



# Cisco WAAS Installation and Configuration Guide for Windows on a Virtual Blade

---

Revised: September 4, 2008, OL-17730-01

## Contents

This document describes how to install and configure the Windows Server on WAAS product. This document includes the following sections:

- [Installing Windows Server on WAAS, page 1](#)
- [Installing Your Own Copy of Windows Server, page 7](#)
- [Configuring Windows Server 2008, page 8](#)
- [Reinstalling Windows Server 2008, page 9](#)
- [Backing Up the Virtual Blade, page 9](#)
- [Displaying Version Information, page 10](#)
- [Related Documentation, page 10](#)
- [Obtaining Documentation and Submitting a Service Request, page 11](#)

The Windows Server on WAAS product includes running Windows Server 2008 Core in a virtual blade on a supported WAAS device. This product supports running only the following Windows services: Active Directory, Print Services, DHCP, and DNS.



### Note

---

Before configuring a virtual blade, you must configure the Enterprise and Virtual Blade licenses on the WAAS device. You should also establish network connectivity, including registering the WAAS device with a WAAS Central Manager.

---

## Installing Windows Server on WAAS

This section describes how to install the Windows Server on WAAS product.



---

**Americas Headquarters:**  
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

The WAAS device that you have purchased with Windows Server on WAAS contains the Windows Server 2008 installer ISO image already stored on the hard disk of the WAAS device. If you are installing Windows Server on WAAS on a previously purchased WAE device on which Windows Server on WAAS is supported but not preinstalled, you will need to copy the Windows Server on WAAS files from the Microsoft Windows Server 2008 for Cisco WAAS, Recovery DVD.

To install Windows Server on WAAS, follow these steps:

---

**Step 1** Configure the WAE device with a virtual blade and start the virtual blade. For details on configuring a virtual blade, see [Chapter 14, “Configuring Virtual Blades”](#) in the *Cisco Wide Area Application Services Configuration Guide*.

We recommend the following configuration and minimum resource allocations for the virtual blade:

- For memory and disk space allocations, see the Microsoft recommendations: <http://www.microsoft.com/windowsserver2008/en/us/system-requirements.aspx>
- Configure a virtual interface to bridge between the virtual blade and a physical Gigabit Ethernet interface or port channel on the WAAS device.
- Configure the virtual blade to boot from the Windows Server 2008 ISO image that is stored on the WAE. The location of the preloaded Windows Server 2008 installer ISO image is `/local1/vbs/WoW_1.0.1.iso`. If the Windows Server on WAAS ISO image is not preinstalled on the WAE, perform Step 2 before starting the virtual blade.

**Step 2** (Optional) If you are installing Windows Server on WAAS on a WAE device that does not have the Windows Server on WAAS ISO image preinstalled, insert the Microsoft Windows Server 2008 for Cisco WAAS, Recovery DVD into the WAE CD/DVD drive and copy the Windows Server on WAAS files to the WAE device with the following EXEC mode command:

```
wae# copy cdrom wow-recovery / WoW_RECOVERY
```

This command copies the Windows Server on WAAS files to the proper directory (`/local1/vbs`) on the WAE.

**Step 3** After the virtual blade starts, use a Virtual Network Computing (VNC) client to connect to the virtual blade console to monitor the unattended installation. The virtual machine may reboot during the installation process.

The IP address of the virtual blade console is the IP address of the WAAS device with the virtual blade number specified after a colon (for example: `10.10.10.40:1`). The VNC client adds 5900 to the virtual blade number to determine the port to connect to on the virtual blade. For virtual blade 1 this would be port 5901.

