



## **Microsoft Dynamics AX 2012 System Requirements**

Microsoft Corporation

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## Microsoft Dynamics AX

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## Table of Contents

System requirements for Microsoft Dynamics AX 2012 .....	4
Network requirements .....	4
Network response time .....	4
Local area network (LAN) environments .....	4
Wide area network (WAN) environments .....	4
Domain requirements .....	5
Minimum hardware .....	5
Software requirements for all computers .....	6
Software requirements for server computers .....	7
Supported server operating systems .....	7
Software requirements for database servers .....	8
Software requirements for other Microsoft Dynamics AX server components .....	8
Virtual server support .....	11
Software requirements for client computers .....	12
Supported client operating systems .....	12
Software requirements for the Microsoft Dynamics AX client .....	12
Software requirements for other client components .....	13
Virtual client support .....	14
Hardware and software requirements for Retail components .....	15
Hardware requirements for communications servers .....	15
Hardware requirements for the store database computer .....	15
Hardware requirements for a point-of-sale computer .....	16
Supported peripheral devices for Retail .....	16
Supported operating systems for Retail components .....	17
Database requirements for the retail store database .....	17
64-bit operating system support .....	18

# System requirements for Microsoft Dynamics AX 2012

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

### Local area network (LAN) environments

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

### Wide area network (WAN) environments

Terminal Services is not required when bandwidth constraints do not exist, and when user interactions on the client require 6 or fewer round trips. With an average of 100 milliseconds latency, we expect a delay of approximately 600 milliseconds. Customizations and data configurations will require optimization to reduce round trips to 6 or fewer round trips per user interaction.

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

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



**Notes:**

Windows Server 2008 R2 Remote Desktop Services, or Terminal Services, includes TS RemoteApp, TS Easy Print, and TS Web Access. For more information about how to use Terminal Services, see the [Terminal Services site](#) on Microsoft TechNet.

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


## Domain requirements

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

- Computers that run Microsoft Dynamics AX components must belong to an Active Directory domain, and Active Directory must be configured in native mode.
- Computers that run 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.
- To support e-mail alerts in Microsoft Dynamics AX, an SMTP (Simple Mail Transfer Protocol) server must be present in the environment.

## Minimum hardware

The following table lists the minimum hardware that is required to install and run Microsoft Dynamics AX.

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 higher.   <b>Important:</b> Microsoft Dynamics AX is not supported on Itanium 64-bit processors.
RAM	We recommend 4 GB or more of RAM for server computers. We recommend 2 GB or more of RAM for client computers.
Monitor	Super VGA (1024x768) or higher resolution monitor
Other	A DVD drive is required for an installation from a DVD.

## 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
- The number of remote connections
- The number of locations

## 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  
Most Microsoft Dynamics AX components, including the Setup wizard, require .NET Framework 3.5 with Service Pack 1. For those components that require .NET Framework 4.0, 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
- 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

## 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 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 type 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

The following table lists the software requirements for servers where you install the Microsoft Dynamics AX databases.

Requirement	Notes
<p>Microsoft SQL Server 2008, Standard or Enterprise edition, with Service Pack 1</p> <p>–or–</p> <p>SQL Server 2008 R2, Standard, Enterprise, or Datacenter edition. <a href="#">Service Pack 1</a> is supported, but not required.</p>	<ul style="list-style-type: none"> <li>Only 64-bit versions of SQL Server are supported.</li> <li>For the minimum hardware requirements for SQL Server, see <a href="http://www.microsoft.com/sql/default.mspx">http://www.microsoft.com/sql/default.mspx</a>.</li> <li>In a production environment, we recommend that you install the latest Cumulative Update for the version of SQL Server that you are using.</li> </ul>
Collation	<p>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 <a href="#">SQL Server documentation</a>.</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"> <li>.NET Framework 4.0, with the hotfix from Knowledge Base article <a href="#">2390372</a>.</li> <li>SQL Server 2008 Native Client</li> </ul>	Install SQL Server Native Client on the AOS server if the AOS server is separate from the database server.



