator** role in Microsoft Dynamics AX, a member of the **Administrator** group in Microsoft SharePoint Services, and a member of the **dbcreator** role on the SQL Server instance being used for Microsoft SharePoint Services.
Help server	Member of the **System administrator** role in Microsoft Dynamics AX.
Reporting Services extensions	Member of the **System administrator** role in Microsoft Dynamics AX.
Analysis Services configuration	Member of the SQL Server **db_accessadmin** role for the Microsoft Dynamics AX database.
Client	None
Office add-ins	None
Remote Desktop Services integration	None
Debugger	None
Visual Studio Tools	None
Trace Parser	None
Web services on IIS	Member of the **System administrator** role in Microsoft Dynamics AX.
.NET Business Connector	None

Component	Additional permissions required to install
Synchronization proxy	Member of the **dbowner** database role on the SQL Server database for Microsoft Project Server.
Synchronization service	Member of the **System administrator** role in Microsoft Dynamics AX.
Management utilities	None

Check prerequisites

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

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

 Note:

The prerequisite validation utility verifies the software prerequisites that Microsoft Dynamics AX depends on. The utility does not verify whether required Microsoft Dynamics AX components are installed or configured. For example, the utility verifies whether a supported version of Windows is installed. It 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 web page.

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, you should 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
Success	Indicates that the local computer meets the prerequisite.
Error	Indicates that the local computer does not meet the prerequisite. You cannot install the component until this prerequisite is installed or configured.
Warning	Indicates that the local computer does not meet the prerequisite, but it will not prevent you from installing the Microsoft Dynamics AX component.

For more information about a prerequisite, click its status. For information about all of the prerequisites that were validated, click **View report** to display the Microsoft Dynamics AX **Prerequisite check report**. Both options provide a prerequisite description, 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, clicking the link will start the download immediately. In other cases, clicking the link will open a download page.

   Note:
   If network or computer security prevents directly downloading a prerequisite, you must download the prerequisite using an alternate 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 are dependent 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 are finished validating prerequisites, click **Close**.

◆ **Important:**
   Prerequisite software configured by the prerequisite validation utility may not include the latest updates. We strongly recommend running Windows Update to identify and install the latest updates before continuing with the Microsoft Dynamics AX installation.

Create a shared directory for installation

Before you install Microsoft Dynamics AX (and subsequent service packs), we recommend that you create a shared directory on a file server and copy the contents of the Microsoft Dynamics AX DVD (or service pack) to this location. You should perform all installations from this network location rather than from the DVD.

Giving users a shared network location from which to install insures that the same version of the software is being installed on all computers.

In addition, if the installation program later needs access to files from the location where Setup was run, it can retrieve the necessary files silently from the network. If Setup was run from a DVD, the user is prompted to insert the DVD when files are needed.

Before you install Microsoft Dynamics AX, complete the following procedure to create a shared directory for the contents of the DVD.

1. Create a directory 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 prohibiting users from making changes to this directory. Only read access is necessary to perform an installation from the directory.
3. Copy the contents of the Microsoft Dynamics AX DVD to the **DynamicsAX6** directory.

Install the Microsoft Dynamics AX databases

This topic describes installation of the Microsoft Dynamics AX databases. There are two databases: the Microsoft Dynamics AX transaction database and the baseline model store. The AOS connects to the Microsoft Dynamics AX database to process transactions and to render forms and reports. The baseline model store is used to upgrade X++ code to Microsoft Dynamics AX 2012 and to analyze application patches before they are applied.

As part of installing the databases, you must identify any additional *model files* that are required for your environment. Model files contain metadata information about application objects and are stored in the database.

Before you install the Microsoft Dynamics AX databases

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

- On the computer where you will install the database, run the prerequisite validation utility to verify that system requirements have been met. For more information, see Check prerequisites.
- Create an account to run the SQL Server service. For more information, see Create service accounts.
- 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.
- Make sure that TCP/IP is enabled and that you can connect to SQL Server.

Include additional models in the installation (optional)

During installation, Setup displays models from the <installation path>\Models\ folder and all of its subfolders. This folder contains the axsys.axmodel file that is used to import the required foundation model (SYS layer). To import additional layers or customizations, you can add other model files to this folder.

Use the following 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 <installation path>\Models\folder. We recommend that you create a different folder to store the models received from different sources. For example, create a folder for each independent software vendor (ISV) or each value-added reseller (VAR).

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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 for models that are mandatory such as the axsys.axmodel file.

Install the Microsoft Dynamics AX databases

Use this procedure to install the Microsoft Dynamics AX databases. 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 **Databases**, and then click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 using Setup or configure existing databases that you created manually.
8. If you want Setup to create the databases, on the **Create a new databases** page, select the name of the computer that is running SQL Server from the **Server name** list. Provide database names or accept the default database names. By default, the transaction database is called **MicrosoftDynamicsAX**. The baseline database is optional, and is called **MicrosoftDynamicsAX_baseline** by default.

   If you created the databases manually, on the **Configure existing databases** page, select the name of the computer that is running SQL Server, and then select the names of the existing databases to configure.

   🔷 **Important:**
   The database name must not include any blank characters or any of the following: backslash (\), slash (/), period (.), comma (,), colon (:), brackets ([ ]), parentheses (( )), or hyphen (-). For more information about characters allowed by SQL Server, see the Identifiers topic on MSDN®.

   Click **Next**.

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

   📝 **Note:**

   It is possible to have models, or .axmodel files, that are not electronically signed. The Setup program cannot verify the publisher of an unsigned model file. Importing an unsigned model file to the model store is a security risk. Setup will display an error message if a selected model file does not have a digital signature. Carefully review the models that you have selected before you decide to continue with or cancel the installation.

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 server and web server components

This section contains information about installing Microsoft Dynamics AX server and web server components. 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

Install an AOS instance

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

Before you install the AOS instance

- On the computer where you want to install the AOS instance, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.
- 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.
- 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 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.

Install an 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 from an earlier version of Microsoft Dynamics AX, you must select **Register database for upgrade** and select a baseline database.

   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

   Note:
   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 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 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.

10. On the **Specify an AOS account** page, select either the Network Service account of the local computer or a domain account for the AOS service.

    Setup grants the following permissions for the AOS account:

    - The AOS account is added to the database as a user, and is made a member of the **db_ddladmin**, **db_datareader**, and **db_datawriter** database roles.

    - The user is granted execute rights to the **createserversessions** and **createusersessions** stored procedures.

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.

Post-installation recommendation

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 and restore the registry, see Backup and recovery.

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 from starting.

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.

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.

