



Microsoft Dynamics AX 2012 System Requirements

Microsoft Corporation

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Note:

Some of the information in this guide applies only to AX 2012 R3 installations, and some information applies only to AX 2012 R2, AX 2012 Feature Pack, or AX 2012.

Unless otherwise noted in this guide, all other content applies to AX 2012, AX 2012 Feature Pack, AX 2012 R2, and AX 2012 R3.

Microsoft Dynamics AX

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System requirements for Microsoft Dynamics AX 2012

Before you install Microsoft Dynamics AX 2012, make sure that the system that you are working with meets or exceeds the minimum network, hardware, and software requirements.

Network requirements

Microsoft Dynamics AX can operate on networks that use Internet Protocol Version 4 (IPv4) or Internet Protocol Version 6 (IPv6).

Consider the network environment when you plan the system, and use the following guidelines.

Network response time

The following table lists the minimum network requirements for the connection between the client and the Application Object Server (AOS) and the connection between the AOS and the database in a Microsoft Dynamics AX system.

Value	Client to AOS	AOS to database
Bandwidth (b)	100 megabits per second (Mbps)	100 Mbps

The total response time for running a task in Microsoft Dynamics AX is expressed by the following formula:

$$\text{Response time} = (\text{Number of calls to and from the server} * \text{Latency}) + \text{Number of bytes sent/b}$$

 **Important:**

The higher the latency, the longer the response time. You are responsible for making sure that the response time caused by latency in the network is acceptable for your business.

Local area network (LAN) environments

Connect directly through a Microsoft Dynamics AX Windows client. Windows Server Remote Desktop Services is not required.

Wide area network (WAN) environments

Remote Desktop Services is not required when bandwidth constraints do not exist, and when user interactions on the client require six or fewer round trips. With an average of 100 milliseconds latency, we

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expect a delay of approximately 600 milliseconds. Customizations and data configurations will require optimization to reduce round trips to six or fewer round trips per user interaction.

In a WAN environment that uses legacy X++ reporting, connect by using Windows Server Remote Desktop Services or another remote connection product, regardless of network latency.

In a WAN environment that has more than 100 milliseconds peak latency, you must use Remote Desktop Services to deploy Microsoft Dynamics AX Windows clients.

Windows Server Remote Desktop Services, formerly Terminal Services, includes RD RemoteApp, RD Easy Print, and RD Web Access. For more information about how to use Remote Desktop Services, see the [Remote Desktop Services site](http://technet.microsoft.com/en-us/windowsserver/terminalservices/default.aspx) (<http://technet.microsoft.com/en-us/windowsserver/terminalservices/default.aspx>) on Microsoft TechNet.

Other Terminal Emulation software, within the Microsoft Support policy, may also be used where Remote Desktop Services is allowed.

Important:

The Outlook synchronization feature in the Sales and marketing module is not supported when the Microsoft Dynamics AX client is deployed by using Remote Desktop Services.

Domain requirements

Consider the following domain requirements when you install Microsoft Dynamics AX:

- Computers that run base Microsoft Dynamics AX components must belong to an Active Directory domain, and Active Directory must be configured in native mode.

Note:

The following Retail components are not required to belong to a domain: Retail POS, Modern POS, channel databases and offline databases, Async Client, Retail Server, and Hardware station.

- Computers that run base Microsoft Dynamics AX components must have access to other computers in Active Directory. These computers may be either in the same domain or in another trusted domain.
- The domain controller must run in Windows 2008 mode or later.
- To support e-mail alerts in Microsoft Dynamics AX, an SMTP (Simple Mail Transfer Protocol) server must be present in the environment.

Hardware requirements

This section of the document describes the hardware that is required to run Microsoft Dynamics AX.

Actual requirements vary, based on the system configuration and based on the applications and features that you decide to install. The following are some of the many factors that affect the choice of appropriate hardware for a Microsoft Dynamics AX installation:

- The number of transactions per hour
- The number of concurrent users
- The number of concurrent users of Enterprise Portal for Microsoft Dynamics AX

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- The number of remote connections
- The number of locations

For more information about the factors to consider when you select hardware, see [Planning hardware infrastructure](http://technet.microsoft.com/library/e10f80b4-7816-492f-976a4cb45c66ed65(AX.60).aspx) (http://technet.microsoft.com/library/e10f80b4-7816-492f-976a4cb45c66ed65(AX.60).aspx).

You can use the Microsoft Dynamics Lifecycle Services Usage profiler to gather data to help describe the projected usage of a Microsoft Dynamics AX implementation. For more information, see [Usage profiler \(Lifecycle Services, LCS\)](http://technet.microsoft.com/library/4b7e3232-21c4-4564-90ed1734d50a1caa(AX.60).aspx) (http://technet.microsoft.com/library/4b7e3232-21c4-4564-90ed1734d50a1caa(AX.60).aspx).

Basic hardware requirements

The following hardware requirements apply to all computers in a Microsoft Dynamics AX system.

Item	Requirement
Processor	Intel Pentium/Celeron family or compatible Pentium III Xeon or higher processor. We recommend a processor speed of 1.1 GHz or faster.  Important: Microsoft Dynamics AX is not supported on Itanium 64-bit processors.
Monitor	Super VGA (1024x768) or higher resolution monitor
Other	A DVD drive is required for an installation from a DVD.

Processor and RAM requirements

The following table lists the number of processors and amount of RAM that are required for server computers. Both minimum and recommended hardware are listed.



Note:

If other Microsoft software is installed on the same computer, the system must comply with the hardware requirements for that software, also.

Server computers	
CPU cores	Minimum: 2 cores Recommended: 8 cores
RAM	Minimum: 8 GB Recommended: 14 GB Note: We recommend that you limit other server applications on the same computer as the AOS, such as Microsoft SQL Server, to 1 GB RAM.

The following table lists the number of processors and amount of RAM that are required for client computers. Both minimum and recommended hardware are listed.