Component	Additional requirements	Notes
Enterprise Portal	<ul style="list-style-type: none"> <li>• Web server role</li> <li>• IIS 7.0 or IIS 7.5</li> <li>• ASP.NET 2.0</li> <li>• Microsoft SharePoint Foundation 2010</li> <li style="text-align: center;">–or–</li> <li>• Microsoft SharePoint Server 2010, Standard Edition or Enterprise Edition (recommended)</li> <li>• SQL Server 2008 R2 Analysis Management Objects (AMO)</li> </ul>	SharePoint Server 2010, Standard Edition or Enterprise Edition, 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.
Enterprise Search	<ul style="list-style-type: none"> <li>• Web server role</li> <li>• IIS 7.0 or IIS 7.5</li> <li>• ASP.NET 2.0</li> <li>• Windows PowerShell 2.0</li> <li>• Microsoft Search Server 2010</li> <li style="text-align: center;">–or–</li> <li>• Microsoft Search Server Express 2010</li> <li style="text-align: center;">–or–</li> <li>• Microsoft Fast Search Server 2010</li> <li style="text-align: center;">–or–</li> <li>• SharePoint Server 2010, Standard Edition or Enterprise Edition (recommended)</li> </ul>	
Help Server	<ul style="list-style-type: none"> <li>• Web server role</li> <li>• IIS 7.0 or IIS 7.5</li> <li>• ASP.NET 4.0</li> </ul>	

## Microsoft Dynamics AX

Component	Additional requirements	Notes
Reporting Services extensions	<ul style="list-style-type: none"> <li>• If you are using SQL Server 2008 R2, <a href="#">Cumulative Update 3</a> or a later update is required.</li> <li>• SQL Server 2008 Reporting Services</li> <li>• <a href="#">Windows PowerShell 2.0</a></li> </ul>	<ul style="list-style-type: none"> <li>• The Reporting Services integration is not supported on a report server that is configured to run in SharePoint integrated mode.</li> <li>• The Reporting Services integration is not supported on computers where instances of Reporting Services 2005 and Reporting Services 2008 are installed side by side.</li> <li>• By default, Windows PowerShell 2.0 is installed on Windows Server 2008 R2. On Windows Server 2008 Service Pack 1, Windows PowerShell 2.0 must be installed manually. Before you install version 2.0, make sure that <a href="#">version 1.0 has been removed</a>.</li> </ul>
Analysis Services integration	<ul style="list-style-type: none"> <li>• SQL Server 2008 Analysis Services</li> <li>• SQL Server Management Studio</li> <li>• SQL Server Business Intelligence Development Studio</li> </ul>	The Analysis Services integration is not supported on computers where instances of Analysis Services 2005 and Analysis Services 2008 are installed side by side.
Web services on IIS	<ul style="list-style-type: none"> <li>• Web server role</li> <li>• .NET Framework 4.0</li> <li>• IIS 7.0 or IIS 7.5</li> <li>• If you use web services to exchange documents with external partners, we recommend that you install the <a href="#">Windows SDK</a>.</li> </ul>	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.

Component	Additional requirements	Notes
Management utilities	<a href="#">Windows PowerShell 2.0</a>	By default, Windows PowerShell 2.0 is installed on Windows Server 2008 R2. On Windows Server 2008 Service Pack 1, Windows PowerShell 2.0 must be installed manually. Before you install version 2.0, make sure that <a href="#">version 1.0 has been removed</a> .

### Virtual server support

Microsoft Dynamics AX is certified on Windows Server 2008 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](#).

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](#). 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
- 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.

Operating system	Notes
Windows 7 Professional Edition, Ultimate Edition, or Enterprise Edition	Both 32-bit and 64-bit versions of Windows 7 are supported.
Windows Vista Business Edition, Ultimate Edition, or Enterprise Edition, with Service Pack 2	Both 32-bit and 64-bit versions of Windows Vista are supported.

## 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
.NET Framework 4.0	
Internet Explorer 9.0 –or– Internet Explorer 8.0 –or– Mozilla Firefox 3.5	A Web browser is required for client computers that access Enterprise Portal.  <b>Note:</b> 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.