Microsoft Dynamics AX

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 port number is incremented by 1. For example, by default, the second AOS instance on a computer is assigned to TCP/IP port 2713. 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.

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Install Enterprise Portal

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

- Install Enterprise Portal (EP)
- Set up Enterprise Portal and Role Centers

Install Enterprise Portal (EP)

This topic describes how to install Enterprise Portal for Microsoft Dynamics AX for a single deployment or a web farm.

Before you install Enterprise Portal and Role Centers

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

- Verify that the Microsoft SharePoint Timer service is running on the web server. Enterprise Portal context-sensitive Help is installed as a timer job. Therefore, if the SharePoint Timer service is not running, context-sensitive Help is not available on Enterprise Portal pages.
- On the computer where you are installing Enterprise Portal, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.
- Verify that you have the appropriate permissions to install Enterprise Portal. For more information, see Verify that you have the required permissions for installation.

⬥ **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 registry entry.

Install Enterprise Portal and Role Centers

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.

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**.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account 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.

    - If you are installing Enterprise Portal for a stand-alone installation, or 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.

    - When you install Enterprise Portal on subsequent servers in a server farm, you must clear this option. The site must be created only on the administration server for the web farm.

    Click **Next**.

    📝 **Note:**
    If your business or organization purchased a developer license for Microsoft Dynamics AX, you can change the web site's URL, 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.

Specify machineKey values in web.config files for sites in a web farm

If your Enterprise Portal site is not part of a web farm, skip this procedure. Otherwise, use this procedure 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. Otherwise, Enterprise Portal pages may display authentication and access errors.

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, especially the "Web Farm Deployment Considerations" section.

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.

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 the Microsoft Dynamics AX Technical Library on TechNet.

Install Search

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

- [Configure SharePoint Services logging](#)
- [Install Microsoft Dynamics AX Enterprise Search](#)

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**.

For more information, see [Configure diagnostic logging](#) in the SharePoint documentation.

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 begin

- 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.
- On the computer where you are installing Enterprise Search, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements web page](#).

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**.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account 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.

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](#)

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 are installing the Help server, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements web page](#).

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.

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 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 pages will 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**.

9. The Help Server must be installed on a 64-bit operating system. When you install MSDAX components on a 64-bit system, the **Select a file location** page is displayed. Use this 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.

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 business intelligence components

The Microsoft Dynamics AX business intelligence components 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 the business intelligence components:

- [Install Reporting Services extensions](#)
- [Configure Analysis Services](#)

Install Reporting Services extensions

Microsoft SQL Server Reporting Services is the primary reporting platform for Microsoft Dynamics AX. The default, out-of-the-box 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 start by running the Microsoft Dynamics AX Setup wizard and selecting the **Reporting Services extensions** option. This option will install the extensions and deploy reports to the Reporting Services server. 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	For more information, see...
Complete pre-installation tasks. These include: • Verify that you have the required permissions to install the Reporting Services extensions. • Install prerequisites. • Configure Reporting Services using the Reporting Services Configuration Manager tool. • Configure Reporting Services for local administration. • Update the Reporting Services configuration file.	Before you install the Reporting Services extensions
Install the Reporting Services extensions.	Install the Reporting Services extensions
Configure the Reporting Services integration. This includes: • Deploy the default reports (if you did not do this when you installed the Reporting Services extensions). • Grant users access to reports.	Deploy the default reports Grant users access to reports

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

You must have the required permissions to install the Reporting Services extensions. For more information, see Verify that you have the required permissions for installation.

Install prerequisites

On the computer where you will install the Reporting Services extensions, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Configure Reporting Services using the Reporting Services Configuration Manager tool

Complete the following steps to configure Reporting Services.

If you chose to install Reporting Services in its default configuration, Reporting Services is already configured for you. We recommend that you follow these steps to verify that the options are configured correctly.

1. Open Reporting Services Configuration Manager (**Start** > **All Programs** > **Microsoft SQL Server 2008** > **Configuration Tools** > **Reporting Services Configuration Manager**).
2. Connect to your Reporting Services instance.

3. Configure the following options. For detailed information about each option, see the SQL Server documentation.

Click this option...	To do this...
[ServerName]\[InstanceName]	Verify that Reporting Services is running. If it is not running, click **Start**.
Service Account	Enter the name and password of the Business Connector proxy account. 📝 **Note:** To view the account that is used as the Business Connector proxy, on your Microsoft Dynamics AX client, open the **System service accounts** form (**System administration** > **Setup** > **System** > **System service accounts**).
Web Service URL	Create a virtual directory for the Reporting Services web service. By default, the virtual directory will be named **ReportServer** and its URL will be http://localhost/ReportServer.
Database	Create a database for Reporting Services. By default, this database will be named **ReportServer**.
Report Manager URL	Create a virtual directory for Report Manager. (Report Manager is the website that reports will be published to.) By default, the virtual directory will be named **Reports** and its URL will be http://localhost/Reports.
E-mail Settings	Not required. For more information, see the SQL Server documentation.
Execution Account	Select the **Specify an execution account** check box. Enter the name and password of the Business Connector proxy account.
Encryption Keys	Not required. For more information, see the SQL Server documentation.
Scale-out Deployment	Not required. For more information, see the SQL Server documentation.

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

Configure Reporting Services for local administration

Deploying Reporting Services on Windows Server® 2008 requires additional configuration steps if you want to administer a report server instance locally. Windows Server 2008 limits the overuse of elevated permissions by removing administrator permissions when you access applications. Because the operating system removes permissions, members of the local Administrators group run most applications as if they are using the Standard User account.

While 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, with additional configuration, you can manage report server content and operations using standard user permissions. For instructions, see How to: Configure a Report Server for Local Administration on Windows Vista® and Windows Server 2008 on TechNet.

After you have configured Reporting Services for local administration, verify that you can access the following sites.

Website	Default URL
Reporting Services web service	http://localhost/ReportServer
Report Manager	http://localhost/Reports

Update the Reporting Services configuration file

Open the Reporting Services configuration file and verify that the settings are correct. You might need to modify settings if:

- You implemented Secure Sockets Layer (SSL).

- You configured the Reporting Services virtual directories to use a port other than port 80.

Use the following procedure to update the configuration file.

1. Open the rsreportserver.config file. By default, this file is located in \Program Files\Microsoft SQL Server\[ReportingServicesInstance]\Reporting Services\ReportServer.

2. Locate the **UrlString** XML elements and update the URL in each of those elements, if necessary. (There are two **UrlString** elements.)

   For example, if you configured the virtual directories to use port 81, you might need to change the port number, as shown:

   ```
   <UrlString>http://+:81</UrlString>
   ```

3. Save your changes and close the file.

4. Make a backup of the rsreportserver.config file.

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.