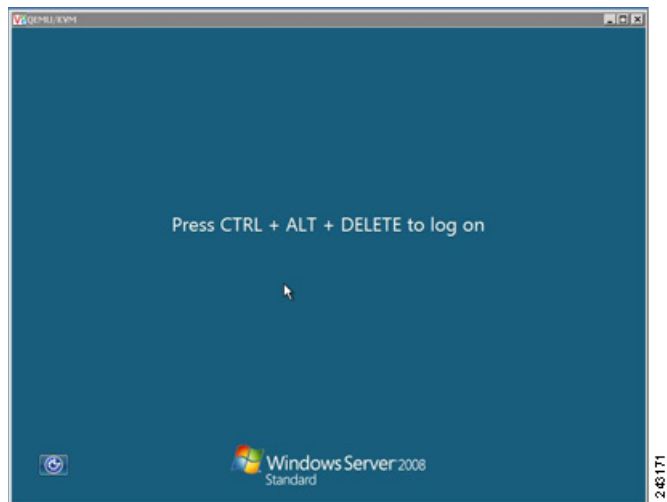


**Caution**

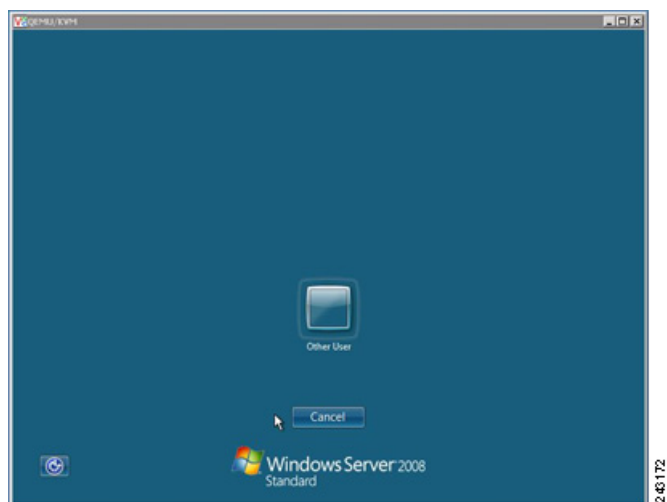
Do not stop or interrupt the virtual blade during Windows installation.

---

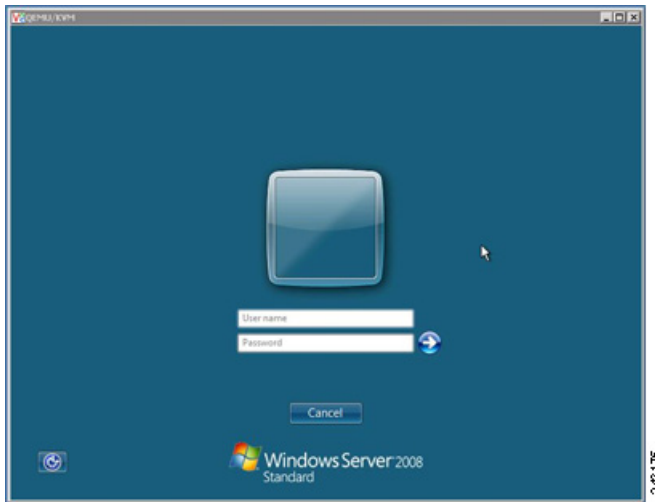
When Windows finishes the install process and reboots, the initial screen appears.



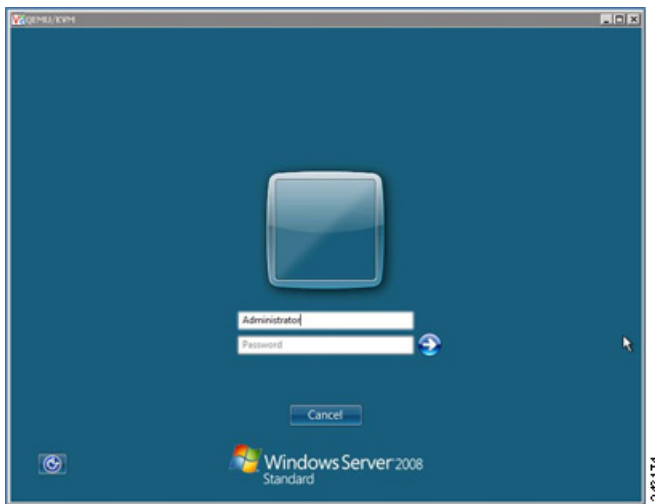
**Step 4** Send a **Ctrl+Alt+Del** keystroke to the virtual blade console with the VNC client. The log on screen is displayed.