Client computers	
CPU cores	Minimum: 1 core Recommended: 2 cores
RAM	Minimum: 2 GB Recommended: 4 GB

Software requirements for all computers

The following software must be present on a computer before any Microsoft Dynamics AX components can be installed:

- Microsoft .NET Framework

Version	Notes
.NET Framework 4.5	Required with AX 2012 R3. Supported, but not required, with earlier releases of AX 2012.
.NET Framework 4.0	Required with AX 2012 R2. Supported, but not required, with earlier releases of AX 2012.
.NET Framework 3.5 with Service Pack 1	Required for most components, including the Setup wizard, with the original release of AX 2012. For those components that require a later version of .NET Framework, it is listed as an additional requirement in this document.

- Microsoft Windows Installer 3.1 or Windows Installer 4.0

Software requirements for server computers

The following Microsoft Dynamics AX components require a server installation:

- Databases
- Application Object Server (AOS)
- Enterprise Portal
- Enterprise Search
- Help Server
- Management Reporter for Microsoft Dynamics ERP
- Microsoft SQL Server Reporting Services extensions
- Microsoft SQL Server Analysis Services configuration
- Web services on Internet Information Services (IIS)
- Synchronization proxy for Microsoft Project
- Synchronization service for Microsoft Project
- Management utilities
- RapidStart Connector
- Warehouse Mobile Devices Portal
- VSS writer

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- Connector for Microsoft Dynamics AX (Microsoft Dynamics CRM connector)
- Data Import/Export Framework

Supported server operating systems

The following table lists the server operating systems that are supported for Microsoft Dynamics AX 2012 components.

Operating system	Notes
Windows Server 2012 R2 Standard Edition or Datacenter Edition	Windows Server 2012 R2 is supported with AX 2012 R3 and cumulative update 7 for AX 2012 R2.
Windows Server 2012 Standard Edition or Datacenter Edition	Windows Server 2012 is supported with AX 2012 R3, AX 2012 R2, and cumulative update 5 for AX 2012.
Windows Server 2008 R2 Standard Edition, Enterprise Edition, Web Edition, or Datacenter Edition	
Windows Server 2008 Standard Edition, Enterprise Edition, Web Edition, or Datacenter Edition, with Service Pack 2	Only 64-bit versions of Windows Server 2008 are supported.



Note:

Although a server operating system is required for most Microsoft Dynamics AX server components, you can also install some server components on supported client operating systems. However, this kind of installation is supported only for demonstration or development. In a production environment, you must install the server components on a supported server operating system.

Software requirements for database servers

Regardless of the version of SQL Server you use, the following requirements apply:

- Only 64-bit versions of SQL Server are supported.
- In a production environment, we recommend that you install the latest cumulative update for the version of SQL Server that you are using.
- Microsoft Dynamics AX supports Unicode collations that are case-insensitive, accent-sensitive, kana-sensitive, and width-insensitive. The collation must match the Microsoft Windows locale of the computers that are running instances of the AOS. If you are setting up a new installation, we recommend that you select a Windows collation instead of a SQL Server collation. For more information about how to select a collation for a SQL Server database, see the [SQL Server documentation](http://go.microsoft.com/fwlink/?linkid=119526) (<http://go.microsoft.com/fwlink/?linkid=119526>).

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- In AX 2012 R3, SQL Server change tracking must be turned on for the Microsoft Dynamics AX database and retail channel databases.

The following table lists the supported versions of SQL Server for the Microsoft Dynamics AX databases. For the minimum hardware requirements for SQL Server, see <http://www.microsoft.com/sql/default.mspx>.

Requirement	Notes
<p>Microsoft SQL Server 2014, Standard Edition, Enterprise Edition, or Business Intelligence Edition.</p>	<ul style="list-style-type: none"> SQL Server 2014 is supported by default with AX 2012 R3. To use SQL Server 2014 with AX 2012 R2, you must install cumulative update 7. To use SQL Server 2014 with AX 2012, you must install cumulative update 5. To use the Data Import/Export Framework for AX2012 R2 with SQL Server 2014, see: Install the AX 2012 R2 CU7 version of the Data import/export framework for use with SQL Server 2014. For SQL Server 2014 hardware requirements, see Hardware and Software Requirements for Installing SQL Server 2014 (http://msdn.microsoft.com/enus/library/ms143506(v=sql.120).aspx).
<p>SQL Server 2012, Standard Edition, Enterprise Edition, or Business Intelligence Edition.</p> <p>Service Pack 1 (http://www.microsoft.com/enus/download/details.aspx?id=35575) for Microsoft SQL Server 2012 is supported with the following updates:</p> <ul style="list-style-type: none"> Cumulative update 5 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2828929) for AX 2012 Cumulative update 1 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2807685) for AX 2012 R2 <p>Service Pack 2 with Cumulative Update 2 or later (http://support.microsoft.com/kb/2983175) for Microsoft SQL Server 2012 is supported with the following updates:</p> <ul style="list-style-type: none"> Cumulative update 7 for AX 2012, Cumulative update 7 for AX 2012 R2 AX 2012 R3 	<ul style="list-style-type: none"> SQL Server 2012 is supported by default with AX 2012 R3 and AX 2012 R2. To use SQL Server 2012 with an earlier version of AX 2012, you must install cumulative update 3 (http://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2709934) for AX 2012. For SQL Server 2012 hardware requirements, see Hardware and Software Requirements for Installing SQL Server 2012 (http://msdn.microsoft.com/enus/library/ms143506(v=sql.110).aspx).

