ĐẠI HỌC ĐÀ NẴNG
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Chapter 6

Installing in the Enterprise

Understanding Automated

Installing Windows Server 2016 is quick and easy, but as an IT manager or IT professional, you may have to install dozens of copies of Windows Server 2016. It is not a good practice to install them one at a time. It's important to understand how to automate a Windows Server 2016 deployment for the Windows Server 2016 (70-740) exam, but you'll also use automated deployments in a corporate environment. Many companies use third-party tools to create and deploy Windows Server 2016 machines, but there are other ways.

Page 122 - MCSA Windows Server 2016 Complete Study Guide- Exam 70-740, Exam 70-741, Exam 70-742, and Exam 70-743

Deployment Options

If you need to install Windows Server 2016 on multiple computers, you could manually install the operating system on each computer, as described in Chapter 1, “Installing Windows Server 2016.” However, automating the deployment process will make your job easier, more efficient, and more cost effective if you have a large number of client computers on which to install Windows Server 2016.

Deployment Options

Windows Server 2016 comes with several utilities that can be used for deploying and automating the Windows Server 2016 installation. With access to multiple utilities with different functionality, administrators have increased flexibility in determining how to best deploy Windows Server 2016 within a large corporate environment.

Deployment Options

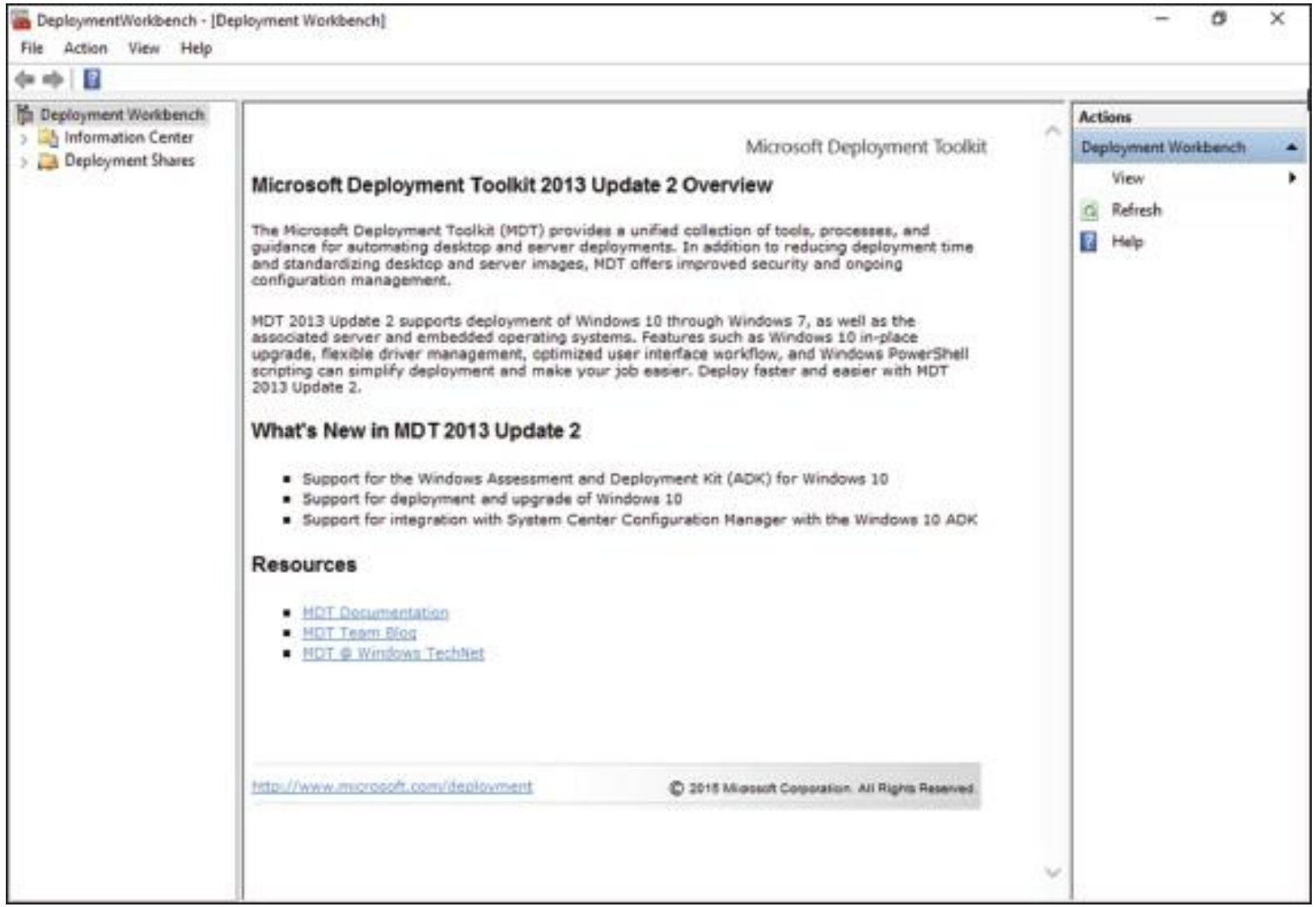
The following sections contain overviews of the automated deployment options, which will help you choose which solution is best for your requirements and environment. The options for automated deployment of Windows Server 2016 are as follows:

