

Windows Server 2022: Manage Virtual Machines and Containers

Configure Hyper-V



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Overview



Enable VM enhanced session mode

Configure nested virtualization

Configure VM memory

**Manage VMs using PowerShell Remoting,
PowerShell Direct, and HVC.exe**



Manage Virtual Machines and Containers

Configure Hyper-V

Manage Hyper-V

Administer Hyper-V Guest VMs

Create and Manage Containers

Manage Azure VMs that Run Windows Server



Windows Server Hybrid Administrator Associate

Take two exams



CERTIFICATION EXAM **AZ-800**
**Administering Windows Server
Hybrid Core Infrastructure**

AND



CERTIFICATION EXAM **AZ-801**
**Configuring Windows Server
Hybrid Advanced Services**

Earn the certification



ASSOCIATE CERTIFICATION
**Microsoft Certified:
Windows Server Hybrid
Administrator Associate**

One-year cert validity



Exercise Files

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Troubleshooting with Microsoft Azure Network Watcher

by Tim Warner

Microsoft now gives you packet-level access to your Windows Server and Linux virtual machines (VMs) running in Azure. You'll learn how to use Network Watcher to troubleshoot network security groups (NSGs), perform packet captures, and much more.

[Resume Course](#) [Bookmark](#) [Add to Channel](#)

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Learning Check

Recommended

These exercise files are intended to provide you with the assets you need to create a video-based hands-on experience. With the exercise files, you can follow along with the author and re-create the same solution on your computer. We find this to be even more effective than written lab exercises.

[Download exercise files](#)

Course author

Tim Warner

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Course info

Level	Intermediate
Rating	★★★★★
My rating	★★★★★
Duration	2h 12m
Released	31 Oct 2017

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Exercise Files

The screenshot displays a Windows desktop environment with three overlapping windows:

- File Explorer (Left):** Shows the path `C:\Users\Tim\Downloads\azure`. The file list contains folders named 02, 03, 04, 05, and 06. Folder 02 is selected. The status bar indicates `0 / 5 object(s) selected`.
- Code Editor (Center):** The title bar reads `File Edit Selection View Go Debug ... microsoft-azure-ad-privileged-identity-management-configuring-m4-links.txt`. The editor displays the contents of `microsoft-azure-ad-privileged-identity-management-configuring-m4-links.txt`, which is a list of 22 numbered links related to Azure AD PIM documentation and access reviews. The status bar at the bottom shows `Spaces: 4 UTF-8 CRLF Plain Text`.
- File Details Window (Right):** A small window titled `02\demos\` showing a table of file details. The table has columns for `Size` and `Pack`.

Size	Pack
1 298	
359	



Configure Hyper-V



Hyper-V



Microsoft's server virtualization platform

Available in Windows Server and Windows Client (Pro, Enterprise, Education)

Components:

- Hyper-V Manager RSAT console
- Hyper-V PowerShell module
- VMConnect
- Windows PowerShell Direct