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Requirement	Notes
<p>SQL Server 2008 R2, Standard Edition, Enterprise Edition, or Datacenter Edition.</p> <p>Service Pack 1 (http://www.microsoft.com/download/en/details.aspx?id=26727) is supported, but it is not required unless you are installing Reporting Services extensions.</p> <p>Service Pack 2 (http://www.microsoft.com/enus/download/details.aspx?id=30437) is supported with cumulative update 4 for AX 2012. (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2765124)</p> <p>Service Pack 3 (http://www.microsoft.com/enus/download/details.aspx?id=44271) is supported with:</p> <ul style="list-style-type: none"> • AX 2012 R3 • Cumulative update 7 for AX 2012 R2 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2885603) • Cumulative update 7 for AX 2012 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2936810) 	<p>For SQL Server 2008 R2 hardware requirements, see Hardware and Software Requirements for Installing SQL Server 2008 R2 (http://msdn.microsoft.com/enus/library/ms143506(v=sql.105).aspx).</p>
<p>SQL Server 2008, Standard Edition or Enterprise Edition, with Service Pack 1.</p> <p>Service Pack 3 is supported with cumulative update 4 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2765124) for AX 2012.</p>	<p>For SQL Server 2008 hardware requirements, see Hardware and Software Requirements for Installing SQL Server 2008 (http://technet.microsoft.com/enus/library/ms143506(v=sql.100).aspx).</p>

Software requirements for other Microsoft Dynamics AX server components

Some Microsoft Dynamics AX server components have additional requirements. The following table lists these requirements.

Component	Additional requirements	Notes
Application Object Server (AOS)	<ul style="list-style-type: none">.NET Framework 4.5 (required with AX 2012 R3, and supported with AX 2012 R2, AX 2012 Feature Pack, and cumulative update 5 for AX 2012)–or–.NET Framework 4.0, with the hotfix from Knowledge Base article 2390372 (http://support.microsoft.com/kb/2390372) (required with AX 2012 R2, AX 2012 Feature Pack, and AX 2012)SQL Server 2012 Native Client or SQL Server 2008 Native Client	<ul style="list-style-type: none">Install SQL Server Native Client on the AOS server if the AOS server is separate from the database server.If you are using AX 2012 R3, you must install the SQL Server 2012 version of the Native Client, regardless of the version of SQL Server that you are using. If you are using AX 2012 R2, AX 2012 Feature Pack, or AX 2012, you must install the SQL Server 2008 version of the Native Client, regardless of the version of SQL Server that you are using.

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Component	Additional requirements	Notes
Enterprise Portal	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 (supported with AX 2012 R3 and AX 2012 R2) • ASP.NET 2.0 • Microsoft AppFabric 1.1 • Microsoft SharePoint Foundation 2013 (supported with AX 2012 R3 and AX 2012 R2). Service Pack 1 is required with AX 2012 R3 and supported with cumulative update 7 for AX 2012 R2. –or– Microsoft SharePoint Server 2013, Standard Edition or Enterprise Edition (supported with AX 2012 R3 and AX 2012 R2). Service Pack 1 is required with AX 2012 R3 and supported with cumulative update 7 for AX 2012 R2. –or– SharePoint Foundation 2010. Service Pack 2 is supported with cumulative update 7 for AX 2012, cumulative update 7 for AX 2012 R2, and AX 2012 R3. –or– SharePoint Server 2010, Standard Edition or Enterprise Edition (Enterprise Edition recommended). Service Pack 2 is supported with cumulative update 7 for AX 2012, cumulative update 7 for AX 2012 R2, and AX 2012 R3. <p>□ SQL Server 2008 R2 Analysis Management Objects (AMO)</p>	<ul style="list-style-type: none"> • In AX 2012 R3 and AX 2012 R2, AppFabric is required to run Enterprise Portal in a web farm. AppFabric is not required for single server Enterprise Portal deployments. • Because Enterprise Portal runs on SharePoint, the server where you install Enterprise Portal must meet the hardware and software requirements for the version and edition of SharePoint that you are using. For more information, see the TechCenter for SharePoint (http://technet.microsoft.com/enUS/sharepoint/). • To create a Power View report that displays data from an analysis cube, you must install SharePoint Server 2010 or SharePoint Server 2013. • To use SharePoint 2013 with AX 2012 R2, you must install several updates. For more information, see Enterprise Portal on Microsoft SharePoint 2013 (http://technet.microsoft.com/library/5906047d-4a98-4e86-9f2df405e3d69b22(AX.60).aspx). • SharePoint Server 2010 can support Enterprise Portal and Enterprise Search. If you plan to use SharePoint Foundation 2010 for Enterprise Portal, you must also install one of the search server applications that are listed for Enterprise Search. • In the original release of AX 2012, to deploy Enterprise Portal in an environment where ASP.NET impersonation and claims-based authentication are enabled, you must install the Microsoft Dynamics AX hotfix from Knowledge Base article 2823664 (http://go.microsoft.com/fwlink/?LinkId=294944). • You must install the SQL Server 2008 R2 version of AMO, even if you are using a newer version of SQL Server.

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Component	Additional requirements	Notes
Enterprise Search	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 (supported with AX 2012 R3 and AX 2012 R2) • ASP.NET 2.0 • Windows PowerShell 2.0 • Microsoft SharePoint Server 2013, Standard Edition or Enterprise Edition (supported with AX 2012 R3 and AX 2012 R2). Service Pack 1 is required with AX 2012 R3 and supported with cumulative update 7 for AX 2012 R2. <p style="text-align: center;">–or–</p> <p>Microsoft Search Server 2010</p> <p style="text-align: center;">–or–</p> <p>Microsoft Search Server Express 2010</p> <p style="text-align: center;">–or–</p> <p>Microsoft Fast Search Server 2010</p> <p style="text-align: center;">–or–</p> <p>SharePoint Server 2010, Standard Edition or Enterprise Edition</p>	A Search Server application is required only if you are using SharePoint Foundation 2010. Search functionality is built into SharePoint Server 2010 and SharePoint 2013.
Help Server	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 (supported with AX 2012 R3 and AX 2012 R2) • ASP.NET 4.0 	
Management Reporter server components	<p>For information about the requirements for Management Reporter, see the Management Reporter system requirements (http://go.microsoft.com/fwlink/?LinkId=396441).</p>	