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. 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, select **Reporting Services extensions**.

   ![note icon] **Note:**
   If the management utilities have not yet been installed on this computer, they will be automatically selected for installation, also.

   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 the reporting 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**.

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

11. On the **Specify a Reporting Services instance** page, do the following:

    a. Select the Reporting Services instance.

    b. Select the **Deploy Reports** check box to deploy the default reports that are included with Microsoft Dynamics AX to Reporting Services.

       ![note icon] **Note:**
       If you do not deploy the reports at this time, you can deploy reports later using Windows PowerShell™ commands. For more information, see [Deploy the default reports](#).

    c. 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.

Complete the Reporting Services integration

Complete the following procedures to integrate Microsoft Dynamics AX with Microsoft SQL Server Reporting Services.

- [Deploy the default reports](#)
- [Grant users access to reports](#)

Deploy the default reports

Microsoft Dynamics AX includes many default reports that you must deploy to Microsoft SQL Server Reporting Services. If you did not deploy the reports when you installed the Reporting Services

extensions, you can use Windows PowerShell to deploy the reports. The following procedures will help you deploy the reports.

Before you begin

Before you can deploy the reports by using PowerShell, you must:

- Verify that you are using a computer where PowerShell 2.0 has been installed.
- Verify that you are an administrator on the server that is running Reporting Services.
- Verify that you are assigned to the Reporting Services administrator role.

Load the Microsoft Dynamics AX PowerShell module and view a list of reports

Complete the following procedure to open PowerShell, load the Microsoft Dynamics AX PowerShell module, and view a list of reports.

1. Open PowerShell as an administrator by completing the following steps:

   a. Open the PowerShell folder on the **Start** menu (**Start** > **All Programs** > **Accessories** > **Windows PowerShell**).

   b. Right-click the **Windows PowerShell** option.

   c. Click **Run as administrator**.

2. Enter the following command to enable PowerShell to run scripts:

   ```
   Set-ExecutionPolicy Unrestricted
   ```

3. Confirm the previous command by entering **Y**.

4. Load the Microsoft Dynamics AX PowerShell module by entering the following command:

   ```
   $axmodulename = "Microsoft.Dynamics.AX.Framework.Management"

   $axdllname = $axmodulename + ".dll"

   $gacfolder = join-path $env:windir "assembly\GAC_MSIL"

   $axdll = Get-ChildItem $gacfolder -Recurse -Include *.dll -Name $axdllname

   $axdll = join-path $gacfolder $axdll

   write-host "Importing AX Management module"

   import-module $axdll
   ```

   💡 **Tip:**
   We recommend that you save this command as a script file so that you do not have to type this command every time that you want to load the Microsoft Dynamics AX PowerShell module. To run the script file, enter the full path of the file.

5. Enter the following command to view the list of cmdlets that are available for use:

   ```
   Get-Command -Module Microsoft.Dynamics.AX.Framework.Management
   ```

6. Retrieve information about the default reports and enter the following command to store that information in a local variable:

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

7. Enter the following command to view the list of reports:

```
$reports
```

The list contains hundreds of reports. To deploy all the reports, see the "Deploy reports" procedure. To filter the list and deploy a smaller set of reports, see the "Filter the list of reports" procedure.

Filter the list of reports

In the previous procedure, you displayed a list of all the Microsoft Dynamics AX default reports that you can deploy. This procedure will help you filter the list.

1. Modify the list so that only the **Name** and **ChangedDate** fields are displayed by entering the following command:

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

2. Modify the list so that only specific reports are listed.

For example, to filter the list so that only the reports that contain the word *CustTrans* are listed, enter the following command:

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

Deploy reports

After you have loaded the Microsoft Dynamics AX PowerShell module and retrieved a list of reports, you can deploy the reports. The Publish-AXReport cmdlet is used to deploy the reports. The following examples show you how to use this cmdlet.

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

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

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

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

- To deploy all reports, enter the following command:

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

Grant users access to reports

To grant users access to reports, you must configure security settings in Microsoft Dynamics AX and in Microsoft SQL Server Reporting Services. The following sections describe the tasks that you must complete in each application.

Configure security settings in Microsoft Dynamics AX

Complete the following tasks in Microsoft Dynamics AX:

- Determine which reports each Microsoft Dynamics AX role should have access to.
- Verify that each Microsoft Dynamics AX role has the correct duties and privileges assigned to it in order to access the reports.
- Assign users to Microsoft Dynamics AX roles.
- Secure the data shown in reports.

Configure security settings in Reporting Services

Complete the following tasks in Reporting Services:

- Assign users to the **DynamicsAXBrowser** role in Reporting Services.

  For detailed instructions about how to assign users to Reporting Services roles, see the SQL Server documentation on MSDN.

- Identify the account that is used to run the Application Object Server (AOS) service and the account that is used as the Business Connector proxy. Assign those accounts to the **DynamicsAXBrowser** role in Reporting Services.

  For detailed instructions about how to assign users to Reporting Services roles, see the SQL Server documentation on MSDN.

- Restrict access to report folders and reports.

  Reporting Services includes security features and tools that you should use to help control access to report folders and published reports. See the SQL Server documentation on MSDN for detailed conceptual information and step-by-step tutorials that will help you administer security in Reporting Services.

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 start by running Setup and selecting the **Analysis Services configuration** option. This option will configure Analysis Services for use with Microsoft Dynamics AX. The following topics 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

Checklist: Configure Analysis Services and deploy cubes

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

Task	For more information, see...
Complete prerequisite tasks. These include: • Verify that you have the required permissions to configure Analysis Services. • Create a domain account to run the Analysis Services service. • Install prerequisites.	Before you configure Analysis Services
Configure Analysis Services by running Setup.	Configure Analysis Services by running Setup
Complete the Analysis Services integration. This includes: • Install SQL Server Management Objects. • Verify that exchange rate information has been entered. • Deploy the default cubes. • Grant users access to the cubes. • Automate the processing of cubes.	Install SQL Server Management Objects Verify that exchange rate information has been entered Deploy the default cubes Grant users access to the cubes Automate the processing of cubes

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

You must have the required permissions to configure Analysis Services. For more information, see Verify that you have the required permissions for installation.

Create a domain account

Create a domain account to run the Analysis Services service. For more information, see Create service accounts.

Install prerequisites

On the computer where Analysis Services is—or will be—installed, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

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.

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 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, select **Analysis Services configuration**. 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 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**.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account used by the .NET 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, do the following:

    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 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 complete, click **Finish** to close the wizard.

