



Implementing Microsoft® Windows® Server 2008 Hyper-V Release Candidate 1 on HP ProLiant servers

integration note

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Abstract

This integration note describes the level of support available for Microsoft® Windows® Server 2008 Virtualization (Hyper-V) Release Candidate 1 (RC1), a new hypervisor-based software platform for running multiple guest operating systems on a single server. Windows Server 2008 Hyper-V RC1 will install on top of Windows Server 2008 Standard, Enterprise, or Datacenter x64 edition installations, both full and server core.

IMPORTANT

Windows Server 2008 Hyper-V, while made available on the final Windows Server 2008 product, is still a beta program.

Support from Microsoft for Hyper-V will be through blogs (<http://blogs.technet.com/virtualization/>) and the following newsgroups:

- Virtual PC: Microsoft.public.virtualpc
- Virtual Server: Microsoft.public.virtualserver

Microsoft support centers are not accepting Windows Server 2008 Hyper-V RC1 related questions until the product reaches Release To Manufacturing (RTM) status.

HP will answer beta related questions for Windows Server 2008 Hyper-V RC1 through the hyper-vbeta@hp.com mailbox. HP Services will not support Windows Server 2008 Hyper-V RC1 until Microsoft changes the status of the product to RTM.

The purpose of this paper is to help customers who test pre-release versions of Windows Server 2008 Hyper-V. The HP supported products listed herein are subject to change with future releases of Windows Server 2008 Hyper-V.

This paper addresses several key topics:

- Recommended system configurations
 - Hardware prerequisites for Windows Server 2008 Hyper-V RC1
 - Supported configurations of ProLiant servers
 - Procedures for new installations
 - Known issues and workarounds
-

NOTE

For information on Windows Server 2008, visit the HP website at www.hp.com/go/ws2008.

Windows Server 2008 information is available on the Microsoft website at www.microsoft.com/windowsserver2008/default.mspx.

For additional technical information, visit the Microsoft website at <http://technet2.microsoft.com/windowsserver2008/en/servermanager/virtualization.mspx>.

Introduction to Windows Server 2008 Hyper-V RC1

Administrators want flexibility in allocating computing resources for specific tasks. Virtualization technologies provide this flexibility by decoupling the hardware from the workload being performed. Windows Server 2008 Hyper-V RC1 offers a robust, scalable hypervisor-based virtualization platform allowing enterprises to provision and manage virtual server workloads.

Windows Server 2008 Hyper-V RC1 offers the following benefits over Microsoft Virtual Server 2005 R2:

- Full integration with Windows Server 2008 (installed as server role).
- Support for both 64-bit and 32-bit guest OSs.
- Ability to assign up to four virtual CPUs and 32 GB RAM to each guest OS.
- Improved management interface.
- Extensible VMBus architecture that improves performance by lowering the overhead of guest OS I/O.

Terminology

Administrators should become familiar with the following terms in relation to virtualization technologies:

- **Host operating system:** The OS on the physical computer running the Windows Server 2008 Hyper-V RC1 software.
- **Guest operating system:** The OS running on a virtual machine.
- **Parent virtual machine:** The physical computer that hosts one or more child virtual machines.
- **Child virtual machine:** The guest OSs running in separate partitions on the host OS.
- **Partition:** A virtual machine.
- **Virtual hard disk:** The VHD file, which provides storage for the virtual machines.
- **Windows hypervisor:** The layer of software that leverages the Windows Server driver support and hardware assisted virtualization technology.

Applicable environments

Microsoft defines the following scenarios as target environments for Windows Server 2008 Hyper-V RC1:

- **Production Server Consolidation:** Windows Server 2008 Hyper-V RC1 can be beneficial for organizations wanting to consolidate servers to better utilize hardware resources or reduce power and space constraints in their data centers.
- **Business Continuity Management:** Windows Server 2008 Hyper-V RC1 can minimize the impact of unscheduled downtime for an efficient and flexible disaster recovery solution.
- **Software Test and Development:** Administrators can allocate a child partition to development resources to reduce the amount of server hardware required in the data center.
- **Dynamic Data center:** Administrators will have the capability to dynamically add resources to virtual machines and move them across physical machines without affecting users.