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Component	Additional requirements	Notes
Reporting Services extensions	<ul style="list-style-type: none"> Microsoft SQL Server Reporting Services <p>The versions of SQL Server that are supported for Microsoft Dynamics AX also support Reporting Services extensions, with the following differences:</p> <ul style="list-style-type: none"> To create a Power View report that displays data from an analysis cube, you must use SQL Server 2012 Reporting Services with Service Pack 1 and cumulative update package 4 (http://support.microsoft.com/kb/ 2833645) or a later update. Reporting Services must be installed in SharePoint integrated mode. If you are using SQL Server 2008 Reporting Services, Service Pack 2 (http://www.microsoft.com/enus/download/details.aspx?id=125 48) with cumulative update package 3 (http://support.microsoft.com/kb/ 2498535) or a later update for SQL Server 2008 is required. <p>For more information about the supported versions of SQL Server, see the Software requirements for database servers section of this document.</p> <ul style="list-style-type: none"> Windows PowerShell 2.0 (http://support.microsoft.com/kb/968 929) 	<ul style="list-style-type: none"> Starting with AX 2012 R2, the Reporting Services integration is supported on a report server that is configured to run in SharePoint integrated mode. SharePoint integrated mode is not supported with earlier versions of Microsoft Dynamics AX. The Reporting Services integration is not supported on computers where instances of Reporting Services 2005 and Reporting Services 2008 are installed side by side. By default, Windows PowerShell 2.0 is installed on Windows Server 2008 R2 and Windows Server 2012. On Windows Server 2008 Service Pack 2, Windows PowerShell 2.0 must be installed manually. Before you install version 2.0, make sure that version 1.0 has been removed (http://technet.microsoft.com/enus/li brary/dd351188.aspx).

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Component	Additional requirements	Notes
Analysis Services integration	<ul style="list-style-type: none"> <li data-bbox="430 338 885 558">• Microsoft SQL Server Analysis Services The versions of SQL Server that are supported for Microsoft Dynamics AX also support Analysis Services integration, with the following differences: <li data-bbox="430 579 885 831">• To create a Power View report that displays data from an analysis cube, you must use SQL Server 2012 Analysis Services with Service Pack 1 and cumulative update package 4 (http://support.microsoft.com/kb/2833645) or a later update. <li data-bbox="430 852 885 1220">• If you're using SQL Server 2012 Analysis Services, you must install cumulative update package 1 (http://support.microsoft.com/kb/2679368) for SQL Server 2012. For more information about the supported versions of SQL Server, see the Software requirements for database servers section of this document. <li data-bbox="430 1241 885 1272">• SQL Server Management Studio <li data-bbox="430 1293 885 1430">• SQL Server Business Intelligence Development Studio (BIDS) if you are using SQL Server 2008 or SQL Server 2008 R2 or SQL Server 2012. 	<p data-bbox="907 338 1429 516">If you are using Analysis Services 2012, it must be installed in multidimensional mode. The default analysis cubes that are included with Microsoft Dynamics AX cannot be deployed to an Analysis Services instance that is running in tabular mode.</p> <p data-bbox="907 537 1429 663">The Analysis Services integration is not supported on computers where instances of Analysis Services 2005 and Analysis Services 2008 are installed side by side.</p>

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Component	Additional requirements	Notes
Web services on IIS	<ul style="list-style-type: none"> • Web server role • .NET Framework 4.5 (required with AX 2012 R3, and supported with AX 2012 R2, AX 2012 Feature Pack, and cumulative update 5 for AX 2012) –or– .NET Framework 4.0 (required with AX 2012 R2, AX 2012 Feature Pack, and AX 2012) • IIS 7.0, IIS 7.5, or IIS 8.0 (supported with AX 2012 R3 and AX 2012 R2) • If you use web services to exchange documents with external partners, we recommend that you install the Windows SDK (http://www.microsoft.com/downloads/details.aspx?FamilyId=E6E1C3DFA74F-4207-8586-711EBE331CDC). 	The Windows SDK contains tools that make it easier to configure Web services. In particular, the Windows Communication Foundation (WCF) Configuration Editor Tool, SvcConfigEditor.exe, provides a graphical user interface (GUI) that you can use to create and modify configuration settings. Therefore, you do not have to directly modify XML configuration files.
Synchronization proxy for Microsoft Project	The environment must include a computer that is running the synchronization service and a computer that is running Microsoft Project Server 2010.	To use the integration with Project Server, the synchronization proxy must be installed on the same computer as the Project Server Interface (PSI) Web service.
Synchronization service for Microsoft Project	Message Queuing, which is also known as MSMQ	Message Queuing must be installed on the computer where you are installing the synchronization service.
Management utilities	Windows PowerShell 2.0 (http://support.microsoft.com/kb/968929)	By default, Windows PowerShell 2.0 is installed on Windows Server 2008 R2 and Windows Server 2012. On Windows Server 2008 Service Pack 2, Windows PowerShell 2.0 must be installed manually. Before you install version 2.0, make sure that version 1.0 has been removed (http://technet.microsoft.com/enus/library/dd351188.aspx).
RapidStart Connector	No additional software requirements	

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Component	Additional requirements	Notes
Warehouse Mobile Devices Portal	<ul style="list-style-type: none"> Web server role Internet Information Services (IIS) 7 or later versions ASP.NET MVC version 2 runtime (Retail) (http://www.microsoft.com/enus/download/details.aspx?id=22079) 	
VSS Writer	Microsoft System Center 2012 Data Protection Manager (DPM) must be running in the environment.	
Connector for Microsoft Dynamics AX	For information about the requirements for Connector, see the Connector Installation Guide (http://go.microsoft.com/fwlink/?LinkId=325397).	
Data Import/Export Framework	SQL Server Integration Services	Install Integration Services on the same SQL Server version as the SQL Server instance that hosts the AX 2012 business and model store databases.
Management Pack for AX 2012	Microsoft System Center Operations Manager 2007 R2 with Service Pack 1 or Service Pack 2	
Management Pack for AX 2012 R3	Microsoft System Center Operations Manager 2012 R2 with Service Pack 1	
Mass deployment of AX 2012	Microsoft System Center Configuration Manager 2007 and 2012	

Virtual server support

Microsoft Dynamics AX is certified on Windows Server 2008 and Windows Server 2012 with Hyper-V Virtualization, and will support other virtualization solutions that participate in the Server Virtualization Validation Program, consistent with the guidelines that are listed for all Microsoft software as part of Knowledge Base article [897615](http://support.microsoft.com/kb/897615) (<http://support.microsoft.com/kb/897615>).