Complete the Analysis Services integration

Complete the following procedures to integrate Microsoft Dynamics AX with Microsoft SQL Server Analysis Services.

- Install SQL Server Management Objects
- Verify that exchange rate information has been entered
- Deploy the default cubes
- Grant users access to the cubes
- Automate the processing of cubes

Install SQL Server Management Objects

You must install Microsoft SQL Server Management Objects on Microsoft Dynamics AX client computers that will be used to:

- Run the **SQL Server Analysis Services project wizard**.
- Use the **Analysis servers** form.

Download the Management Objects from http://go.microsoft.com/fwlink/?LinkId=130654 (x86) or http://go.microsoft.com/fwlink/?LinkId=130655 (x64).

Verify that exchange rate information has been entered

Complete the following procedures to make sure that exchange rate information is available to your cubes. Complete these procedures using your Microsoft Dynamics AX client.

Select a system currency and exchange rate type

Complete the following procedure to select a system currency and exchange rate type. When Microsoft SQL Server Analysis Services generates monetary amounts in a cube, the amounts will be calculated using the system currency and exchange rate type.

1. Click **System administration > Setup > System parameters**.

2. From the **System currency** list, select a currency.

3. From the **System exchange rate type** list, select an exchange rate type.

Verify the exchange rate information

Complete the following procedure to verify that the system currency and exchange rate type that you selected in the previous procedure are displayed in the **System currency and exchange rate type** form.

1. Click **System administration > Setup > Business intelligence > Analysis Services > System currency and exchange rate type**.

2. Verify that the system currency and the system exchange rate type that you selected in the previous procedure are displayed in this form.

Deploy the default cubes

Microsoft Dynamics AX provides default analysis cubes that you can use. Complete the following procedure to deploy and process these cubes.

1. Open your Microsoft Dynamics AX client.

2. Start the **SQL Server Analysis Services project wizard** (**File** > **Tools** > **Business Intelligence (BI) tools** > **SQL Server Analysis Services project wizard**).

3. On the **Analysis Services project wizard** page, click **Next**.

4. On the **Select an option** page, click **Deploy**. Click **Next**.

5. On the **Select an existing Analysis Services project** page, click **Select a project from the AOT**. Select the **Dynamics AX** project from the list. Click **Next**.

6. On the **Deployment options** page, do the following:

   a. Select the **Deploy the project** check box.

   b. Enter the name of the server that is running Analysis Services.

   c. Click **Create new database**.

      By default, the database will be named **Dynamics AX**. If you want the database to have a different name, enter a new name.

   d. Select the **Process the project after it is successfully deployed** check box.

   e. Click **Next** to deploy and process the cubes.

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7. On the **Deploying** page, click **Next** when the deployment is completed.
8. Click **Finish** to close the wizard.

Grant users access to the cubes

Security for analysis cubes is set up independently from Microsoft Dynamics AX security. To grant users access to cubes, you must assign users to database roles in an instance of Microsoft SQL Server Analysis Services.

When you deployed the cubes that are included with Microsoft Dynamics AX, default roles were created in the database where you deployed the cubes. The following procedures explain how you can assign users to these default roles.

⚠️ **Warning:**
The default roles that are created for you in Analysis Services are not synchronized with the security roles in Microsoft Dynamics AX. For example, if you modify the permissions of the **Sales manager** role in Microsoft Dynamics AX, it does not affect the **Sales manager** role in Analysis Services.

Assign users to a database role

Complete the following procedure to assign users to a database role.

1. In SQL Server Management Studio, connect to your Analysis Services instance.
2. In the tree view, expand the **Databases** > **[Database Name]** > **Roles** node.
3. Right-click the appropriate role and click **Properties**. The **Edit Role – [Role Name]** form is displayed.
4. In the **Select a page** area, click **Membership**.
5. Click **Add** to add the appropriate users to this role.

Specify which cubes a database role has access to

Complete the following procedure to specify which cubes a database role has access to.

1. In SQL Server Management Studio, connect to your Analysis Services instance.
2. In the tree view, expand the **Databases** > **[Database Name]** > **Roles** node.
3. Right-click the appropriate role and click **Properties**. The **Edit Role – [Role Name]** form is displayed.
4. In the **Select a page** area, click **Cubes**. A list of the cubes that are contained in the database is displayed.
5. In the **Access** column, specify the type of access the selected role should have for each cube. You can select **None**, **Read**, or **Read/Write**.
6. Click **OK**.

Restrict a database role to specific members of a dimension

Complete the following procedure to restrict a database role to specific members of a dimension.

For example, the cubes that are included with Microsoft Dynamics AX have a **Company** dimension. By default, each role has access to data in all company accounts. You can restrict a role to specific company accounts in the **Company** dimension.

1. In SQL Server Management Studio, connect to your Analysis Services instance.
2. In the tree view, expand the **Databases** > **[Database Name]** > **Roles** node.
3. Right-click the appropriate role and click **Properties**. The **Edit Role – [Role Name]** form is displayed.
4. In the **Select a page** area, click **Dimension Data**.
5. From the **Dimension** list, select a dimension.

   For example, to restrict the role to specific company accounts, select the **Company** dimension.
6. On the **Basic** tab, select the same dimension from the list. Then select the members of the dimension that the role should have access to.

   For example, if you selected the **Company** dimension, you would now select the specific company accounts (or dimension members) the role should have access to.
7. Click **OK**.

Automate the processing of cubes

Processing is the act of refreshing the data in a cube. During processing, data in a cube is refreshed with data from the online transaction processing (OLTP) database.

Microsoft SQL Server Analysis Services provides several configuration options that enable you to maximize performance, minimize latency, and schedule processing of cubes. For more information about processing options in Analysis Services, see the SQL Server documentation on TechNet.

Install client components

This section contains information about installing Microsoft Dynamics AX client components. 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. Use the following topics to install a Microsoft Dynamics AX client:

- Install a client
- Deploy multiple clients

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 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 Windows 7 computers, **Administrative Tools** are located in **Control Panel**.

If you are installing a large number of clients, we recommend that you install them from a file server and create a shared configuration file. For details, see Deploy multiple clients.

Before you install a client

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

- On the computer where you will install the client, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.
- Install the Microsoft Dynamics AX databases and the AOS in the environment.

Install a client

Use this procedure to install a Microsoft Dynamics AX client using the Setup wizard. 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 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 resolving 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 **Select client preferences** page, specify the initial settings for the client. Select a display language, select an installation type, and specify whether Setup should create a desktop shortcut. 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 select to use a shared configuration file, you must enter the network location of the file. Click **Next**.

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

   If a configuration file does not exist at the network location that you specify, a new configuration file will be created.