- ✓ Microsoft Deployment Toolkit (MDT) 2013 Update 2
- ✓ Unattended installation, or unattended setup, which uses Setup.exe
- ✓ Microsoft Assessment and Planning (MAP) Toolkit
- ✓ Windows Automated Installation Kit (Windows AIK)

Deployment Options

- ✓ Windows Assessment and Deployment Kit for Windows Server 2016 WDS (covered in Chapter 1 “Installing Windows Server 2016”)
- ✓ System Preparation Tool (Sysprep.exe), which is used to set up a machine to be imaged or cloned
- ✓ Deployment Image Servicing and Management (DISM)

Microsoft Deployment Toolkit 2013 Update 2



Microsoft Deployment Toolkit 2013 Update 2

- ✓ Quicker deployments and the capabilities of having standardized desktop and server images and security
- ✓ Zero-touch deployments of Windows Server 2016, Windows Server 2012/2012 R2, Windows Server 2008/2008 R2, Windows 10/8/7

Microsoft Deployment Toolkit 2013 Update 2

To install the MDT 2013 package onto your computer (regardless of the operating system being deployed), you must first meet the minimum requirements of MDT. These components need to be installed only on the computer where MDT 2013 is being installed:

- ✓Windows Server 2016, Windows Server 2012/2012 R2, Windows Server 2008/2008 R2, Windows 10, Windows 8.1, Windows 8, or Windows 7.
- ✓The Windows Assessment and Deployment Kit (ADK) for Windows Server 2016 is required for all deployment scenarios.

Microsoft Deployment Toolkit 2013 Update 2

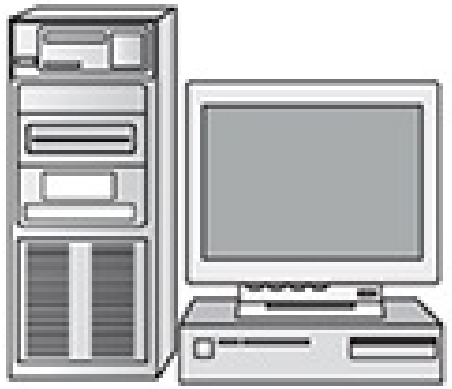
- ✓System Center 2016 Configuration Manager Service Pack 1 with the Windows ADK for Windows Server 2016 is required for zero-touch installation (ZTI) and user-driven installation (UDI) scenarios.
- ✓If you are using ZTI and/or UDI, you are allowed to add the MDT SQL database to any version of System Center Configuration Manager with SQL Technology; if you are using LTI, you must use a separately licensed SQL Server product to host your MDT SQL database.

An Overview of Unattended Installation

Unattended installation is a practical method of automating deployments when you have a large number of clients to install and the computers require different hardware and software configurations. Unattended installations allow you to create customized installations that are specific to your environment. Custom installations can support custom hardware and software installations.

An Overview of Unattended Installation

Distribution Share
Windows Server 2016



Images Stored:
Windows 10
Windows Server 2016
Answer File (Unattend.xml)

Target Machine

Requires:
Network Connection

An Overview of Unattended Installation

Advantages of Unattended Installation

In a midsize or large organization, it just makes sense to use automated setups. As stated earlier, it is nearly impossible to install Windows Server 2016 one at a time on hundreds of machines. But there are many advantages to using unattended installations as a method for automating Windows Server 2016:

- ✓ Unattended installation saves time and money because users do not have to interactively respond to each installation query.
- ✓ It can be configured to provide an automated query response while still selectively allowing users to provide specified input during installations.

An Overview of Unattended Installation

Advantages of Unattended Installation

- ✓ It can be used to install clean copies of Windows Server 2016 or upgrade an existing operating system (providing it is on the list of permitted operating systems) to Windows Server 2016.
- ✓ It can be expanded to include installation instructions for applications, additional language support, service packs, and device drivers.
- ✓ The physical media for Windows Server 2016 does not need to be distributed to all computers on which it will be installed.