Requirement	Notes
2007 Microsoft Office release, Service Pack 2 –or– 2010 Office release	Office is required for Outlook, Microsoft Word, and Microsoft Excel integrations with Microsoft Dynamics AX.
SQL Server 2008 R2 Analysis Management Objects (AMO)	<ul style="list-style-type: none"> <li>• AMO is required on client computers that are used to administer the OLAP database.</li> <li>• x86 download: <a href="http://go.microsoft.com/fwlink/?LinkID=188447">http://go.microsoft.com/fwlink/?LinkID=188447</a></li> <li>• x64 download: <a href="http://go.microsoft.com/fwlink/?LinkID=188448">http://go.microsoft.com/fwlink/?LinkID=188448</a></li> </ul>

## 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"> <li>• Word or Excel</li> <li>• Open XML SDK for Microsoft Office 2.0</li> <li>• Visual Studio Tools for the Microsoft Office System (VSTO) 4.0</li> </ul>	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 <a href="#">Software requirements for the Microsoft Dynamics AX client</a> .
Remote Desktop Services integration	No additional software requirements	
Debugger	No additional software requirements	
Visual Studio Tools	<ul style="list-style-type: none"> <li>• Windows PowerShell 2.0</li> <li>• Visual Studio 2010, Standard Edition or Professional Edition, with Service Pack 1</li> </ul>	
Trace Parser	No additional software requirements	
.NET Business Connector	No additional software requirements	

### **Virtual client support**

The Windows client for Microsoft Dynamics AX is certified to work as a virtual application on Microsoft Application Virtualization (App-V) 4.6.

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 Microsoft Dynamics AX for Retail.

We recommend a minimum of four computers at the head office: the AOS computer, the database server, a communications server, and at least one client computer. At the store, we recommend a communications server, one computer for each register, and a database server. For more information about the recommended topologies for Microsoft Dynamics AX for Retail, see the [Retail Deployment Guide: Microsoft Dynamics AX 2012](#).

The following components are included in the Microsoft Dynamics AX for Retail solution:

- Retail Headquarters
- Retail POS (point of sale)
- Retail Store Connect
- Retail Transaction Service
- Retail Store Database Utility
- Retail POS Plug-Ins

### Hardware requirements for communications servers

The following table lists the hardware requirements for a communications server at the head office or at the store.

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 store database computer

The store database computer hosts a SQL Server database, and therefore must meet SQL Server hardware requirements. For more information, see [Hardware and Software Requirements for Installing SQL Server 2008 R2](#) and [Hardware and Software Requirements for Installing SQL Server 2008](#).

## 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. Microsoft Dynamics AX for Retail supports the following types of OLE for Retail (OPOS) devices for registers:

- Cash drawers
- Receipt printers
- Line or pole displays
- Dual displays (with a second monitor that faces the customer)
- Magnetic stripe readers (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 table lists the operating systems that are supported for Retail components. Unless otherwise indicated, you must install the latest service pack for each operating system.

 **Note:**

The Retail Headquarters component must be installed on a computer where the Microsoft Dynamics AOS or client is installed. Therefore, the supported operating systems for Retail Headquarters are the same as those for the AOS and client.

Operating system	Notes
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.
Windows 7 Professional Edition, Ultimate Edition, or Enterprise Edition	Both 32-bit and 64-bit versions of Windows 7 are supported.
Windows Embedded POSReady 7 –or– Windows Embedded POSReady 2009	Both 32-bit and 64-bit versions of Windows Embedded POSReady are supported.   <b>Note:</b> Windows Embedded POSReady is supported only for register computers in the store. Retail Headquarters is not supported on this operating system.

## Database requirements for the retail store database

The following table lists the supported software for the retail store database.

Requirement	Notes
SQL Server 2008 R2, Express, Standard, Enterprise, or Datacenter edition –or– Microsoft SQL Server 2008, Express, Standard, or Enterprise edition, with Service Pack 2	Both 32-bit and 64-bit versions of SQL Server are supported.

## 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	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.
Debugger	Yes	Yes	
Visual Studio Tools	Yes	Yes	Visual Studio Tools runs in 32-bit mode on 64-bit operating systems.