   📝 **Notes:**
   - A configuration file includes the location of the client application. If the Microsoft Dynamics AX client location differs between the computer generating the configuration file and the computer using the configuration file, the client using the file will not start. We recommend that you create multiple configuration files if the client is installed in different locations on different computers.

   - For example, the default location of the Microsoft Dynamics AX client application differs between 32-bit and 64-bit operating systems. On a 64-bit system, the default path is \Program files (x86)\Microsoft Dynamics AX. On a 32-bit system, the default path is \Program Files\Microsoft Dynamics AX. If you have clients on both operating systems, we recommend that you create a configuration file for each version of the operating system, and then specify the appropriate file when installing clients.

   For more information about using a shared configuration file, see Deploy multiple clients.

   Click **Next**.

10. 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.

    If you do not know the name of the Application Object Server or the port information, contact the Microsoft Dynamics AX administrator.

    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 complete, click **Finish** to close the wizard.

Deploy multiple clients

To deploy multiple Microsoft Dynamics AX Windows clients at one time, we recommend using the following process.

1. Copy the contents of the Microsoft Dynamics AX DVD to a shared directory on the network. For more information, see Create a shared directory for installation.

2. Create a common configuration file in a shared directory on the AOS computer that clients will connect to.

3. Create a batch file to install clients with a shared configuration. The file must be located in a shared directory in the Microsoft Dynamics AX DVD shared folder, at the same level as Setup.exe.

4. Test the batch file on a local computer.

5. Use a mass deployment tool such as Group Policy or Microsoft Systems Management Server to run the batch file from a logon script.

   For more information about using Group Policy to deploy software, see:
   http://go.microsoft.com/fwlink/?LinkId=92736.

   For more information about using Systems Management Server to deploy software, see:
   http://go.microsoft.com/fwlink/?LinkId=115327.

The following procedures contain more detailed information about creating a shared configuration file and creating a command file.

Create a configuration file to share

By default, each client is installed with local configuration settings that specify which AOS to connect to. In a large deployment, we recommend that you create a common configuration file in a shared directory, instead. (The shared directory must always be available, or clients will not be able to start.) Using a single configuration file for multiple clients makes future configuration changes easier.

You can create a shared client configuration file when you install a client using Setup. For more information, see Install a client.

Alternatively, you can use the following procedure to create a file based on the configuration settings for an existing client.

1. On a client that has local configuration settings and is connected to the appropriate AOS instance, start the Microsoft Dynamics AX Configuration utility (**Start** > **Control Panel** > **Administrative Tools** > **Microsoft Dynamics AX Configuration**).

2. Verify that the settings in the configuration are those to distribute broadly.

3. Click **Manage**, and then click **Export configuration to file**. Name and save the configuration file.

4. Copy the saved configuration file to a shared directory. The user of each client computer must have read permissions on the shared directory.

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Create a batch file to install clients

This section describes how to create a batch file to specify installation parameters to deploy multiple clients.

📝 **Note:**

Instead of entering all parameters directly in the batch file, you can set up the batch file to use a parameter file. For more information, see <u>Run Setup in silent mode</u>.

To determine which parameters to use, we recommend that you install a client on a single computer and then review the Setup log file, which is located at *<Drive>*\Program Files\Microsoft Dynamics AX\Dynamics AX\60\Setup logs*Date Time*\DynamicsSetupLog.txt. The log lists the parameters that were used in the installation.

For more information about individual parameters, see the <u>Setup parameters reference</u> on TechNet.

1. Create a batch file named AxInstallClient.cmd in the Microsoft Dynamics AX DVD shared folder, at the same level as Setup.exe.

2. Specify installation parameters in the batch file. Use the following example as a guide:

   ```
   X:\Setup.exe HideUI=1 AcceptLicenseTerms=1 InstallClientUI=1 ClientAosServer=Company1
   ClientLanguage=en-US ClientHelpLanguages=en-US;fr-CA
   ```

3. Optional: To install clients without installing the Microsoft Dynamics AX Client Configuration utility, set the parameter ClientConfig to zero.

4. Optional: To set up clients to use a shared configuration file, set the ClientConfigFile path parameter to the file in the shared directory.

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

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 Microsoft Dynamics AX contextual tab is created on the ribbon in Excel and Word. The user can use the controls on this tab to create and refresh data in an Excel spreadsheet or a Word document.

Before you install the Office Add-ins

On the computer where you will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Install the Office Add-ins

Use this procedure to install the Office Add-ins files on a client computer. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens vary, based on the components 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, click **Custom installation**, and then click **Next**.

5. On the **Select components** page, select **Office Add-ins**. When you select to install the Office add-ins, the **Remote Desktop Services integration** component is also selected automatically. Click **Next**.

6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 **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 select to use a shared configuration file, you must enter the network location of the file. Click **Next**.

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

If a configuration file does not exist at the network location that you specify, a new configuration file will be created.

📝 **Notes:**
- A configuration file includes the location of the client application. If the Microsoft Dynamics AX client location differs between the computer generating the configuration file and the computer using the configuration file, the client using the file will not start. We recommend that you create multiple configuration files if the client is installed in different locations on different computers.

- For example, the default location of the Microsoft Dynamics AX client application differs between 32-bit and 64-bit operating systems. On a 64-bit system, the default path is \Program files (x86)\Microsoft Dynamics AX. On a 32-bit system, the default path is \Program Files\Microsoft Dynamics AX. If you have clients on both operating systems, we recommend that you create a configuration file for each version of the operating system, and then specify the appropriate file when installing clients.

For more information about using a shared configuration file, see [Deploy multiple clients](#).

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.

   If you do not know the name of the Application Object Server or the port information, contact the Microsoft Dynamics AX administrator.

   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 complete, click **Finish** to close the wizard.

13. The first time you open Excel or Word on a computer where the **Office Add-ins** component was installed, you will be prompted to install the add-in. Click **Install** to proceed with the installation.

Install Remote Desktop Services integration

The Microsoft Dynamics AX Remote Desktop Services integration components support integration with local applications, such as Microsoft Word and Excel, when Microsoft Dynamics AX is hosted on a Remote Desktop server. Install the Remote Desktop integration components on local client computers. Remote Desktop integration components are selected automatically when you select to install the Office Add-ins for Microsoft Dynamics AX.

Before you install Remote Desktop Services integration

On the computer where you will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Install Remote Desktop Services integration

Use this procedure to install the Remote Desktop Services integration components on a client computer. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens will vary based on the components 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, click **Custom installation**, and then click **Next**.
5. On the **Select components** page, select **Remote Desktop Services integration** and click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 complete, click **Finish** to close the wizard.