New in Windows Server 2008 Hyper-V RC1

Below is a list of new technologies included in Windows Server 2008 Hyper-V RC1:

- **Quick Migration:** The ability to move running virtual machines from one host server to another with minimal downtime.
- **High Availability:** Support for host-to-host connectivity and cluster support for all virtual machines running on a host server.
- **Server Core Role:** Support for Windows Server 2008 Hyper-V RC1 as a role within Server Core based installations of Windows Server 2008.
- **Server Manager Integration:** Installation of the role available within the Server Manager administrative console.
- **Live Backups with VSS:** Support for Volume Shadow Copy Services (VSS) enabling live snapshot backups of running Virtual Machines.
- **Virtual Hard Disk (VHD) Tools:** VHD tools to enable compaction, expansion, and inspection of VHDs created with Windows Server 2008 Hyper-V RC1.
- **VM Manageability:** The ability to clone virtual machine characteristics across different hosts through backups of imported or exported virtual machine configurations.
- **Linux Integration Components:** Support for SLES 10 SP1 (x86 and x64 editions). Beta Linux Integration components are available from <http://connect.microsoft.com> (requires a Connect ID from Microsoft for access).
- **Improved Performance:** Fixes that will improve system performance.
- **Improved access control with Authorization Manager (AzMan):** Secure role-based access control models for improved administration is available through AzMan.
- **Remote Management:** Support for remote management as well as a Windows Server 2008 Hyper-V RC1 Microsoft Management Console only installation option for separate management nodes.
- **Increased Virtual SCSI support:** Support for up to four Virtual SCSI controllers per virtual machine.
- **Increased Memory Support:** Support for up to 64 GB of memory per virtual machine.
- **Quick Reset:** Option to quickly reset checkboxes and delete saved credentials when connecting to virtual machines.

NOTE

Certain features could require additional Microsoft software. Visit the Microsoft website (www.microsoft.com) for details on software requirements for these features.

Obtaining Windows Server 2008 Hyper-V RC1

Visit www.microsoft.com/windowsserver2008/audsel.msp for the Windows Server 2008 Hyper-V RC1 download and installation instructions.

Guest Operating Systems Supported with Windows Server 2008 Hyper-V RC1

The list of supported guest Operating Systems that may be used with Windows Server 2008 Hyper-V RC1 is located at the following Web link: www.microsoft.com/windowsserver2008/en/us/hyperv-supported-guest-os.aspx.

Configuration requirements

Windows Server 2008 Hyper-V RC1 uses an advanced feature of processors known as hardware assisted virtualization. On Intel-based ProLiant servers, this feature is referred to as Intel® Virtualization Technology, or VT-x. For AMD-based ProLiant servers, this feature is called AMD-Virtualization, or AMD-V. Since this feature is disabled by default on most ProLiant servers, it must be enabled prior to installing Windows Server 2008 Hyper-V RC1. Refer to the section “Enabling support for hardware assisted virtualization in the ROM-Based Setup Utility (RBSU).”

Recommended system configurations

Microsoft and HP established the recommended system configurations for Windows Server 2008 base OS installations listed in this section.

Microsoft recommendations

Microsoft recommends the configurations in Table 1 for running Windows Server 2008 with Windows Server 2008 Hyper-V RC1.

Table 1. Microsoft recommended Host OS configuration

Component	Requirement
Processor	<ul style="list-style-type: none">• Minimum: 1 GHz• Recommended: 2 GHz• Optimal: 3 GHz or faster
RAM per processor	<ul style="list-style-type: none">• Minimum: 512 MB• Recommended: 2 GB• Optimal: 2 GB (Full) or 1GB (Core)
Maximum RAM 64-bit systems	<ul style="list-style-type: none">• 64 GB (Standard edition)• 2 TB (Enterprise or Data center systems)
Monitor	SVGA resolution (800x600) or higher
Optical storage	DVD drive
Available disk space	<ul style="list-style-type: none">• Minimum: 10 GB• Recommended: 40 GB or greater

NOTE

- Available disk space refers to the free disk space on the partition to contain the system files. Additional space is required if you copy the Windows Server 2008 CD contents to the hard disk during installation.
- Refer to the Microsoft website for any system requirement updates.
- Computers with more than 16 GB of RAM will require more disk space for paging and dump files.

HP recommendations

HP recommends the configurations in Table 2 when running Windows Server 2008 Hyper-V RC1 as the parent virtual machine.

Table 2. HP recommended configurations for running the parent virtual machine

Component	Requirement
Processor	<ul style="list-style-type: none">• Minimum: 1.6 GHz dual-core• Recommended: 2.66 GHz dual-core• Optimal: dual 3 GHz quad-core or faster
RAM per processor core	<ul style="list-style-type: none">• Minimum: 512 MB• Recommended: 2 GB• Optimal: 3 GB
Disk subsystem	<ul style="list-style-type: none">• Minimum: One physical disk for Host OS + one additional disk per guest OS• Recommended: One redundant disk for host OS + one additional redundant disk per two guest OSs• Optimal: One redundant disk for host OS + one additional redundant disk for snapshots + one additional redundant disk per two guest OSs
Network interface controllers (NICs)	<ul style="list-style-type: none">• Minimum: One NIC for host OS management and guest virtual networking• Recommended: One NIC for host OS Management and one NIC for guest virtual networking

Processor requirements

Microsoft provides virtualization functionality in Windows Server 2008 x64 Standard, Enterprise, or Datacenter Edition for systems with the following processors:

- Intel Xeon® processors with Intel Extended Memory 64 Technology (EM64T)
- Advanced Micro Devices, Inc. (AMD64) Opteron® Series processors

Table 3 lists the processor requirements for Windows Server 2008 Hyper-V RC1.

