10 hidden Hyper-V features you should know about!

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Agenda

Learn about Switzerland

Guess What!

10 hidden Hyper-V features you should know about!
Okay, let’s get started
Topics - let's vote!

Nested Virtualization

PowerShell Direct

Enhanced Session Mode
Topics - let's vote!

- Nested Virtualization
- PowerShell Direct
- Enhanced Session Mode
10. PowerShell Direct
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Requirements

- The virtual machine must be running locally on the Hyper-V host and must be started.
- You must be logged into the host computer as a Hyper-V administrator.
- You must supply valid user credentials for the virtual machine.
- The host operating system must run Windows 10, Windows Server 2016, or a higher version.
- The virtual machine must run Windows 10, Windows Server 2016, or a higher version.
Setup

Enter-PSSession -VMName "VM01" -Credential (Get-Credential)
9. Enhanced Session Mode
Enhanced session mode basically provides your Virtual Machine Connection with RDP (Remote Desktop Protocol) capabilities over the Hyper-V VMBus, including the following:

- Display Configuration
- Audio redirection
- Printer redirection
- Full clipboard support (improved over limited prior-generation clipboard support)
- Smart Card support
- USB Device redirection
- Drive redirection
- Redirection for supported Plug and Play devices
8. Nested Virtualization
Requirements

- At least 4 GB RAM available for the virtualized Hyper-V host.
- To run at least Windows Server 2016 or Windows 10 build 10565 (and higher) on both the physical Hyper-V host and the virtualized host. Running the same build in both the physical and virtualized environments generally improves performance.
- A processor with Intel VT-x (nested virtualization is available only for Intel processors at this time).
- Other Hypervisors will not work
Setup / Configuration

- disable Dynamic Memory on Virtual Machine
- enable Virtualization Extensions on the vCPU
- enable MAC Address Spoofing
- set Memory of the Virtual Machine to a minimum of 4GB RAM

Set-VMProcessor -VMName "VMName" - ExposeVirtualizationExtensions $true
7. Hyper-V Virtual Switch using NAT
Requirements

- Windows 10 and Windows Server 2016 build 14295 or later
- Enabled Hyper-V role
- Windows 10 Fall Creators Update Creates a Default Switch
New-VMSwitch –SwitchName “NATSwitch” –SwitchType Internal

New-NetIPAddress –IPAddress 172.21.21.1 -PrefixLength 24 -InterfaceAlias "vEthernet (NATSwitch)"

New-NetNat –Name MyNATnetwork –InternalIPInterfaceAddressPrefix 172.21.21.0/24

Add-NetNatStaticMapping -NatName “VMSwitchNat” -Protocol TCP -ExternallIPAddress 0.0.0.0 -InternallIPAddress 172.21.21.2 -InternalPort 80 -ExternalPort 80
6. Virtual Battery for Virtual Machines
Virtual Battery for Virtual Machines
Requirements

Windows 10 Fall Creators Update and higher
5. Hyper-V Manager Zoom Level
Requirements

Windows 10 Fall Creators Update and higher
4. Virtual TPM Chip
vTPM

• Allows you to use Bitlocker inside a Virtual Machine
• Perfect to if you are using the Host Guardian Service
Requirements