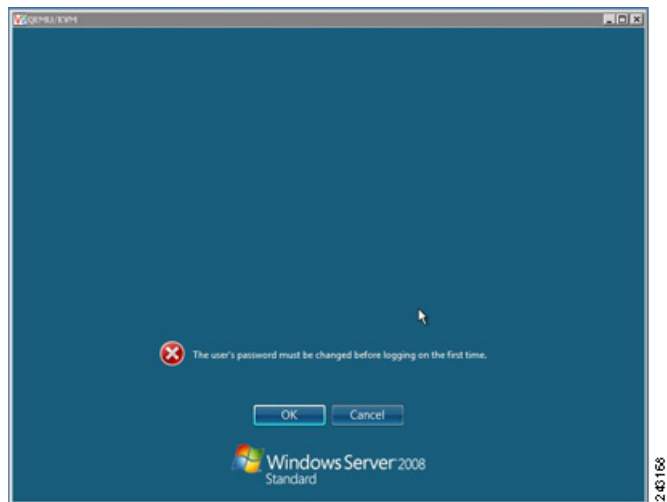
**Step 5** Click the **Other User** button. The username and password screen appears.



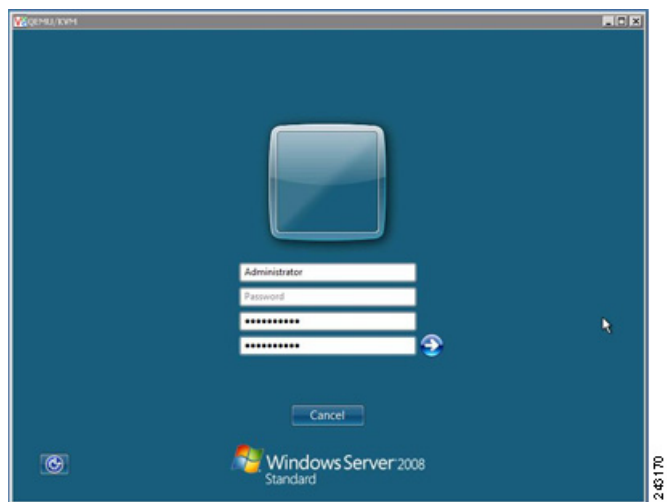
**Step 6** Enter **Administrator** as the username to log into the Administrator account.



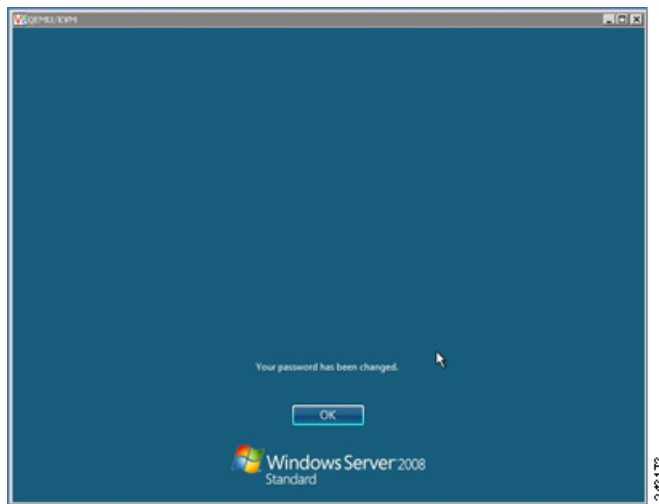
**Step 7** Leave the Password field untouched and click the blue arrow (or press **Enter**). The change password screen appears.