An Overview of Unattended Installation

Disadvantages of Unattended Installation

As stated earlier, a manual installation is not practical for mass installations. But one of the biggest disadvantages to performing an unattended installation is that an administrator does not physically walk through the installation of Windows Server 2016. A client operating system is one of the most important items that you will install onto a machine. As an IT manager and consultant, I have always felt better physically installing a client operating system. This way, if there are any glitches, I can see and deal with them immediately. If something happens during an unattended install, you may never know it, but the end user may experience small issues throughout the lifetime of the machine.

An Overview of Unattended Installation

Disadvantages of Unattended Installation

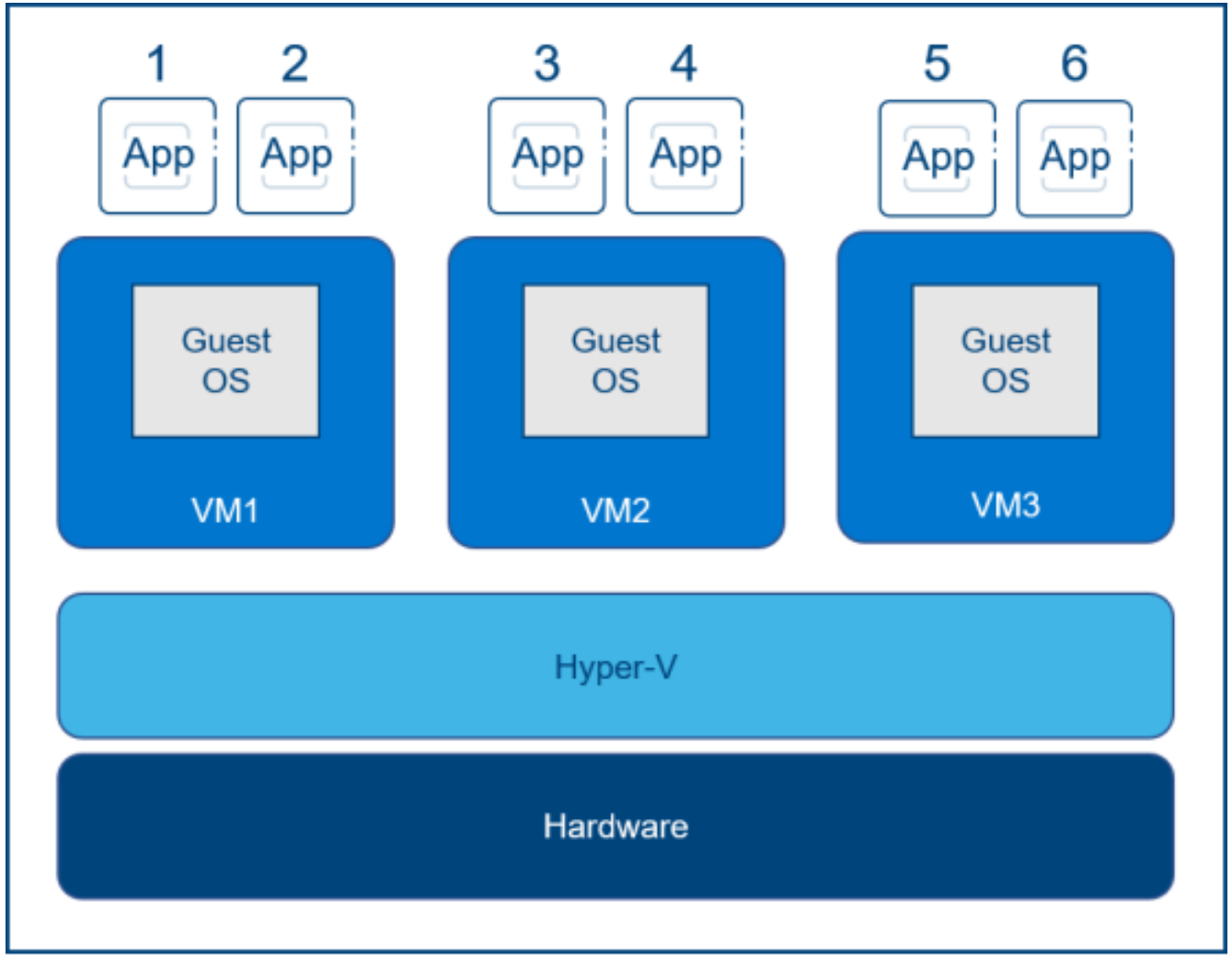
Two other disadvantages of using unattended installations as a method for automating Windows Server 2016 installations are listed here:

- ✓They require more initial setup than a standard installation of Windows Server 2016.
- ✓Someone must have access to each client computer and must initiate the unattended installation process on the client side.