- Windows 10 or Windows Server 2016 and higher
Enable-VMTPM -VMName W10-01
3. VM Resource Metering
```
PS C:\> get-command "VMresourcemetering"

CommandType Name Version Source
----- ------- ------- -------
Cmdlet Disable-VMResourceMetering 2.0.0.0 Hyper-V
Cmdlet Enable-VMResourceMetering 2.0.0.0 Hyper-V
Cmdlet Reset-VMResourceMetering 2.0.0.0 Hyper-V

PS C:\> Enable-VMResourceMetering -VMName WS2016DX

PS C:\> Measure-VM -VMName WS2016DX

VMName AvgCPU(MHz) AvgRAM(M) MaxRAM(M) MinRAM(M) TotalDisk(M) NetworkInbound(M) NetworkOutbound(M)
------ -------- ------- ------- ------- ------- -------------- --------------
WS2016DX 575 512 1024 1024 130048 0 0

PS C:\> Measure-VM -VMName WS2016DX | select *

 AvgCPU : 592
 AvgRAM : 538
 MinRAM : 1024
 MaxRAM : 1024
 TotalDisk : 130048
 VMId : 9db52f4f-7df4-4be7-b726-fb5221cb65ca
 VMName : WS2016DX
 CimSession : CimSession: .
 ComputerName : SURFACEBOOK2
 MeteringDuration : 
 AverageProcessorUsage : 592
 AverageMemoryUsage : 538
 MaximumMemoryUsage : 1024
 MinimumMemoryUsage : 1024
 TotalDiskAllocation : 130048
 AggregatedAverageNormalizedIOPS : 788
 AggregatedAverageLatency : 814
 AggregatedDiskDataRead : 1336
 AggregatedDiskDataWritten : 300
 AggregatedNormalizedIOCount : 224886
 NetworkMeteredTrafficReport : 
 AggregatedNetworkMeteredTrafficReport : 
```
Requirements

Windows 10 or Windows Server 2016 and higher
Enable-VMResourceMetering -VMName WS2016DX

Measure-VM -VMName WS2016DX
2. Sharing Virtual Machines
Requirements

Windows 10 Fall Creators Update and higher
DEMO
Zoom Level
VM Sharing
Virtual Battery
vTPM
1. Hyper-V Container
Requirements

Windows 10 or Windows Server 2016 and higher

Windows 10 Fall Creators Update for Linux
Container on Windows
VM Quick Create
Select an operating system

Windows 10 dev environment

Start building Universal Windows Platform apps quickly using a virtual machine.

This evaluation copy of the Windows 10 1709 (also referred to as the Windows 10 Fall Creators Update) will enable you to try out Windows 10 UWP development with an evaluation copy of Windows.

This evaluation copy will expire after a predetermined amount of time. The license terms for the Windows 10 VMs supersede any conflicting Windows license terms. See https://aka.ms/windowsdevelopervirtualmachineeula for any additional details.

Edition: Windows 10 Enterprise
Copyright: Copyright (C) Microsoft Corporation. All rights reserved.
License: Evaluation: https://aka.ms/windowsdevelopervirtualmachineeula

Create Virtual Machine
Virtualization Blog

Information and announcements from Program Managers, Product Managers, Developers and Testers in the Microsoft Virtualization team.

Create your custom Quick Create VM gallery

November 8, 2017 by Lars Iwer (MSFT) // 1 Comments

Have you ever wondered whether it is possible to add your own custom images to the list of available VMs for Quick Create?

The answer is: Yes, you can!

Since quite a few people have been asking us, this post will give you a quick example to get started and add your own custom image while we’re working on the official documentation. The following two steps will be described in this blog post:

1. Create JSON document describing your image
2. Add this JSON document to the list of galleries to include
One more Thing
Hot Add and Remove Stuff

- Memory
- Network Adapters
DEMO
Quick Create
Hot Add and Remove
10 HIDDEN HYPER-V FEATURES YOU SHOULD KNOW ABOUT!


Microsoft added some amazing new features and improvements to Hyper-V over the past few years. A lot of them you can use in Windows Server 2016 Hyper-V today, but there are also a lot of features hidden in the user interface and they are also included in Windows 10 Pro or Enterprise. I think this list should you a good idea about some of them.

Nested Virtualization
Take the Survey!

Your feedback is important! Please rate the session for a chance to win!

Survey is below session description at http://elus18.expertslive.us
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Room</th>
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<td>2/8: 10:30</td>
<td>Joyner</td>
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<td>Azure Site Recovery: Tips from the Trenches</td>
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<td>Sterling Ridge</td>
<td>10 hidden Hyper-V features you should know about!</td>
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<td>Creekside Park</td>
<td>Azure Stack - Everything you need to know!</td>
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