Table 3. Processor requirements for Windows Server 2008 Hyper-V RC1

Component	Requirement
Processor	<ul style="list-style-type: none">• AMD-V• Intel-VT
RAM per processor	<ul style="list-style-type: none">• Minimum: 1 GB• Recommended: 2 GB• Optimal: 4 GB
Hardware Data Execution Prevention	Enabled

NOTE

Windows Server 2008 Hyper-V RC1 supports 16 physical processor cores. A maximum of four virtual processors can be assigned to a single guest OS.

See the installation instruction section of this paper for steps on how to enable Hardware Data Execution Prevention and virtualization in the HP ROM for your server.

Supported HP ProLiant servers

Windows Server 2008 Hyper-V RC1 should successfully install and run on any ProLiant server listed in Table 4 when the server meets the recommended hardware configuration established by Microsoft or HP. However, it is not possible for HP engineers to test all hardware and software configurations during the early release phase of the OS. Listing a particular system or option as supported does not mean that all of the subsystems embedded in that system are fully tested or that all systems and options have undergone extensive functional testing.

Carefully review this document for the recommended system configuration and possible issues you might encounter. Do not use this paper as your sole source of information. In addition to the websites mentioned throughout this paper, visit the Windows Server 2008 Home page: www.microsoft.com/windowsserver2008/default.msp.

Due to the hardware requirements for Windows Server 2008 Hyper-V RC1, not every ProLiant server platform will support Windows Server 2008 Hyper-V RC1. HP highly recommends that administrators review the information below before attempting an installation of Windows Server 2008 Hyper-V RC1.

Table 4 lists the ProLiant servers with processors containing support for hardware-assisted virtualization and the minimum ROM revision required to support Windows Server 2008 Hyper-V RC1.

Table 4. ProLiant server platforms that support Windows Server 2008 Hyper-V RC1

Server platform	ROM family	ROM date (minimum)
ProLiant BL servers:		
ProLiant BL260c G5	I20	04/15/08
ProLiant BL460c	I15	08/21/07
ProLiant BL465c	A13	09/23/07
ProLiant BL465c G5	A13	02/14/08
ProLiant BL480c	I14	08/21/07
ProLiant BL680c G5	I17	08/09/07
ProLiant BL685c	A08	09/23/07
ProLiant BL685c G5	A08	03/27/08

Table 4. ProLiant server platforms that support Windows Server 2008 Hyper-V RC1

Server platform	ROM family	ROM date (minimum)
ProLiant DL servers:		
ProLiant DL360 G5	P58	08/21/07
ProLiant DL365	A10	09/23/07
ProLiant DL365 G5	A10	03/27/08
ProLiant DL380 G5	P56	08/21/07
ProLiant DL385 G2	A09	09/23/07
ProLiant DL385 G5	A09	03/27/08
ProLiant DL580 G4	P59	08/10/07
ProLiant DL580 G5	P61	08/08/07
ProLiant DL585 G2	A07	11/21/07
ProLiant DL585 G5	A07	03/28/08
ProLiant DL785 G5	A15	3/31/08
ProLiant ML servers:		
ProLiant ML350 G5	D21	08/21/07
ProLiant ML370 G5	P57	08/21/07

NOTE: Reminder, the above ROM versions are the minimum for support. HP recommends downloading the current ROM release and applying the latest updates to the ProLiant server.

HP is currently evaluating support for select ProLiant 100 series servers. This support will not be available until after RTM of Windows Server 2008 Hyper-V. Please continue to check this document for additional supported servers.

Supported ProLiant components

Software

HP recommends that administrators use the drivers on the Windows Server 2008 media for Windows Server 2008 Hyper-V RC1. Install the HP ProLiant Support Pack for Windows Server 2008, included with SmartStart 8.00, prior to installing Windows Server 2008 Hyper-V RC1. With this release, HP does not support installing the support pack on a Windows Server 2008 server running as a guest OS within Windows Server 2008 Hyper-V RC1.

Storage options

Table 5 lists supported ProLiant storage options and recommended driver revisions needed to interface with Windows Server 2008. HP has updated the ProLiant Support Pack 8.00 for Windows Server 2008 with the latest drivers. This package is available on the HP website:

www.hp.com/go/ws2008.