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To use Hyper-V in a production environment, you must download the update for Windows Server 2008 that is described in Knowledge Base article [950050](http://support.microsoft.com/kb/950050) (<http://support.microsoft.com/kb/950050>). The beta version of Hyper-V, which is included by default with Windows Server 2008, is not supported.

Software requirements for client computers

The following Microsoft Dynamics AX components can be installed on a client computer:

- Windows client
- Office Add-ins
- Remote Desktop Services integration
- Report Designer for Management Reporter
- Debugger
- Microsoft Visual Studio Tools
- Trace Parser
- .NET Business Connector



Note:

These components can also be installed on any of the supported server operating systems.

Supported client operating systems

The following table lists the client operating systems that are supported for Microsoft Dynamics AX 2012. Both 32-bit and 64-bit versions of client operating systems are supported.

Operating system	Notes
Windows 8.1 Pro, and Windows 8.1 Enterprise	Windows 8.1 is supported with AX 2012 R3, cumulative update 7 for AX 2012 R2, and cumulative update 5 for AX 2012. Modern POS requires Windows 8.1 Update 1. Modern POS is available only with AX 2012 R3.
Windows 8 Pro, and Windows 8 Enterprise	Windows 8 is supported with AX 2012 R3, AX 2012 R2, and cumulative update 5 for AX 2012.
Windows 7 Professional Edition, Ultimate Edition, or Enterprise Edition	
Windows Vista Business Edition, Ultimate Edition, or Enterprise Edition, with Service Pack 2	

Software requirements for the Microsoft Dynamics AX client

The following table lists the software requirements that Microsoft Dynamics AX client computers must meet.

Requirement	Notes
<p>.NET Framework 4.5 (required with AX 2012 R3, and supported with AX 2012 R2, AX 2012 Feature Pack, and cumulative update 5 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2828929) for AX 2012)</p> <p>–or–</p> <p>.NET Framework 4.0 (required with AX 2012 R2, AX 2012 Feature Pack, and AX 2012)</p>	
<p>One of the following web browsers is required for client computers that access Enterprise Portal.</p> <p>Internet Explorer</p> <ul style="list-style-type: none"> Version 10 and version 11 are supported for all Microsoft Dynamics AX releases. Version 8 and version 9 are supported with AX 2012 R2 and earlier AX 2012 releases. <p>Mozilla Firefox</p> <ul style="list-style-type: none"> Version 24 or later is required for AX 2012 R3. Version 11 or later is required for AX 2012 R2. Version 3.5 is the minimum version supported for earlier AX 2012 releases. <p>Safari</p> <ul style="list-style-type: none"> Version 7 or later is required for AX 2012 R3. Version 5.1.2 is the minimum version supported for earlier AX 2012 releases. 	<ul style="list-style-type: none"> The browser version that you choose must be compatible with the version of SharePoint that you are using for Enterprise Portal. Internet Explorer 11.0 is supported by default with AX 2012 R3. To use Internet Explorer 11.0 with an earlier version of AX 2012, you must install the hotfixes listed in Knowledge Base article 2958723 (http://support.microsoft.com/kb/2958723). Internet Explorer 10.0 is supported by default with AX 2012 R3 and AX 2012 R2. To use Internet Explorer 10.0 with an earlier version of AX 2012, you must install cumulative update 5 for AX 2012. In AX 2012 R3 and AX 2012 R2, the Safari browser is supported by default for end-user tasks in Enterprise Portal. To use the Safari browser with an earlier version of AX 2012, you must install Microsoft Dynamics AX hotfix 2686124 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2686124). Enterprise Portal supports Safari only for end-user tasks in the portal. Enterprise Portal does not support Safari for developer or system administrator tasks. Web browser clients can run on many operating systems. However, those configurations are supported only for issues that can be reproduced when the browser runs on an operating system that is supported for Microsoft Dynamics AX.

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Requirement	Notes
<p>Office 2013</p> <p>Service Pack 1 is now supported with Microsoft Dynamics AX 2012 R3, Dynamics AX 2012 R2 cumulative update 7 and Dynamics AX 2012 cumulative update 7</p> <p>–or– Office 365</p> <p>–or– 2010 Microsoft Office release</p> <p>–or– 2007 Office release, Service Pack 3</p>	<ul style="list-style-type: none"> A locally installed version of Office is required for Outlook, Microsoft Word, and Microsoft Excel integrations with Microsoft Dynamics AX. Office 365 subscriptions are supported, as long as the programs run locally on the client computer. Office 2013 is supported by default with AX 2012 R3 and AX 2012 R2. To use Office 2013 with an earlier version of AX 2012, you must install cumulative update 5 for AX 2012. To use the 64-bit version of Office 2013 with the Outlook Synchronization feature in the Sales and marketing module, you must download and install the Microsoft Dynamics AX hotfix 2888503 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2888503). <p>Important:</p> <p>The Outlook synchronization feature is not supported when the Microsoft Dynamics AX client is deployed by using Remote Desktop Services.</p> <ul style="list-style-type: none"> To use Lync 2013 with AX 2012 R2, you must download and install the following hotfixes: 2863156 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2863156) and 2863199 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2863199). <p>To use Lync 2013 with AX 2012, you must download and install the following hotfixes: 2868424 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2868424) and 2872755 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;en-us;2872755).</p>
<p>SQL Server 2008 R2 Analysis Management Objects (AMO)</p>	<p>AMO is required on client computers that are used to administer the OLAP database.</p> <ul style="list-style-type: none"> x86 download: http://go.microsoft.com/fwlink/?LinkID=188447 x64 download: http://go.microsoft.com/fwlink/?LinkID=188448 <p>You must install the SQL Server 2008 R2 version of AMO, even if you are using a newer version of SQL Server.</p>

Software requirements for other client components

Some Microsoft Dynamics AX client components have additional requirements. The following table lists these requirements.