Troubleshoot installation issues with client components

The following sections provide information to help you troubleshoot issues you may encounter when installing the Microsoft Dynamics AX client components.

User not recognized error when trying to start client after installing

The client returns a **User not recognized** error if you are not a user in the system. After installation, the first person to start a client on a computer is set to be the administrative user. You can determine whether someone has been set as the Microsoft Dynamics AX administrator by querying the values in the **userinfo** table in the database. You can have the administrative user add you as a user to the system, and then add you to the **System administrator** role. For more information, see the Microsoft Dynamics AX [Technical Library](#) on TechNet.

Open the client configuration utility

You can access the Microsoft Dynamics AX Configuration utility from the **Administrative Tools** menu. On Windows 7 computers, **Administrative Tools** are located in **Control Panel**.

Install developer tools

Use developer tools to customize Microsoft Dynamics AX. For example, you can use developer tools to create customizations or extensions to Enterprise Portal and to create advanced production reports using SQL Server Reporting Services. The developer tools include the debugger, 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](#)

Install the debugger

The debugger provides debugging capabilities for X++ developers. The debugger tool communicates with the Microsoft Dynamics AX client, with the .NET Business Connector, or with batch jobs running on the Microsoft Dynamics AX server.

Before you install the debugger

On the computer where you will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Install the debugger

Use this procedure to install the debugger. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens vary, based on the components 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, 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 resolving 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 **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 complete, 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 with Visual Studio and enable developers to develop managed code for Microsoft Dynamics AX. These tools and functionality enable you to create managed code that accesses X++ objects in addition to the ability to create or modify Enterprise Portal controls or SSRS reports.

📝 **Note:**
> For a complete development experience, we recommend installing 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 will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.
- If Visual Studio is running, we recommend closing it before installing the Visual Studio Tools.

Install Visual Studio Tools

Use this procedure to install Visual Studio Tools. 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 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 to install Visual Studio Tools, the **Management utilities** component is also selected automatically. Click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 **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 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**.

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 the Trace Parser

The Trace Parser consolidates information from multiple sources, such as RPC and SQL, to provide an integrated view of application runtime performance.

Before you install the Trace Parser

On the computer where you will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Install the Trace Parser

Use this procedure to install the Trace Parser. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens vary based on the components 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, click **Custom installation**, and then click **Next**.

5. On the **Select components** page, select **Trace Parser**. When you select to install Trace Parser, the **.NET Business Connector** component is also automatically selected. Click **Next**.

6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 **Select a display language** page, select the language in which you would like to first run Microsoft Dynamics AX.

   📝 **Note:**
   Because the .NET Business Connector is a type of Microsoft Dynamics AX client, if it is the first client you are installing 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 select 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 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**.

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. 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.

Install integration components

Integration components enable Microsoft Dynamics AX to integrate with external applications. The integration components include web services on IIS, the .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 the 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 of 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 more information, see Check prerequisites.
- 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.
    - Start the 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 web server.
2. Create a web site that Setup will use to install the Microsoft Dynamics AX web services. You can create a web site or use an existing web site. This includes the default web site on IIS. To create a new website, see the IIS documentation for instructions about how to create a website.

    🔷 **Important:**
    We recommend that you create a new website to install the Microsoft Dynamics AX web services for the ease of administration.

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 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 **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 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**.

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 web site, 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 web site. 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.

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 to configure and test the Microsoft Dynamics AX web services on IIS.

Configure IIS

For IIS 7, use the following steps to configure the application pool that is associated with the Microsoft Dynamics AX web services for IIS 7. This step is required to set the correct version of the .NET Framework.

1. Start Internet Information Services (IIS) Manager. In the 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 **<Computer_name> (domain\account)** node 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 then click **Basic Settings…**.

4. On the **Edit Application Pool** dialog, select **.NET Framework <nnnn>** from the **.NET Framework version** list where <nnnn> signifies .NET Framework 4.0 and later versions. For example, <nnnn> could be a number similar to 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 IIS Manager.

5. Restart the web server.

6. Browse to the Microsoft Dynamics AX web services and confirm that the web server returns the WSDL. Use this URL to browse to the web service: http://<hostname:port>/MicrosoftDynamicsAXAif60/xppservice.svc?wsdl. Microsoft Dynamics AX uses port 8081 by default.

For IIS 6, make sure that the virtual directory for the Microsoft Dynamics AX web services is associated with version 4 of the .NET Framework. See the IIS6 documentation for instructions. Restart IIS after you configure it.

Register the web site in Microsoft Dynamics AX

Use the following steps to register the web site in Microsoft Dynamics AX.

1. In Microsoft Dynamics AX Windows client, press Ctrl + Shift + W to open the Application Object Tree (AOT).

2. In the AOT, expand the **AOT** > **Forms** node and browse to AifWebsites form. Right-click the AifWebsites form and then click **Open**.

3. On the AifWebsites form, create a new record and provide appropriate values for the **Name**, **Description**, **URL**, and **Virtual directory share path** fields. The default URL is http://<computername:8081>/MicrosoftDynamicsAXAif60. The default share path for the virtual directory is \\<computername>\MicrosoftDynamicsAXAif60.

4. Click **Validate**. Verify that the Infolog dialog confirms:

    - The web site is configured properly.

    - You can access the computer and the web site.

Create an enhanced port

For information about creating enhanced ports, see the Microsoft Dynamics AX Technical Library on TechNet.

Install the .NET Business Connector

The .NET Business Connector for Microsoft Dynamics AX enables applications to interact with Application Object Server (AOS) instances by providing a set of managed classes that facilitate access to 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 integrate with Microsoft Dynamics AX. You must install the .NET Business Connector on each computer where the integrated application is installed. The application will then communicate with the AOS through the .NET Business Connector instance on the local computer.

Some components require that the .NET Business Connector be configured to connect to Microsoft Dynamics AX with a proxy account. The use of a proxy enables the .NET Business Connector to connect on behalf of Microsoft Dynamics AX users when authenticating with an AOS instance.

When you install the .NET Business Connector, the Microsoft Dynamics AX Configuration utility is also installed.

> **Note:**
> AIF WCF Services is the preferred method for integration with Microsoft Dynamics AX. The .NET Business Connector installation is provided for backward compatibility.

Before you install the .NET Business Connector

Complete the following tasks before you install the .NET Business Connector.

- On the computer where you will install the .NET Business Connector, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

- Install the Microsoft Dynamics AX databases and the AOS in the environment, or install them when you install this component.