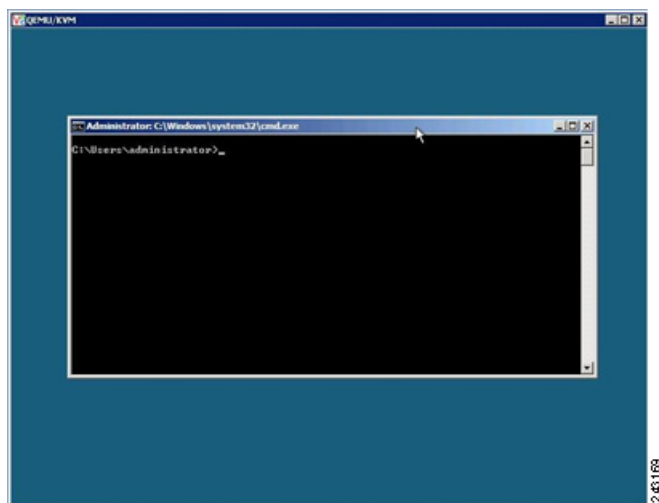
**Step 8** Click **OK** (or press **Enter**). The new password screen appears.



**Step 9** Leave the first Password field blank and enter a new password twice, in each of the lower two fields, and click the blue arrow (or press **Enter**). The confirmation screen appears.



**Step 10** Click **OK** (or press **Enter**). The Administrator user is logged in and, after preparing the desktop, the initial desktop screen appears.



**Step 11** Perform any site-specific Windows Server 2008 configuration that you require. For information on Windows Server 2008 configuration, see the Microsoft documentation on Windows Server 2008 at: <http://www.microsoft.com/windowsserver2008/en/us/product-documentation.aspx>

You can verify that Windows Server 2008 is successfully activated by entering the following command at the Windows prompt: **cscript %windir%\system32\slmgr.vbs -dlv**

The License Status field displays “Licensed” if activation was successful.

# Installing Your Own Copy of Windows Server

You can install your own copy of Windows Server on an existing WAAS device that has virtual blade capability and for which you have purchased the virtual blade license. The WAE devices that support virtual blades support Windows Server 2003 R2 with SP2 (32-bit Enterprise Edition) and all 32-bit and 64-bit editions of Windows Server 2008.

To install Windows Server, follow these steps:

- Step 1** Configure the WAE with a virtual blade and start the virtual blade. For details on configuring a virtual blade, see [Chapter 14, “Configuring Virtual Blades”](#) in the *Cisco Wide Area Application Services Configuration Guide*.

We recommend the following configuration and minimum resource allocations for the virtual blade:

- For memory and disk space allocations, see the Microsoft recommendations for Windows Server 2008 at: <http://www.microsoft.com/windowsserver2008/en/us/system-requirements.aspx> or for Windows Server 2003 at: <http://technet.microsoft.com/en-us/windowsserver/bb430827.aspx>
- Configure a virtual interface to bridge between the virtual blade and a physical Gigabit Ethernet interface or port channel on the WAAS device.
- Configure the virtual blade to boot from the physical CD-ROM and insert the Windows Server installer DVD into the CD/DVD drive on the WAE before starting the virtual blade. Alternatively, configure the virtual blade to boot from an ISO image stored on the WAE disk. To copy an ISO image to the virtual blade staging area on the WAE, use this EXEC mode CLI command on the WAE:

```
copy ftp disk ftp_server_ip ftp_server_directory iso_filename /local1/vbs/iso_filename
```

For example:

```
wae# copy ftp disk 10.0.2.4 WAAS winserver.iso /local1/vbs/winserver.iso
```

- Step 2** After the virtual blade starts, use a Virtual Network Computing (VNC) client to connect to the virtual blade console to monitor and respond as needed during the installation. The virtual machine may reboot during the installation process.

The IP address of the virtual blade console is the IP address of the WAAS device with the virtual blade number specified after a colon (for example: 10.10.10.40:1). The VNC client adds 5900 to the virtual blade number to determine the port to connect to on the virtual blade. For virtual blade 1 this would be port 5901.