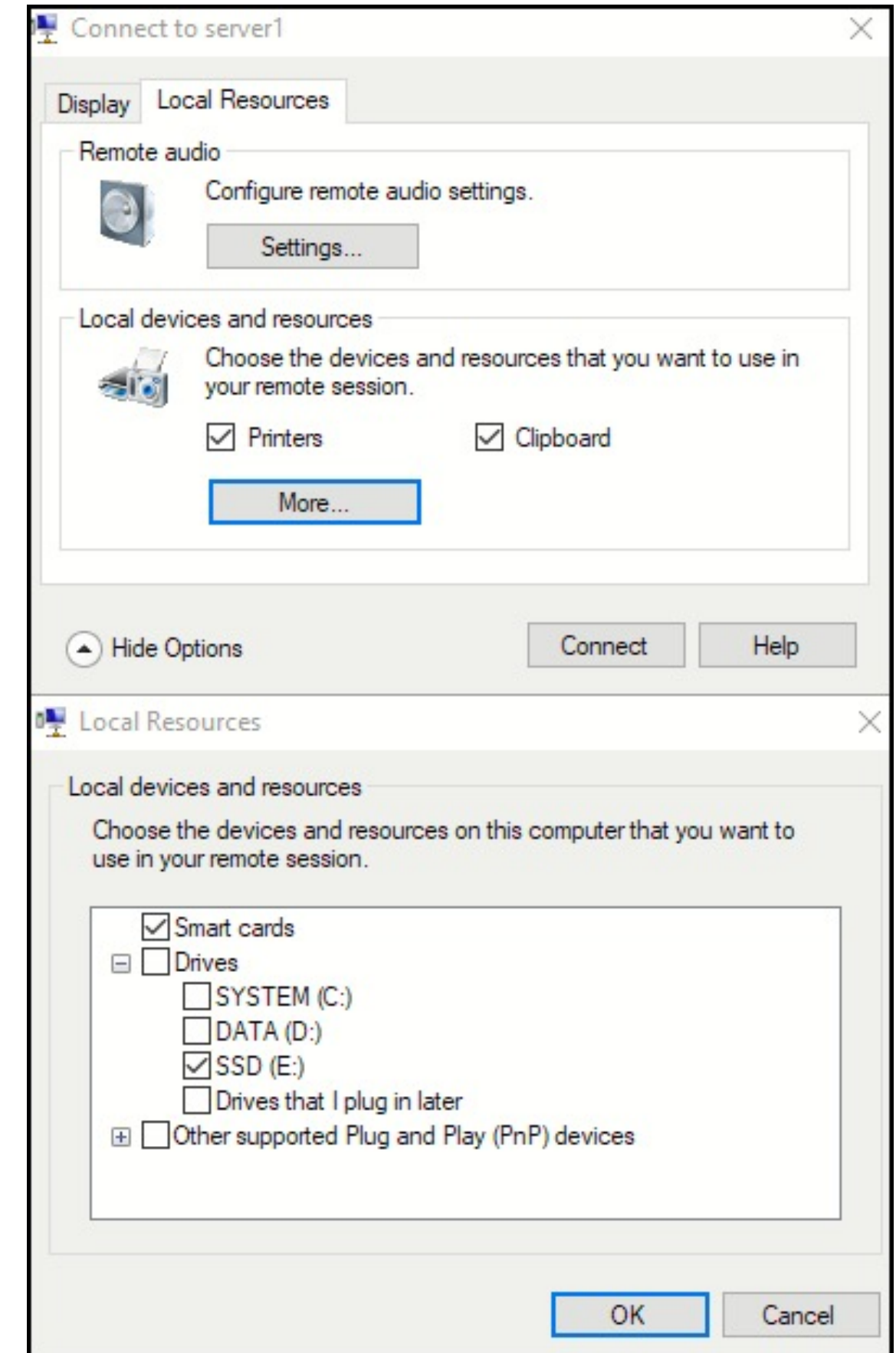
Hyper-V Enhanced Session Mode

**Access the Hyper-V host's local resources
from within the VM**

Fixed & removeable disks

Printers

Must use VMConnect RSAT tool



Hyper-V VM Memory Best Practices

**Enable Dynamic
Memory**

**Monitor for memory
buffer percentage**

**Use memory weight
to implement VM
QoS**

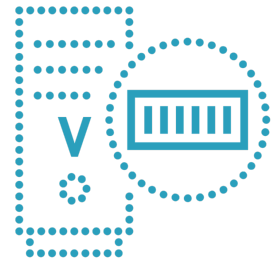
**Monitor for memory
leaks**

**Enable and update
Integration Services**

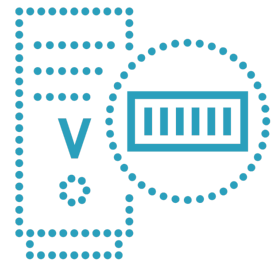
**Determine whether
Dynamic Memory is
best**



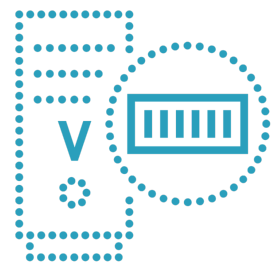
Nested Virtualization



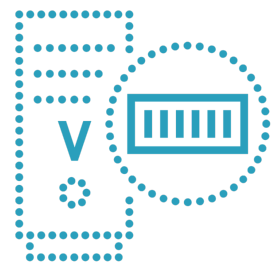
Allows a VM to act as a Hyper-V host itself



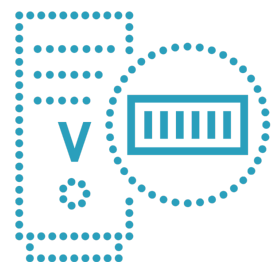
Available with selected Azure VM sizes



Host must support Intel/AMD CPU virtualization extensions



Set-VMProcessor -VMName <VMName> -ExposeVirtualizationExtensions \$true



L1 virtual switch needs MAC address spoofing enabled



Demo



1

Install Hyper-V

Enhanced Session Mode

- Enable
- Test in VMConnect

Nested Virtualization

- Enable
- Test



Hyper-V and PowerShell Remoting



Comparison

PowerShell Remoting

You must enable PS remoting on target servers

Universal connectivity

WinRM-enabled transport

PowerShell Direct

VMs do not need to be enabled for PS remoting

Connectivity constrained to Hyper-V host and guest VM

Named pipes-enabled transport



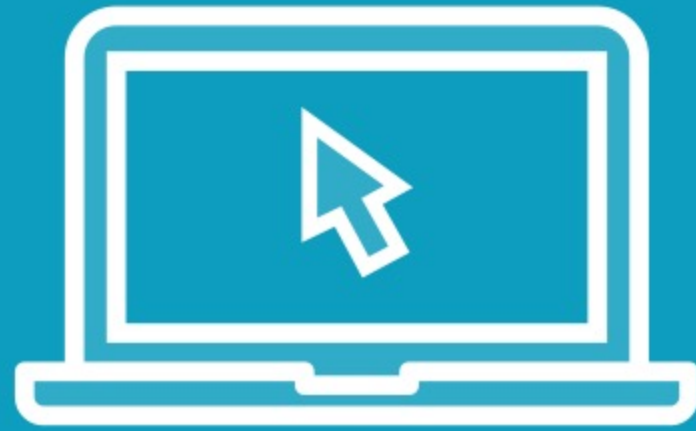
```
hvc ssh tim@vmname
```

```
hvc scp -r /scripts/bash tim@vmname:~/
```

HVC.EXE - SSH Direct for Linux VMs

HVC is to Hyper-V Linux VMs what PowerShell Direct is to Hyper-V Windows Server VMs

Demo



2

Show PowerShell Direct

Enable guest VM for PS remoting

Show PowerShell remoting



Summary



Microsoft Azure runs on (specialized) Hyper-V

Remember PowerShell Direct for Windows VMs, and HVC.exe for Linux VMs

Are you comfortable with PowerShell yet?

- Check the Pluralsight library

"What else do I need to know about Hyper-V to be successful on Exam AZ-800?"



Up Next:
Manage Hyper-V