Install the .NET Business Connector

Use this procedure to install the .NET Business Connector. 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 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 click **Next**.
6. On the **Prerequisite validation results** page, resolve any errors. For more information about resolving 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 **Select a display language** page, select the language in which you would like to first run Microsoft Dynamics AX.

    ✎ **Note:**
    Because the .NET Business Connector is a type of Microsoft Dynamics AX client, if it is the first client you are installing 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 select 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 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**.

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.

Install the synchronization proxy for Microsoft Project Server

Microsoft Project Server synchronization provides support for synchronizing 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. The following information explains how to install the synchronization proxy. (You can, however, install the synchronization proxy and the synchronization service at the same time.)

The synchronization proxy uses Microsoft Message Queuing to connect to Microsoft 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 will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

- Verify that you have the required permissions 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 are installing other Microsoft Dynamics AX components at the same time, the installation screens vary based on the components 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, 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 resolving 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 **Specify Business Connector proxy account information** page, enter the name and password for the .NET Business Connector proxy account. Click **Next**.

9. 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**.

10. On the **Connect to Microsoft Project Server** page, enter the Project Server name and the database name used for Project Server reporting. In the **Project web access URL** box, enter the URL of the website used to access Project Server.

    > 📝 **Note:**
    > If the synchronization proxy must connect to multiple Project Server URLs, install the synchronization proxy using the first URL, uninstall the synchronization proxy, and then install the synchronization proxy again using a different URL. Uninstalling the proxy does not affect the ability to synchronize with URLs that were specified during previous installations.

    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 complete, 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. The following information explains how to install the synchronization service. (You can, however, install the synchronization service and the synchronization proxy at the same time.)

If Project Server uses a Microsoft Database Engine (MSDE) or SQL Server Express Edition database, install the synchronization service on the Project Server computer.

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 will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements web page](#).
- Install the Microsoft Dynamics AX databases and the AOS in the environment. (Or install them when you install this component.)
- Configure a domain account for the synchronization service to run as. For more information, see [Create service accounts](#).

Install the synchronization service

Use the following procedure to install the synchronization service. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens will vary based on the components 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, 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 resolving 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 **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 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**.

10. On the **Specify Business Connector proxy account information** page, enter the password for the proxy account used by the .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, select to create a new message queue or connect to an existing message queue.

    If you choose 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 access to the queue.

    If you are connecting 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 will communicate through message queues. For Setup to configure the proper permissions, you must provide a domain account used by the Microsoft Project Server eventing service, as well as the service account of at least one AOS instance. Then 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 complete, click **Finish** to close the wizard.

Install management utilities

Management utilities allow you to configure and manage Microsoft Dynamics AX components and artifacts. Use these utilities to deploy artifacts such as report and web controls from the metadata store.

Before you install management utilities

On the computer where you will install this component, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the [system requirements web page](#).

Install management utilities

Use this procedure to install the Microsoft Dynamics AX management utilities. If you are installing other Microsoft Dynamics AX components at the same time, the installation screens will vary based on the components 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, 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 resolving 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 **Specify client configuration options** page, specify whether the Business Connector will access configuration information from the registry on the local computer or from a shared configuration file. If you select the 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 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**.
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.

Perform a single-computer installation of Microsoft Dynamics AX

You can set up Microsoft Dynamics AX on a single computer to create a development, test, pilot, or trial environment.

When you choose a single-computer installation, the complete Microsoft Dynamics AX system is automatically installed and configured on the local computer.

Use the following topics to install Microsoft Dynamics AX on a single computer.

- [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 installation type to install a complete Microsoft Dynamics AX system on a single computer for development, demonstration, or testing. For more information about which components 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 required. For more information about individual components, see the corresponding topics in this guide.

◆ **Important:**
　　We do not recommend using the single-computer installation in a production environment. Use this installation type only for development and testing.

Before you perform a single-computer installation

Prerequisites for all components included in the single-server installation must be installed before you can use this installation type. On the computer where you will perform the installation, run the prerequisite validation utility to verify that system requirements have been met. For more information about the hardware and software requirements for Microsoft Dynamics AX, see the system requirements web page.

Perform a single-computer installation

1. Start Microsoft Dynamics AX Setup. Under **Install**, select **Microsoft Dynamics AX components**.
2. Advance through the initial 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 resolving prerequisite errors, see Check prerequisites. When no errors remain, click **Next**.
5. On the **Specify an AOS account** page, choose whether to use the Network Service account of the local computer or a domain account to run the AOS service, and then click **Next**.
6. On the **Specify Business Connector proxy account information** page, enter the name and password for the .NET Business Connector proxy account. 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 complete, click **Finish** to close the wizard.

Considerations for installing multiple instances on a computer

In a single environment you can install multiple instances of the Microsoft Dynamics AX Application Object Server (AOS) and the 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.

The primary use for multiple Microsoft Dynamics AX instances is in development environments that are used to support multiple customers.

Caution:
We do not recommend or support installing multiple versions of Microsoft Dynamics AX components on the same computer in a production environment.

The following table lists considerations when installing a second instance of a component.

Component	Considerations
AOS	Each AOS instance is automatically assigned a number between 01 and 99. That number is displayed in the **Programs and Features** control panel.
	We recommend that you create a group in Active Directory to manage AOS account permissions. For more information, see [Install an Application Object Server (AOS) instance](#).
Database	During initialization, you can import existing data into the database.
Components that require the .NET Business Connector	You can install only one instance of the .NET Business Connector on a computer. In an environment with multiple AOS instances, use the Microsoft Dynamics AX Configuration utility to make sure that the .NET Business Connector on the local computer connects to the intended AOS instance for the component you are installing.
	In the **Configuration Target** list in the utility, choose **Business Connector (non-interactive use only)**. On the **Connection** tab, verify that the correct AOS instance is displayed.
	For more information about using the Microsoft Dynamics AX Configuration utility, click the **Help** button in the utility.

Microsoft Dynamics AX

Install Microsoft Dynamics AX in silent mode

When you run the Setup wizard, Setup is running in interactive mode. That is, a graphical user interface (GUI) prompts you for required information. Alternatively, you can run Setup in silent mode, with no GUI displaying. In this mode, required information is supplied 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
Run Setup in silent mode	Provides the procedures you need to follow to run the Setup wizard without the graphical user interface.
Setup parameters	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 is running in interactive mode. That is, a graphical user interface (GUI) prompts you for required information. Alternatively, you can run Setup in silent mode, with no GUI displayed. In this mode, required information is supplied 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 deploying multiple clients at one time. For more information, see Deploy multiple clients.

Determine which parameters to use

The same parameters are available whether you enter them at the command prompt or create a parameter file. For information about individual parameters, see the Setup parameters reference on TechNet.