- Step 3** If you installed Windows Server from a physical DVD, reconfigure the virtual blade to boot from the WAE disk, instead of the physical CD/DVD drive:
- a. Shut down Windows Server.
  - b. Stop the virtual blade.
  - c. Eject the Windows Server DVD from the WAAS device.
  - d. Reconfigure the virtual blade to boot from disk instead of CD-ROM.
  - e. Restart the virtual blade.

- Step 4** Windows activation is not automatic and you will need to activate Windows using the product key that came with your Windows Server install DVD. If you are installing a Windows Server Core edition, which has no GUI interface, you can follow these steps to activate Windows:
- Install your product key by entering the following command at the Windows prompt:  
**cscript %windir%\system32\slmgr.vbs -ipk *productkey***
  - Activate Windows by entering the following command:  
**cscript %windir%\system32\slmgr.vbs -ato**
- 

If you need to reinstall Windows, delete the virtual blade, recreate it, and reinstall Windows.

If all of the WAAS software needs to be reinstalled, reinstall WAAS by using the WAAS software recovery CD, recreate the virtual blade, and reinstall Windows by using your physical Windows install DVD or an ISO image.

## Configuring Windows Server 2008

After installation, you must configure some basic Windows Server 2008 Core settings to establish network connectivity.

From the Windows Server 2008 Core command prompt, follow these steps:

- Step 1** Display and write down the server's randomly generated computer name with the **hostname** command.

```
hostname
```

- Step 2** Rename the server using the **netdom** command.

```
netdom renamecomputer CurrentComputerName /NewName:NewComputerName
```

The Windows Server will prompt to be restarted.

- Step 3** Get the network interface index:

```
netsh interface ipv4 show interfaces
```

Find the number in the Idx column of the Local Area Connection target interface. Use this value in the following **netsh** commands (in Steps 4 and 5) for the *ID* parameter.

- Step 4** Configure the IP address and default gateway.

```
netsh interface ipv4 set address name="ID" source=static address=IPAddress mask=SubnetMask gateway=DefaultGateway
```

- Step 5** Configure the DNS server address,

```
netsh interface ipv4 add dnsserver name="ID" address=DNSIPAddress index=1
```

- Step 6** Set the time and date by opening the Time/Date control panel.

```
Control timedate.cpl
```

- Step 7** Enable Remote Desktop Protocol (RDP) access to the Windows server.

```
cscript %windir%\System32\Scregedit.wsf /ar 0
```

- Step 8** Verify the RDP settings:

```
cscript %windir%\System32\Scregedit.wsf /ar /v
```

**Step 9** Allow RDP connections from a down-level RDP client.

```
cscript %windir%\System32\Scregedit.wsf /cs 0
```

**Step 10** Adjust the firewall rules to allow RDP traffic.

```
netsh advfirewall firewall set rule group="Remote Desktop" new enable=yes
```

---

You can now access the Windows Server through RDP.

You will need to configure core services such as Active Directory, Print Services, DHCP, and DNS. For detailed information on configuring a server core installation, see the Microsoft TechNet article [Server Core Installation Option of Windows Server 2008 Step-By-Step Guide](#) and other Microsoft documentation.

## Reinstalling Windows Server 2008

If the Windows software needs to be reinstalled, delete the virtual blade, recreate it, and reinstall Windows Server 2008. Follow the same procedure as in the [“Installing Windows Server on WAAS” section on page 1](#). Windows activation will work again.

If all of the WAAS software needs to be reinstalled, follow these steps:

---

**Step 1** Reinstall WAAS by using the WAAS software recovery CD.

**Step 2** Add the Enterprise and Virtual Blade licenses, either through the setup utility when you first boot the WAAS device, or by using the following EXEC commands:

```
license add Enterprise
license add Virtual-Blade
```

**Step 3** Enable and reconfigure the virtual blade.

**Step 4** Insert the Microsoft Windows Server 2008 for Cisco WAAS, Recovery DVD and enter the following EXEC command: **copy cdrom wow-recovery / WoW\_RECOVERY**

This command copies the Windows Server on WAAS files to the proper directory (/local1/vbs) on the WAE.