Component	Additional requirements	Notes
Office Add-ins	<ul style="list-style-type: none"> Word or Excel Open XML SDK for Microsoft Office 2.0 Visual Studio Tools for the Microsoft Office System (VSTO) 4.0 	Although Office is recommended for all client computers, you must install Word or Excel to use the Office Add-ins. For information about the supported versions, see the Software requirements for the Microsoft Dynamics AX client section of this document.
Remote Desktop Services integration	No additional software requirements	
Report Designer for Management Reporter	For information about the requirements for Management Reporter, see the Management Reporter system requirements (http://go.microsoft.com/fwlink/?LinkId=39644).	
Debugger	No additional software requirements	
Visual Studio Development Tools	<p>Windows PowerShell 2.0, and one of the following.</p> <p>For AX 2012 R3 with CU8:</p> <ul style="list-style-type: none"> Visual Studio 2013, Professional Edition, Premium Edition, or Ultimate Edition with update 2 or later. <p>For AX 2012 R3 without CU8, AX 2012 R2, AX 2012 Feature Pack, and AX 2012 RTM:</p> <ul style="list-style-type: none"> Visual Studio 2010, Professional Edition, Premium Edition, or Ultimate Edition with Service Pack 1 	<p>Only Visual Studio 2013 is supported for development for AX 2012 R3 CU8.</p> <p>For AX 2012 R3, once you install Cumulative Update 8 or any binary hotfix released after Cumulative Update 8, you must use Visual Studio 2013 for AX development.</p> <p>Visual Studio 2010 and 2012 can be installed side-by-side with Visual Studio 2013 if needed. Different versions of the AX 2012 Visual Studio Development Tools cannot be installed side-by-side.</p>
Trace Parser	No additional software requirements	
.NET Business Connector	No additional software requirements	

Supported software for version control

In a development environment, a central source control system is used to manage metadata changes when multiple developers are working on Microsoft Dynamics AX. The following table lists the version control systems that are supported with Microsoft Dynamics AX 2012.

Requirement	Notes
<p>Visual Studio Team Foundation Server 2013 (TFS) TFS 2013 is supported with the following updates:</p> <ul style="list-style-type: none"> • AX 2012 R3 • Cumulative update 7 for AX 2012 R2 • Cumulative update 7 for AX 2012 <p>–or–</p> <p>Visual Studio Online (Team Foundation Version Control)</p> <p>–or–</p> <p>Team Foundation Server 2012 TFS 2012 is supported with the following updates:</p> <ul style="list-style-type: none"> • Cumulative update 1 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2807685) for AX 2012 R2 • Cumulative update 5 (https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;EN-US;2828929) for AX 2012 <p>–or–</p> <p>Team Foundation Server 2010</p>	<p>Client computers that are running Visual Studio 2010 must have hotfix KB 2662296 (http://support.microsoft.com/kb/2662296) installed to use TFS source control with Microsoft Dynamics AX.</p> <p>Client computers that are not running Visual Studio 2010 must have the Team Foundation Server 2010 SP1 Object Model (https://visualstudiogallery.msdn.microsoft.com/a37e19fb-3052-4fc9-bef7-4a4682069a75) installed to use TFS source control with Microsoft Dynamics AX.</p> <p>For more information about how to use TFS with Microsoft Dynamics AX, see the white paper Change management and TFS integration for multi-developer projects (http://go.microsoft.com/fwlink/?LinkId=264935).</p>

Virtual client support

The Windows client for Microsoft Dynamics AX is certified to work as a virtual application on Microsoft Application Virtualization (App-V) 5.0. App-V 5.0 is supported by default with AX 2012 R3. For earlier releases of AX 2012, App-V 5.0 is supported with the following updates:

- [Cumulative update 1](#)
(<https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;ENUS;2807685>) for AX 2012 R2
- [Cumulative update 5](#)
(<https://mbs2.microsoft.com/Knowledgebase/KBDisplay.aspx?scid=kb;ENUS;2828929>) for AX 2012

App-V transforms applications into virtual services. When an application is virtual, it is no longer installed on a user's computer. Therefore, the application does not conflict with other applications. Updates are centrally managed, so that users are not prompted for updates or restarts.

Hardware and software requirements for Retail components

The following sections list the hardware and software requirements for computers that are required to implement Retail.

At the head office, we recommend adding a communications server to the server configuration that is required by Microsoft Dynamics AX. At the store, we recommend a computer for each register, and a database server. For more information about the recommended topologies for Retail, see [Deployment topologies for Retail](http://technet.microsoft.com/library/eda17d27-a0e0-4117-92a96a7e52f1b917(AX.60).aspx) ([http://technet.microsoft.com/library/eda17d27-a0e0-4117-92a96a7e52f1b917\(AX.60\).aspx](http://technet.microsoft.com/library/eda17d27-a0e0-4117-92a96a7e52f1b917(AX.60).aspx)).

The following components are included in the Retail solution.

Component	Notes
Retail Headquarters	
Retail POS	
Modern POS	AX 2012 R3 only
Commerce Data Exchange: Synch Service	Called Retail Store Connect in AX 2012 Feature Pack
Commerce Data Exchange: Real-time Service	Called Retail Transaction Service in AX 2012 Feature Pack
Commerce Data Exchange: Async Server	AX 2012 R3 only
Commerce Data Exchange: Async Client	AX 2012 R3 only
Retail Channel Configuration Utility	Called Retail Store Database Utility in AX 2012 R2 and AX 2012 Feature Pack
Retail SDK	Called Retail POS Plug-ins in AX 2012 Feature Pack
Retail online channel	AX 2012 R3 and AX 2012 R2 only. Also known as Retail online store or the Microsoft Dynamics AX ecommerce solution.
Retail mass deployment toolkit	AX 2012 R3 only
Retail channel database	AX 2012 R3 only
Retail Server	AX 2012 R3 only

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Component	Notes
Retail hardware station	AX 2012 R3 only

Hardware requirements for communications servers

The following table lists the hardware requirements for a communications server at the head office or at the store. A communications server runs Commerce Data Exchange components: Async Server, Async Client, Synch Service, and Real-time Service.