Table 5. Supported ProLiant storage controller options

Option	Driver	Location		Installation support		Supported architecture	
		PSP 8.00	Windows media	Full	Server Core	x86	x64
Management drivers:							
Notification driver, Smart Array 5xxx	CPQCISSE.SYS	✓		✓		✓	✓
SAS/SATA Notification Service	CISSESRV.EXE	✓		✓		✓	✓
StorageWorks Fibre Channel Array Notification Driver for Windows 2000/Server 2003	CPQFCAC.SYS	✓		✓		✓	✓
6-Port SATA RAID Controller	AAC.SYS	✓		✓		✓	
Smart Array:							
E200	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
E200i	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
E500	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
P400	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
P400i	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
5i	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
5i Plus	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
6i	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
6402	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
641	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
642	HPCISS.SYS (full-feature)	✓		✓	✓	✓	✓
P600	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓
P800	HPCISS2.SYS (full-feature)	✓		✓	✓	✓	✓

Table 5. Supported ProLiant storage controller options

Option	Driver	Location		Installation support		Supported architecture	
		PSP 8.00	Windows media	Full	Server Core	x86	x64
Ultra 320 SCSI:							
Integrated Dual Channel Ultra320 SCSI Controller	SYMMPI.SYS		✓	✓	✓	✓	✓
64-bit/13-MHz Single Channel Ultra320 SCSI Host Bus Adapter	SYMMPI.SYS		✓	✓	✓	✓	✓
64-bit/13-MHz Dual Channel Ultra320 SCSI Host Bus Adapter	SYMMPI.SYS		✓	✓	✓	✓	✓
Fibre Channel Host Bus Adapters:							
QLogic:							
QLA24xx	QL2300.SYS		✓	✓		✓	✓
QLE24xx	QL2300.SYS		✓	✓		✓	✓
QMH2462	QL2300.SYS		✓	✓		✓	✓
Emulex:							
LP1050	ELXSTOR.SYS	✓	✓	✓		✓	✓
1050DC	ELXSTOR.SYS	✓	✓	✓		✓	✓
LP11002	ELXSTOR.SYS	✓	✓	✓		✓	✓
LP1150	ELXSTOR.SYS	✓	✓	✓		✓	✓
LPe11002	ELXSTOR.SYS	✓	✓	✓		✓	✓
LPe11050	ELXSTOR.SYS	✓	✓	✓		✓	✓
<p>NOTE: Firmware upgrades are available for many of these devices through variations of the Options ROMPaq. The latest version of each Options ROMPaq is available on the software and drivers website: www.hp.com/cgi-bin/hpsupport/index.pl.</p>							

Network interface controllers

Table 6 lists ProLiant NICs supported by Windows Server 2008.

All NIC drivers are available on the Windows Server 2008 ProLiant Support Pack (PSP) and have a digital signature. HP-branded drivers are not available on the Windows Server 2008 media. However, corresponding NIC drivers from Intel and Broadcom are on the media and can be used instead. Drivers for HP multi-function adapters, including support for HP ProLiant G5 LOMs and the NC370T/F and NC380T, are available only on the web.

Table 6. ProLiant Gigabit Ethernet NICs supported by Windows Server 2008

Gigabit NIC	Driver	Location		Installation support		Supported architecture	
		PSP 8.00	Windows media	Full	Server Core	x86	x64
NC1020:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC150T:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC310:							
	N1000325.SYS	✓	✓	✓	✓	✓	
	N1G5132E.SYS	✓	✓	✓	✓		✓
NC320m:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC320T:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC325m:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC326m:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC340T:							
	N1000325.SYS	✓	✓	✓	✓	✓	
	N1G5132E.SYS	✓	✓	✓	✓		✓

Table 6. ProLiant Gigabit Ethernet NICs supported by Windows Server 2008

Gigabit NIC	Driver	Location		Installation support		Supported architecture	
		PSP 8.00	Windows media	Full	Server Core	x86	x64
NC360T:							
	N1E5132.SYS	✓	✓	✓	✓	✓	
	N1E5132E.SYS	✓	✓	✓	✓		✓
NC360T:							
	N1E5132.SYS	✓	✓	✓	✓	✓	
	N1E5132E.SYS	✓	✓	✓	✓		✓
NC370T/F/i:							
	BXVBDX.SYS	✓	✓	✓	✓	✓	
	BXVBDA.SYS	✓	✓	✓	✓		✓
NC371i:							
	BXVBDX.SYS	✓	✓	✓	✓	✓	
	BXVBDA.SYS	✓	✓	✓	✓		✓
NC373T/F/M/i:							
	BXVBDX.SYS	✓	✓	✓	✓	✓	
	BXVBDA.SYS	✓	✓	✓	✓		✓
NC374M:							
	BXVBDX.SYS	✓	✓	✓	✓	✓	
	BXVBDA.SYS	✓	✓	✓	✓		✓
NC380T:							
	BXVBDX.SYS	✓	✓	✓	✓	✓	
	BXVBDA.SYS	✓	✓	✓	✓		✓
NC6170:							
	N1000325.SYS	✓	✓	✓	✓	✓	
	N1G5132E.SYS	✓	✓	✓	✓		✓
NC7170:							
	N1000325.SYS	✓	✓	✓	✓	✓	
	N1G5132E.SYS	✓	✓	✓	✓		✓
NC7761:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓

Table 6. ProLiant Gigabit Ethernet NICs supported by Windows Server 2008

Gigabit NIC	Driver	Location		Installation support		Supported architecture	
		PSP 8.00	Windows media	Full	Server Core	x86	x64
NC7771:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC7781:							
PCI-X LOM for 32-bit systems	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NC7782 PCI-X:							
	Q57XP32.SYS	✓	✓	✓	✓	✓	
	Q57AMD64.SYS	✓	✓	✓	✓		✓
NOTE: NIC drivers for x64 are listed separately.							

Deploying Windows Server 2008 Hyper-V RC1 on ProLiant servers

Windows Server 2008 Hyper-V RC1 requires manual installation after successfully installing Server 2008.

IMPORTANT

The procedures in this paper are for installing Windows Server 2008 Hyper-V RC1 with a "Full" Windows Server 2008 installation. Windows Server 2008 Core installation instructions are available at <http://blogs.techrepublic.com.com/howdoi/?p=183&tag=nl.e138>.

Pre-installation tasks

To prepare for installation, ensure that the following conditions are met:

- The server selected for installation is listed in Table 1 as having the necessary support for hardware-assisted virtualization.
- Any additional storage options added to the server are listed as supported ProLiant storage options.
- Any additional NICs added to the server are listed as supported ProLiant Gigabit Ethernet NICs.
- Go to the support and drivers page at www.hp.com/support to obtain the supported ROM for Windows Server 2008 installations for the server.

- Microsoft Windows Server 2008 has been installed using the procedure outlined in the document “Implementing Microsoft Windows Server 2008 on HP ProLiant servers¹.”
- If necessary, enable support for No-Execute and hardware assisted virtualization in the RBSU.
- Use the RBSU to set date/time and configure the boot controller order (if necessary).
- Use the Online RAID Configuration Utility (ORCA) to configure the RAID settings for the server.
- If installing HP Systems Insight Manager and agents, ensure SNMP is loaded and the service is started.

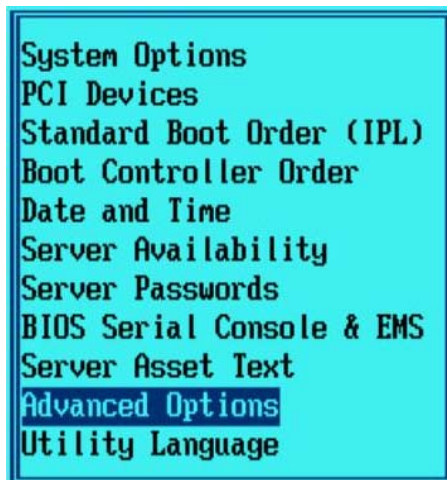
Enable support for hardware assisted virtualization in the RBSU

Windows Server 2008 Hyper-V RC1 uses an advanced processor feature known as hardware assisted virtualization. This feature is disabled by default on most ProLiant servers and must be enabled prior to installing Windows Server 2008 Hyper-V RC1. Enable hardware assisted virtualization by following the appropriate procedure in the following sections.

ProLiant servers with Intel Processors

To enable support for hardware assisted virtualization in the RBSU, complete the following steps:

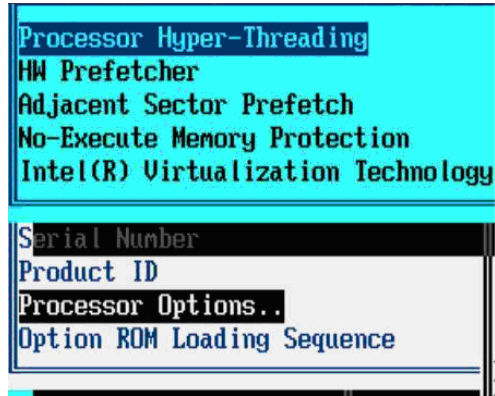
1. Restart or power-on the server.
2. Access the RBSU by pressing **F9** when prompted.
3. From the RBSU Menu, select **Advanced Options**.