To determine which parameters to use, we recommend that you install a client on a single computer and then review the Setup log file, which is located at *<Drive>*\Program Files\Microsoft Dynamics AX\Dynamics AX\60\Setup logs*Date Time*\DynamicsSetupLog.txt. The log lists the parameters that were used in the installation.

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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 information:

   <Path to DVD or shared directory>\Setup.exe *parameter1*="*value*" *parameter2*="*value*"

   When using multiple parameters, insert a single space between parameters.

   ⚠ **Warning:**
   > If you enter duplicate parameters, Setup will fail silently.

3. After you have listed all parameters, press **Enter**.

Specify installation parameters 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 will fail silently.

   Do not include double quotation marks in parameter files. Because a line return is used as a delimiter in a parameter file, values that otherwise require the use of 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 will be treated as a comment rather than a command or parameter.

2. Open a Command Prompt window.

3. At the command prompt, type the following information:

   <Path to DVD or shared directory>\Setup.exe ParmFile=*<path to 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**.

Sample parameter file

The following is an example of a parameter file that can be used to install the databases and the Application Object Server (AOS). Your parameter file will vary, based on the components that you are installing.

```
HideUI=1

AcceptLicenseTerms=1

DbSqlServer=SQLServerName

DbSqlDatabaseName=DatabaseName

InstallApplication=1

ApplicationInstanceName=ApplicationInstanceName

InstallAos=1

AosInstanceName=AOSInstanceName

AosApplicationPath="C:\Program Files\Microsoft Dynamics AX\60"

AosReportErrors=0
```

Firewall settings for Microsoft Dynamics AX components

If you are using Windows Firewall to protect your computers, the following settings are required for Microsoft Dynamics AX components to function. 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 used by SQL Server (1433 by default).	For more information, see the SQL Server documentation.
Application Object Server (AOS)	AOS server	• Exclude the TCP/IP port used by the AOS (2712 by default). • Setup automatically creates the inbound rule "Dynamics AX 6.0 – MicrosoftDynamicsAX (RPC)" for the TCP/IP port. • Exclude the services WSDL port used by the AOS (8101 by default). • Setup automatically creates the inbound rule "Dynamics AX 6.0 – MicrosoftDynamicsAX (WSDL)" for the WSDL port. • Exclude the services endpoint port used by the AOS (8201 by default). • Setup automatically creates the inbound rule "Dynamics AX 6.0 – MicrosoftDynamicsAX (NetTCP)" for the services endpoint port.	Windows Firewall must be enabled on the computer. Each AOS instance must use a different port number. **Note:** By default, each time that you install an additional AOS instance on a computer, the TCP/IP port number and the Services endpoint port numbers increment by 1. For example, the second AOS instance on a computer would be assigned to TCP/IP port 2713 by default.
Client	Client workstation	Exclude Ax32.exe.	The client uses a TCP port to connect to the AOS.

Component	Computer	Firewall setting	Notes
Reporting Services extensions	Report server	• Exclude the port used by Reporting Services virtual directories, if other than port 80. • Enable Remote Administration.	Remote Administration must be enabled to use PowerShell to deploy reports from a computer other than the report server.
Analysis services integration	Analysis server	• Exclude the port used by Analysis Services (2383 by default). • If you are using SQL Server Browser, you must also exclude port 2382.	For more information about configuring access to Analysis Services through Windows Firewall, see the SQL Server documentation on MSDN.
Debugger	Developer workstation	Exclude AxDebug.exe and its target applications, such as Ax32.exe and AxServ32.exe.	The debugger uses a dynamically allocated TCP port.
Enterprise Portal	Web server	• Enable Web Server (HTTP). • Exclude the port used by the Enterprise Portal web site, if other than port 80.	If you do not enable the Web Server option in Windows Firewall, you will be able to view the site from the local server only.
Help Server	Web server	Exclude the port used by the Help Server web site, if other than port 80.	
Enterprise Search	Web server	Exclude the port used by the Search web site, if other than port 80.	
Web services	Web server	Exclude the port used by the services web site, if other than port 80.	External applications use this port to consume the IIS-based Microsoft Dynamics AX web services.

Microsoft Dynamics AX 2012 Installation Guide

Troubleshoot the installation

This section contains general information about troubleshooting the Microsoft Dynamics AX installation. The following topics are included:

- [Test the installation](#)
- [Troubleshoot general installation issues](#)

Test the installation

After installation and before configuring Microsoft Dynamics AX, test whether the installation is functioning by performing the following steps.

1. Verify that all Application Object Server (AOS) instances have started.

2. Launch a client that is connected to each running AOS instance.

3. Test the security of your system:

   - Can an unauthorized user access application files?

   - Can an unauthorized user access the database computer?

   - Can an unauthorized user access the Enterprise Portal site?

   - Can an unauthorized user access the application integration site?

   - Validate that correct permissions are set on the reporting server data.

   - Validate that authorized users are allowed to print Microsoft Dynamics AX data.

   - Establish a procedure for monitoring logs for unusual activity.

Troubleshoot general installation issues

The following sections provide information to help you troubleshoot issues you may encounter when running the Setup wizard.

The Setup wizard does not start automatically

If the Microsoft Dynamics AX Setup wizard does not launch automatically when you put the DVD in the drive, double-click the **setup.exe** file in the root directory of the DVD.

Setup fails

If Setup fails, first refer to the setup log that is created each time Microsoft Dynamics AX is installed.

1. Navigate to: *%AllUsersProfile%*\Microsoft Dynamics AX\Setup Logs*Date Time*\DynamicsSetupLog.txt.
2. Find the error message returned by the failure. Review the information immediately following the error message in the log for details.

Restart required after installing .NET Framework 4.0

A pending computer restart is not considered a mandatory prerequisite in most cases. However, if you have just installed .NET Framework 4.0, the installation for some components may fail if you do not restart. To avoid issues, we recommend restarting after installing .NET 4.0.

Exception from HRESULT: 0x8024402C

During installation, Setup attempts to connect to the Microsoft Update web site to install updates. The 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.

You must set a value for the parameter ClientAosServer

When installing Microsoft Dynamics AX silently using a parameter file, you may falsely 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 without any other errors, you can disregard this message.

Setup could not validate the ASP.NET version

When installing a component that requires a virtual directory, you may encounter the following error: "Setup could not validate that the ASP.NET version on virtual directory *<DirectoryName>* was changed." This message does not indicate that Setup failed. The warning occurs because Setup is unable to verify the ASP.NET version. Use Internet Information Services (IIS) Manager to verify that the ASP.NET version on the virtual directory is 2.0.50727. If the version is correct, you can ignore the message.