Item	Requirement
Processor	Minimum: Intel/AMD compatible 1.1 GHz (x86) or 1.4 GHz (x64) processor. Recommended: Intel/AMD compatible 2 GHz processor
RAM	Minimum: 1 GB Recommended: 2 GB
Available hard disk space	Minimum: 1.5 GB

Hardware requirements for the channel database computer

The channel database computer hosts a SQL Server database, and therefore must meet SQL Server hardware requirements. For more information, see one of the following pages, depending on the version of SQL Server that you use:

- [Hardware and Software Requirements for Installing SQL Server 2014](http://msdn.microsoft.com/enus/library/ms143506(v=sql.120).aspx)
(http://msdn.microsoft.com/enus/library/ms143506(v=sql.120).aspx)
- [Hardware and Software Requirements for Installing SQL Server 2012](http://msdn.microsoft.com/enus/library/ms143506(v=sql.110).aspx)
(http://msdn.microsoft.com/enus/library/ms143506(v=sql.110).aspx)
- [Hardware and Software Requirements for Installing SQL Server 2008 R2](http://msdn.microsoft.com/en-us/library/ms143506(v=sql.105).aspx)
(http://msdn.microsoft.com/en-us/library/ms143506(v=sql.105).aspx)
- [Hardware and Software Requirements for Installing SQL Server 2008](http://technet.microsoft.com/en-us/library/ms143506(v=sql.100).aspx)
(http://technet.microsoft.com/en-us/library/ms143506(v=sql.100).aspx)

Hardware requirements for a point-of-sale computer

The following table lists the hardware requirements for a point-of-sale register. The requirements apply whether or not an offline database is installed on the register computer. Each register computer that will be used to process card payments must also have Internet access.

Item	Requirement
Processor	Minimum: Intel/AMD compatible 1.4 GHz processor Recommended: Intel/AMD compatible 2 GHz processor
RAM	Minimum: 1 GB Recommended: 2 GB
Available hard disk space	Minimum: 1.5 GB
Monitor	Super VGA (1024 × 768) or higher-resolution monitor or a touch screen monitor
Mouse	Microsoft mouse or compatible pointing device

Supported peripheral devices for Retail

Each store must have enough peripheral devices, such as receipt printers, cash drawers, magnetic stripe reader (MSR) devices, and personal identification number (PIN) pad devices, for each register in the store.

Retail supports the following types of OLE for Point of Sale (OPOS) devices for registers:

- Cash drawers

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- Receipt printers
- Line or pole displays
- Dual displays (with a second monitor that faces the customer)
- MSRs
- Bar code scanners
- Scales
- Keylocks (keyboard locks for manager override keys)
- Keyboards
- PIN pads



Important:

OPOS Common Control Objects, version 1.13, are required for peripheral devices. After using an installation utility provided by a hardware manufacturer, confirm that the Common Control Objects have not been overwritten by an earlier version. To help avoid performance issues, verify that you are using the correct service objects for the hardware devices that you are using.

Supported operating systems for Retail components

The following tables list the operating systems that are supported for Retail components. Unless otherwise indicated, you must install the latest service pack for each operating system.

Supported server operating systems for Retail components

The following Retail components are typically installed on a server operating system:

- Async Server
- Real-time Service
- Retail SDK
- Retail online channel
- Retail mass deployment toolkit
- Retail channel database
- Retail Server
- Retail hardware station

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The following server operating systems are supported.

Operating system	Notes
Windows Server 2012 R2, Standard Edition or Datacenter Edition	Windows Server 2012 R2 is supported with AX 2012 R3 and cumulative update 7 for AX 2012 R2.
Windows Server 2012, Standard Edition or Datacenter Edition	Windows Server 2012 is supported with AX 2012 R3 and AX 2012 R2.
Windows Server 2008 R2 Standard Edition, Enterprise Edition, Web Edition, or Datacenter Edition	
Windows Server 2008 Standard Edition, Enterprise Edition, Web Edition, or Datacenter Edition	Only 64-bit versions of Windows Server 2008 are supported.

Supported client operating systems for Retail components

The following Retail components are installed on a client operating system:

- Retail POS
- Modern POS
- Async Client
- Retail channel databases
- Offline databases

The following client operating systems are supported. Both 32-bit and 64-bit versions of client operating systems are supported.

Operating system	Notes
Windows 8.1, Windows 8.1 Pro, or Windows 8.1 Enterprise –or– Windows 8, Windows 8 Pro, or Windows 8 Enterprise –or– Windows 7 Professional Edition, Ultimate Edition, or Enterprise Edition	<ul style="list-style-type: none">• Windows 8.1 is supported with AX 2012 R3, cumulative update 7 for AX 2012 R2, and cumulative update 5 for AX 2012.• Windows 8 is supported with AX 2012 R3 and AX 2012 R2.• Modern POS requires Windows 8.1 Update 1. Modern POS is available only with AX 2012 R3. If you have installed a pre-release version of Modern POS, you must uninstall it prior to installing the RTM version that is included in Cumulative update 8 for Microsoft Dynamics AX 2012 R3.

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Operating system	Notes
<p>Windows Embedded 8.1 Industry Edition (Retail) or Pro Edition</p> <p>—or—</p> <p>Windows Embedded 8 Industry Edition (Retail) or Pro Edition</p> <p>—or—</p> <p>Windows Embedded POSReady 7</p> <p>—or—</p> <p>Windows Embedded POSReady 2009</p>	<ul style="list-style-type: none"> • Windows Embedded is supported only for register computers in the store. • Windows Embedded 8.1 is supported with AX 2012 R3 and cumulative update 7 for AX 2012 R2. • Windows Embedded 8 is supported with AX 2012 R3 and AX 2012 R2. • Windows Embedded POSReady 7 is not supported for Retail components that are hosted in IIS. • Windows Embedded POSReady 2009 is supported only with AX 2012 R2 and AX 2012 Feature Pack. It is not supported with AX 2012 R3. <p>Because Windows Embedded POSReady 2009 is based on the Windows XP operating system, it is incompatible with the AX 2012 installer. To install Retail POS on Windows Embedded POSReady 2009, you must use the instructions in this blog post from the Microsoft Dynamics AX customer support team.</p>

Database requirements for retail databases

The following table lists the supported software for channel databases, message databases, and offline databases.