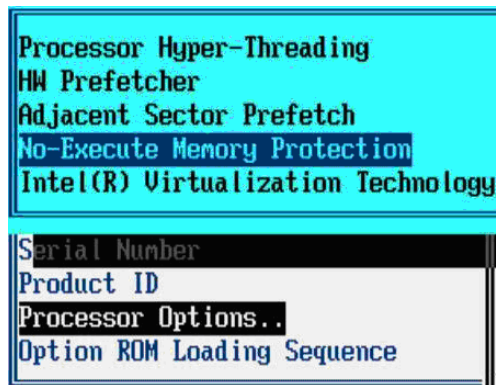
4. From the Advanced Options menu, select **Processor Options**.

¹ The “Implementing Microsoft Windows Server 2008 on HP ProLiant servers” integration note is available at <http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00710606/c00710606.pdf>.

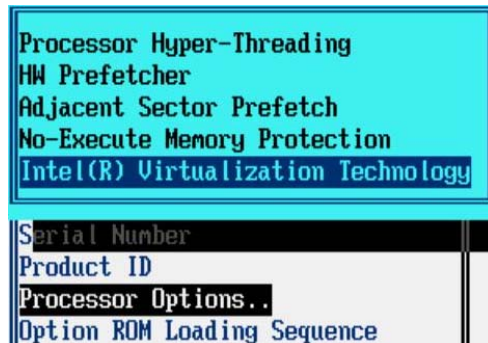
5. If the server contains support for Hyper-Threading, select **Processor Hyper-Threading**, press **Enter**, and then select **Disabled**.



6. Select **No-Execute Memory Protection**, press **Enter**, and then select **Enabled**.



7. Select **Intel(R) Virtualization Technology**, press **Enter**, and then select **Enabled**.

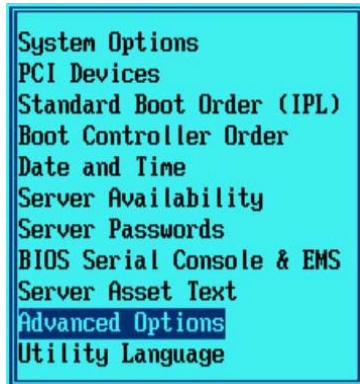


8. Press the **Esc** key until you are prompted to press **F10** to confirm exiting the RBSU. The server will perform a restart.

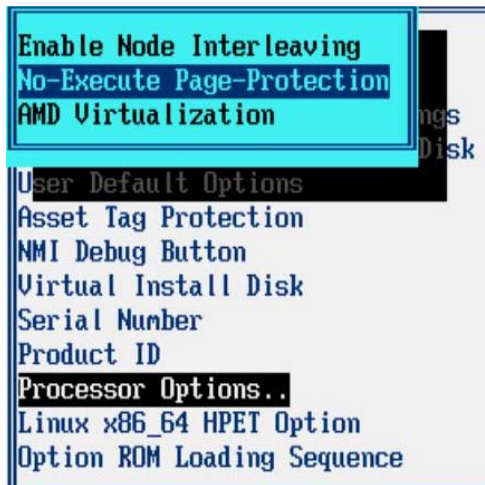
ProLiant servers with AMD processors

To enable support for hardware assisted virtualization in the RBSU, complete the following steps:

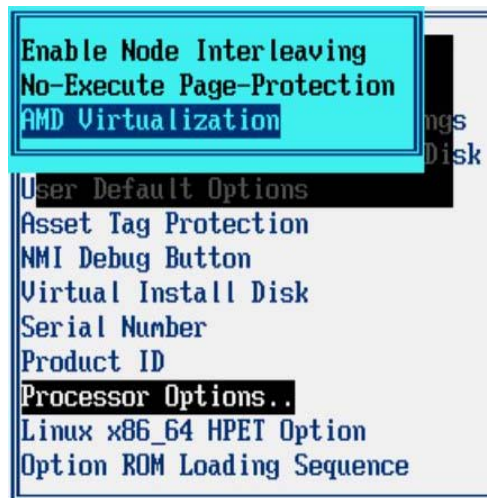
1. Restart or power-on the server.
2. Access the RBSU by pressing **F9** when prompted.
3. From the RBSU Menu, select **Advanced Options**.



4. From the Advanced Options menu, select **Processor Options**.
5. Select **No-Execute Page-Protection**, press **Enter**, and then select **Enabled**.



6. Select **AMD Virtualization**, press **Enter**, and then select **Enabled**.



7. Press the **Esc** key until you are prompted to press **F10** to confirm exiting the RBSU. The server will perform a restart.

Install Windows Server 2008

To install Windows Server 2008 64-bit edition, complete the following steps:

1. Either make sure that the server has a DVD drive (either native to the system or attached).

-Or-

Boot the server into Microsoft Windows Preinstall Environment (Windows PE or WINPE) from a USB key. This can be done across a network using Windows Deployment Services. For details on Booting WINPE, refer to the Windows Automated Installation Kit.

