

Install and Configure Hyper-V



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What This Module Covers



Determine hardware and compatibility requirements for installing Hyper-V

Install Hyper-V

Install management tools

Perform remote management of Hyper-V hosts

Configure virtual machines using Windows PowerShell Direct

Upgrade from existing versions of Hyper-V

Delegate virtual machine management

Implement nested virtualization



Determine Hardware Requirements

Requirements for Windows Server 2016

64-bit processor(s) with SLAT support

VM Monitor Mode extension support

Enough RAM memory

BIOS/UEFI virtualization support enabled

- Hardware-assisted virtualization via Intel VT or AMD-V
- Hardware-enforced Data Execution Prevention via Intel XD or AMD NX



Configure VMs with PowerShell Direct

PowerShell Direct offers a new way of running PowerShell commands inside a VM from the host operating system.

There are no network or firewall requirements or configurations

PowerShell Direct works regardless of Remote Management configuration

Guest credentials are required and VM must be running on the host

Some PowerShell tools not yet available in PowerShell Direct



Configure VMs with PowerShell Direct

**Interactive
Session**

**Single-use
Session**

**Persistent
Session**



Upgrade Hyper-V

Upgrade Hyper-V hosts

Upgrade cluster functional level

Ensure readiness for VM version upgrade

Shutdown VM

Update-VMVersion <VMName>



Supported VM Configuration Versions

Hyper-V Host Version	Supported VM Configuration versions
Windows Server 2016	8.0, 7.1, 7.0, 6.2, 5.0
Windows 10 Anniversary Update	8.0, 7.1, 7.0, 6.2, 5.0
Windows Server 2016 Technical Preview	7.1, 7.0, 6.2, 5.0
Windows 10 build 10565 or later	7.0, 6.2, 5.0
Windows 10 builds earlier than 10565	6.2, 5.0
Windows Server 2012 R2	5.0
Windows 8.1	5.0



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Feature	Minimum VM version
Hot Add/Remove Memory	6.2
Secure Boot for Linux VMs	6.2
Production Checkpoints	6.2
PowerShell Direct	6.2
Virtual Machine Grouping	6.2
Virtual Trusted Platform Module (vTPM)	7.0
Virtual machine multi queues (VMMQ)	7.1
XSAVE support	8.0
Key storage drive	8.0
Guest Virtualization Based Security support	8.0
Nested virtualization	8.0
Virtual processor count	8.0
Large memory VMs	8.0



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Implement Nested Virtualization

Host running Windows Server 2016 or
Windows 10 Anniversary Update

VM running Windows Server 2016 or
Windows 10 Anniversary Update

VM at configuration version 8.0 or greater

Intel processor with VT-x and EPT



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