Requirement	Notes
<p>Microsoft SQL Server 2014, Express Edition, Standard Edition, or Enterprise Edition</p> <p>–or–</p> <p>SQL Server 2012, Express Edition, Standard Edition, or Enterprise Edition</p> <p>–or–</p> <p>SQL Server 2008 R2, Express Edition, Standard Edition, Enterprise Edition, or Datacenter Edition</p> <p>–or–</p> <p>SQL Server 2008, Express Edition, Standard Edition, or Enterprise Edition, with Service Pack 2</p>	<ul style="list-style-type: none"> SQL Server 2014 is supported with AX 2012 R3. To use SQL Server 2014 with AX 2012 R2, you must install cumulative update 7. To use SQL Server 2014 with AX 2012, you must install cumulative update 5. SQL Server 2012 is supported with AX 2012 R3 and AX 2012 R2. SQL Server Express editions are supported for channel databases, message databases, and offline databases. However, SQL Server Express editions are limited to a maximum of 10 GB storage, one physical processor, and 1 GB of internal memory. SQL Server change tracking is required for channel databases and message databases. Change tracking is available only in SQL Server Express with Advanced Services. It is not available in other SQL Server Express editions. Both 32-bit and 64-bit versions of SQL Server are supported.

Additional software requirements for Retail components

Some Retail components have additional requirements. The following table lists these requirements.

Component	Additional requirements	Notes
Retail Headquarters	Retail Headquarters must be installed on the same computers as the AOS and the Microsoft Dynamics AX client. Therefore, the supported operating systems for Retail Headquarters are the same as those for the AOS and the client.	
Retail POS	If the Retail POS register will include an offline database, you must install one of the supported versions of SQL Server.	

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Component	Additional requirements	Notes
Modern POS	<ul style="list-style-type: none"> • Windows 8.1  Important: Modern POS is supported only on Windows 8.1 Update 1. • Microsoft Visual C++ Runtime Package (VCLibs) 12.0 (version number 12.0.2.1005.0 or higher) • Windows Library for JavaScript (WinJS) 2.0 (version number 1.0.9600.16408 or higher) • If the Modern POS register will include an offline database, you must install one of the supported versions of SQL Server. 	
Synch Service	No additional software requirements	
Real-time Service	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 	
Async Server	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 	
Async Client	No additional software requirements	
Retail Channel Configuration Utility (Retail Store Database Utility)	No additional software requirements	
Retail SDK	<p>Visual Studio 2013 Update 3 is required for the Retail SDK in Microsoft Dynamics AX 2012 R3.</p> <p>To use the Modern POS sample code for Windows 8.1 with Visual Studio 2013, you must download TypeScript (http://go.microsoft.com/fwlink/?LinkId=396427) for Visual Studio. Version 1.0 or higher is required.</p>	

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Component	Additional requirements	Notes
Retail online store	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 • ASP.NET 2.0 • SharePoint Server 2013 (Enterprise License). Service Pack 1 is required with AX 2012 R3 and supported with cumulative update 7 for AX 2012 R2. • URL Rewrite Module 2.0 (http://go.microsoft.com/fwlink/?LinkID=277134&clcid=0x409) (64-bit) 	<ul style="list-style-type: none"> • Verify that the SharePoint server(s) that will host the Retail online store meet the following requirements: 16 GB of RAM recommended; 10 GB of RAM and 4 processors, minimum. <p>For information about hardware and software requirements for SharePoint, see Hardware and software requirements for SharePoint 2013 (http://go.microsoft.com/fwlink/?LinkID=282601).</p> <ul style="list-style-type: none"> • The following services must be enabled and running in SharePoint Server 2013: • Managed metadata service • SharePoint Search service • Search Host Controller service • SharePoint Timer service • SharePoint Administration service
Retail mass deployment toolkit	Microsoft System Center Configuration Manager 2012 R2	
Retail Server	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 	
Retail hardware station	<ul style="list-style-type: none"> • Web server role • IIS 7.0, IIS 7.5, or IIS 8.0 	

64-bit operating system support

The following table summarizes how Microsoft Dynamics AX components run on 64-bit operating systems.

Component	Runs on a 32-bit operating system	Runs on a 64-bit operating system	Notes
Application Object Server (AOS)	Not recommended	Yes	A 64-bit operating system is required if you must complete a full generation of Common Intermediate Language (CIL), such as in a development environment.
Windows client	Yes	Yes	The Windows client runs in 32-bit mode on 64-bit operating systems.
Office Add-ins	Yes	Yes	
Remote Desktop Services integration	Yes	Yes	
Enterprise Portal and Enterprise Search	No	Yes	
Help Server	No	Yes	
Reporting Services extensions	Not recommended	Yes	The 32-bit version of Reporting Services can be installed on a 64-bit operating system. However, the Microsoft Dynamics AX Reporting Services extensions are not supported in this scenario.
Synchronization service	Yes	Yes	
Synchronization proxy	No	Yes	
Web services on IIS	Yes	Yes	
.NET Business Connector	Yes	Yes	Both the 32-bit and 64-bit versions of .NET Business Connector are installed when you use a 64-bit operating system.

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Component	Runs on a 32-bit operating system	Runs on a 64-bit operating system	Notes
Debugger	Yes	Yes	
Visual Studio Tools	Yes	Yes	Visual Studio Tools runs in 32-bit mode on 64-bit operating systems.
Retail Headquarters	Yes	Yes	
Retail POS	Yes	Yes	Retail POS runs in 32-bit mode on 64-bit operating systems.
Modern POS	Yes	Yes	
Async Server	No	Yes	
Async Client	Yes	Yes	
Commerce Data Exchange: Synch Service	Yes	Yes	
Commerce Data Exchange: Real-time Service	Yes	Yes	
Retail Channel Configuration Utility (Retail Store Database Utility)	Yes	Yes	
Retail SDK	Yes	Yes	
Retail Server	Yes	Yes	
Retail hardware station	Yes	Yes	
Retail Online Channel	No	Yes	