NOTE

iLO virtual media requires a license key with ProLiant ML and ProLiant DL servers and in certain circumstances with ProLiant BL servers.

-
2. Place the Windows Server 2008 media into the DVD drive and boot the server to the DVD to begin the installation.
 3. Follow the on-screen instructions to complete the installation.

IMPORTANT

The F6 option for updating drivers is not available during the Windows Server 2008 installation. Microsoft has added the option to inject a driver during install through the "Update Driver" button, if a boot controller driver is not found. The driver may reside on USB media, floppy drive or, CD-ROM drive.

Install the ProLiant Support Pack (PSP)

Download PSP Version 8.00—designed specifically for use with Windows Server 2008 on ProLiant servers—from the HP website as follows:

1. Go to the HP website, www.hp.com.
2. Select **Support & Driver Downloads**.
3. Enter the ProLiant server model (for example, ProLiant DL380 G5).
4. Select the appropriate server model from the Product Search List.
5. Select the appropriate **Microsoft Windows Server 2008** operating system (W32 or x64).
6. Select **Software - Support Pack** for the quick jump selection.
7. Select ProLiant Support Pack for Microsoft Windows Server 2008.

IMPORTANT

Windows Server 2008 Hyper-V RC1 does not support the Network Configuration Utility (NIC Teaming). Deselect this component before installing the PSP components.

The HP Smart-Update Manager (HPSUM) utility enables users to deploy PSP software and firmware components from a single, easy-to-use interface. Using a graphical interface, the utility enables users to deploy and maintain ProLiant Support Packs and Smart Components on a local server or one or more remote servers accessible over a network connection. This utility enables legacy support of existing software and firmware components while simplifying the overall deployment process. The utility also provides installation logic and version control that automatically check for dependencies, installing only the correct updates for optimal configuration. HPSUM includes the following features:

- Detection of hardware and software on the server
- Automatic component dependency checking
- Detection of components that have available updates
- Remote deployment of PSP components
- Command line support

PSP requirements

To use Windows Server 2008 PSP Version 8.00 with Windows Server 2008 Hyper-V RC1, the following requirements must be satisfied:

- Use only with HP ProLiant servers.
- Use only on the host server for Windows Server 2008 Hyper-V RC1 – installing the PSP on a guest OS is not supported at this time.
- Install the PSP before installing the Windows Server 2008 Hyper-V RC1 role to ensure proper functionality.

Installing the PSP

Once you download the PSP self-extracting executable, complete the following steps:

1. Go to the directory where the PSP executable is saved.

NOTE

When installing the PSP on a system running Server Core, run the executables rather than double-clicking on them. Also, on Server Core systems, the user cannot specify the location for extracting the PSP files. The files will be extracted to the same location as the PSP self-extracting executable.

2. Double-click the executable and extract the PSP to a desired location
3. Go to the directory where the extracted PSP is located.
4. Double-click setup.exe to start the PSP deployment.

NOTE

For the PSP to be properly installed, all PSP files must be present in the same directory as the setup.exe program.

5. As the PSP deployment starts, it performs an inventory of the available updates and checks the local system to see what hardware and software is installed.
6. After the inventory and discovery processes finish, the “Select Installation Hosts” screen displays. Select either the local host or one (or more) remote hosts for PSP deployment.
7. After selecting the host(s), the “Select bundle filter” screen displays information about the PSP bundle to be installed. Select the bundle and the appropriate filter options. For remote deployments, additional screens allow users to update information on a per-host basis.
8. After selecting the bundle for all hosts being updated, open the “Select Items to be Installed” screen to complete the following tasks:
 - Select the components to be installed.
 - Configure the components, if necessary.
 - Review failed dependencies before installation.
 - Review the revision history of the components.
9. After selecting the components to install, click **Install** to proceed with the installation. Once the installation completes, the Installation Results screen displays. If the PSP installs successfully, the process is complete.
10. If any components did not install successfully, complete the following steps:
 - Exit HPSUM.
 - Make corrections to your environment.
 - Restart the application to install the components that had problems.

Install Windows Server 2008 Hyper-V RC1 server role

To install the Windows Server 2008 Hyper-V RC1 server role, complete the following steps:

1. Start the installation program that was obtained from either www.microsoft.com/windowsserver2008/audsel.msp or the Windows Server 2008 media.
2. Click **Add Roles**. If this is the first time a role has been added to the server, you may see a page describing the process for adding roles. Click **Next**.
3. Check the box for **Hyper-V** and click **Next**. Review the overview of Windows Server 2008 Hyper-V RC1 presented on the screen, and then click **Next**.
4. Choose the NICs to configure as virtual networks for use by guest OSs. Click **Next**.

IMPORTANT

When the user binds the virtual network switch to the NIC, all protocols are removed.