**Step 5** Continue with Windows reinstallation as described in the [“Installing Windows Server on WAAS” section on page 1](#).

---

## Backing Up the Virtual Blade

If you need to replace your WAAS device, we recommend that you back up the virtual blade so that the virtualized Windows services can be restored on the replacement device.

To make a backup image of the virtual blade, follow these steps:

---

**Step 1** Shut down Windows Server before stopping the virtual blade.

- Step 2** Stop the virtual blade as follows:
- a. From the WAAS Central Manager GUI navigation pane, choose **My WAN > Manage Devices**.
  - b. Click the **Edit** icon next to the device containing the virtual blade.
  - c. From the navigation pane, choose **Admin > Virtualization > Actions**.
  - d. Click the **Stop Virtual Blade** button.

**Step 3** Log into the WAAS device command line interface.

**Step 4** Copy the virtual blade image to an FTP server with the **copy ftp** command, as follows:

```
copy virtual-blade 1 disk 1 ftp ftp_server_ip ftp_server_directory filename
```

For example, to copy the virtual blade image to the FTP server at 10.0.2.4, to the WAAS directory, in the vb1.img file, use this command:

```
wae# copy virtual-blade 1 disk 1 ftp 10.0.2.4 WAAS vb1.img
```

To restore the virtual blade image to a WAAS device from an FTP server, use the **copy ftp** command again:

```
copy ftp virtual-blade 1 disk 1 ftp_server_ip ftp_server_directory filename
```

For example, to copy the virtual blade image to the WAAS device from the FTP server at 10.0.2.4, from the WAAS directory, in the file vb1.img, use this command:

```
wae# copy ftp virtual-blade 1 disk 1 10.0.2.4 WAAS VB1.img
```

## Displaying Version Information

To display the version information for Windows Server on WAAS, enter the following command at the Windows prompt: **cscript %windir%\system32\oem.vbs**

The command output looks similar to the following:

```
Manufacturer: Cisco Systems Inc
Version: WoW_1.0.1
Support Hours: 9am - 5pm
Support URL : http://www.cisco.com
```

## Related Documentation

For additional information on the Cisco WAAS software, see the following documentation:

- *Release Note for Cisco Wide Area Application Services*
- *Cisco Wide Area Application Services Configuration Guide*
- *Cisco Wide Area Application Services Quick Configuration Guide*
- *Cisco Wide Area Application Services Command Reference*
- *Cisco Wide Area Application Services API Reference*

# Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

---

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

CCDE, CCENT, CCSI, Cisco Eos, Cisco Explorer, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Nurse Connect, Cisco Pulse, Cisco SensorBase, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco TrustSec, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Flip for Good, Flip Mino, Flipshare (Design), Flip Ultra, Flip Video, Flip Video (Design), Instant Broadband, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn, Cisco Capital, Cisco Capital (Design), Cisco:Financed (Stylized), Cisco Store, Flip Gift Card, and One Million Acts of Green are service marks; and Access Registrar, Aironet, AllTouch, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Lumin, Cisco Nexus, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, Continuum, EtherFast, EtherSwitch, Event Center, Explorer, Follow Me Browsing, GainMaker, iLINUX, IOS, iPhone, IronPort, the IronPort logo, Laser Link, LightStream, Linksys, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, PCNow, PIX, PowerKEY, PowerPanels, PowerTV, PowerTV (Design), PowerVu, Prisma, ProConnect, ROSA, SenderBase, SMARTnet, Spectrum Expert, StackWise, WebEx, and the WebEx logo are registered trademarks of Cisco and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1002R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

© 2008-2010 Cisco Systems, Inc. All rights reserved.