Instead of the TCP/IP protocol, the Microsoft Virtual Network Switch Protocol is installed; therefore, all possible open Terminal Server sessions will close. To re-enable the old TCP/IP settings, login to the server locally or through IRC, and then configure the newly created network adapter while using the old TCP/IP configuration.

NOTE

Microsoft recommends that one NIC port be reserved for managing the host operating environment. In scenarios where this is not possible, be advised that network connectivity to the host can be temporarily interrupted during configuration changes to the virtual network.

5. Review the summary installation. Make a note of which NICs have been selected to be configured as virtual networks.
6. When prompted, choose to reboot the server to complete the installation. After the server finishes rebooting, log in as Administrator to finish the installation process.

After adding the Windows Server 2008 Hyper-V RC1 role, you can create and configure any virtual machines.

Appendix A: Known issues and workarounds

Table A-1 lists the known issues with ProLiant servers and Windows Server 2008 Hyper-V RC1.

Table A-1. Known issues on ProLiant servers

Issue	Details
Issue 1	<p>When attempting to enable Windows Server 2008 Hyper-V RC1, the installer reports that the server does not contain the required hardware support.</p> <hr/> <p>Description: When attempting to enable Windows Server 2008 Hyper-V RC1, the installer reports that the server does not contain the required hardware support.</p> <hr/> <p>Workaround: Ensure that support for both No-Execute and hardware assisted virtualization have been enabled in the RBSU. Refer to the "Enable support for hardware assisted virtualization in the RBSU" section for instructions on performing this task.</p>
Issue 2	<p>During installation, selected network cards for use with Windows Server 2008 Hyper-V RC1 are reported as not configured correctly.</p> <hr/> <p>Description: A known issue exists with Windows Server 2008 Hyper-V RC1 that causes the installer to report virtual network configuration issues.</p> <hr/> <p>Workaround: Using the Virtualization Role snap-in, confirm that all NICs selected during installation to be used as virtual networks are configured correctly.</p>
Issue 3	<p>The Virtualization snap-in or event log does not correctly report many Windows Server 2008 Hyper-V RC1 errors.</p> <hr/> <p>Description: In Windows Server 2008, successful events are recorded in the event log, whereas problems are ignored.</p> <p>For example, if a server has not been correctly configured in the RBSU to enable support for hardware assisted virtualization, the user might be unable to start a virtual machine by right clicking the virtual machine and selecting Start. There will be no event recorded in the Virtualization event log to indicate any configuration issues. However, connecting to a virtual machine by right-clicking the virtual machine and selecting Connect and then attempting to start the virtual machine by clicking the Start button in the toolbar will cause an error message to be displayed. The message will indicate that the virtual machine could not be started because the hypervisor is not running.</p>
Issue 4	<p>The Windows Server 2008 Hyper-V RC1 folder and components are not found in C:\Windows.</p> <hr/> <p>Description: Check that Windows Server 2008 x64 Edition has been used to complete the installation of Windows. Windows Server 2008 Hyper-V RC1 only ships with the x64 edition of Windows. If the x86 version of Windows Server 2008 has been installed, reinstall the OS using the x64 edition.</p>
Issue 5	<p>Windows Server 2008 Hyper-V RC1 does not support the Network Configuration Utility (NIC Teaming). Deselect this component before beginning the installation of PSP components.</p> <hr/> <p>Description: Currently, there are no plans to add support for NIC teaming.</p>

Table A-1. Known issues on ProLiant servers

Issue	Details
Issue 6	After the user enables, disables, or updates Hyper-V technology on a Windows Server 2008-based computer, the process stops responding. When the user tries to enable or update Hyper-V, the computer stalls at "Configuring Updates Stage 3 of 3." In this case, only 54 percent of the process is completed. When the user tries to disable Hyper-V, the computer stalls at "Configuring Updates Stage 3 of 3." In this case, only 75 percent of the process is completed.
Description	This problem occurs when the following conditions are true: <ul style="list-style-type: none">• The user enabled, disabled, or updated Hyper-V on a Hewlett-Packard (HP) server.• The user installed the HP Network Configuration Utility on the server. See the Microsoft Knowledge base article 950792 for problem resolution. http://support.microsoft.com/default.aspx/kb/950792 .

Support delivery

Support for Windows Server 2008 Hyper-V RC1 is available by emailing hyper-vbeta@hp.com.

For more information

For additional information, refer to the resources listed below.

Source	Hyperlink
HP and Microsoft Frontline Partnership website	www.hp.com/go/microsoft
Microsoft website	www.microsoft.com
Windows Server 2008 Home page	www.microsoft.com/windowsserver2008/default.msp

Call to action

Send comments about this paper to: TechCom@HP.com.

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