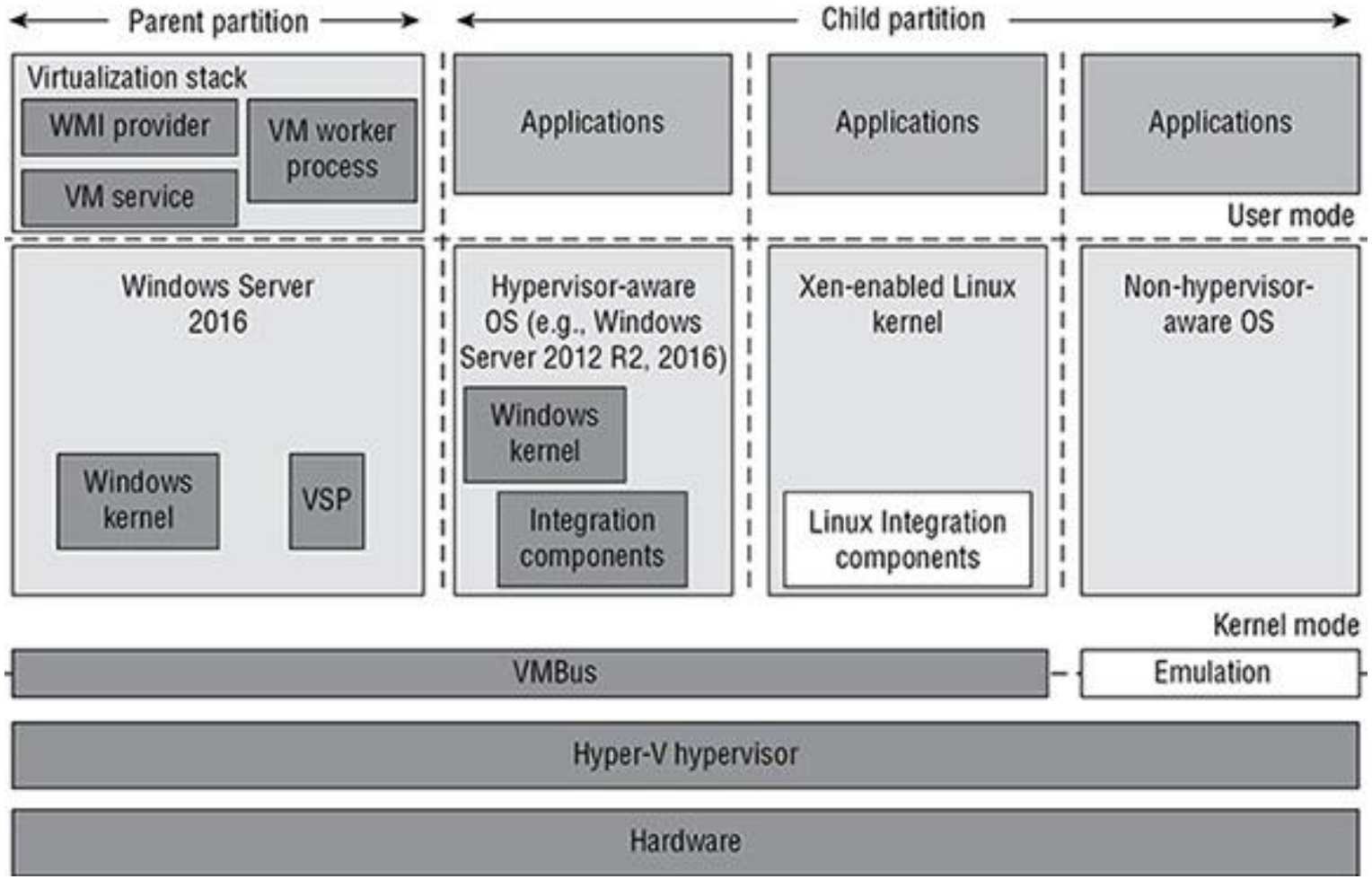
Hyper-V Overview

Virtualization is a method for abstracting physical resources from the way that they interact with other resources. For example, if you abstract the physical hardware from the operating system, you get the benefit of being able to move the operating system between different physical systems. This is called *server virtualization*. But there are also other forms of virtualization available, such as presentation virtualization, desktop virtualization, and application virtualization.

Hyper-V Overview



Hyper-V Overview



Hyper-V Overview

Hardware Requirements

Requirement Area	Definition
CPU	x64-compatible processor with Intel VT or AMD-V technology enabled. Hardware Data Execution Prevention (DEP), specifically Intel XD bit (execute disable bit) or AMD NX bit (no execute bit), must be available and enabled. Minimum: 1.4 GHz. Recommended: 2 GHz or faster.
Memory	Minimum: 1 GB RAM. Recommended: 2 GB RAM or greater. (Additional RAM is required for each running guest operating system.) Maximum: 1 TB.
Hard disk	Minimum: 8 GB. Recommended: 20 GB or greater. (Additional disk space needed for each guest operating system.)

Hyper-V Overview

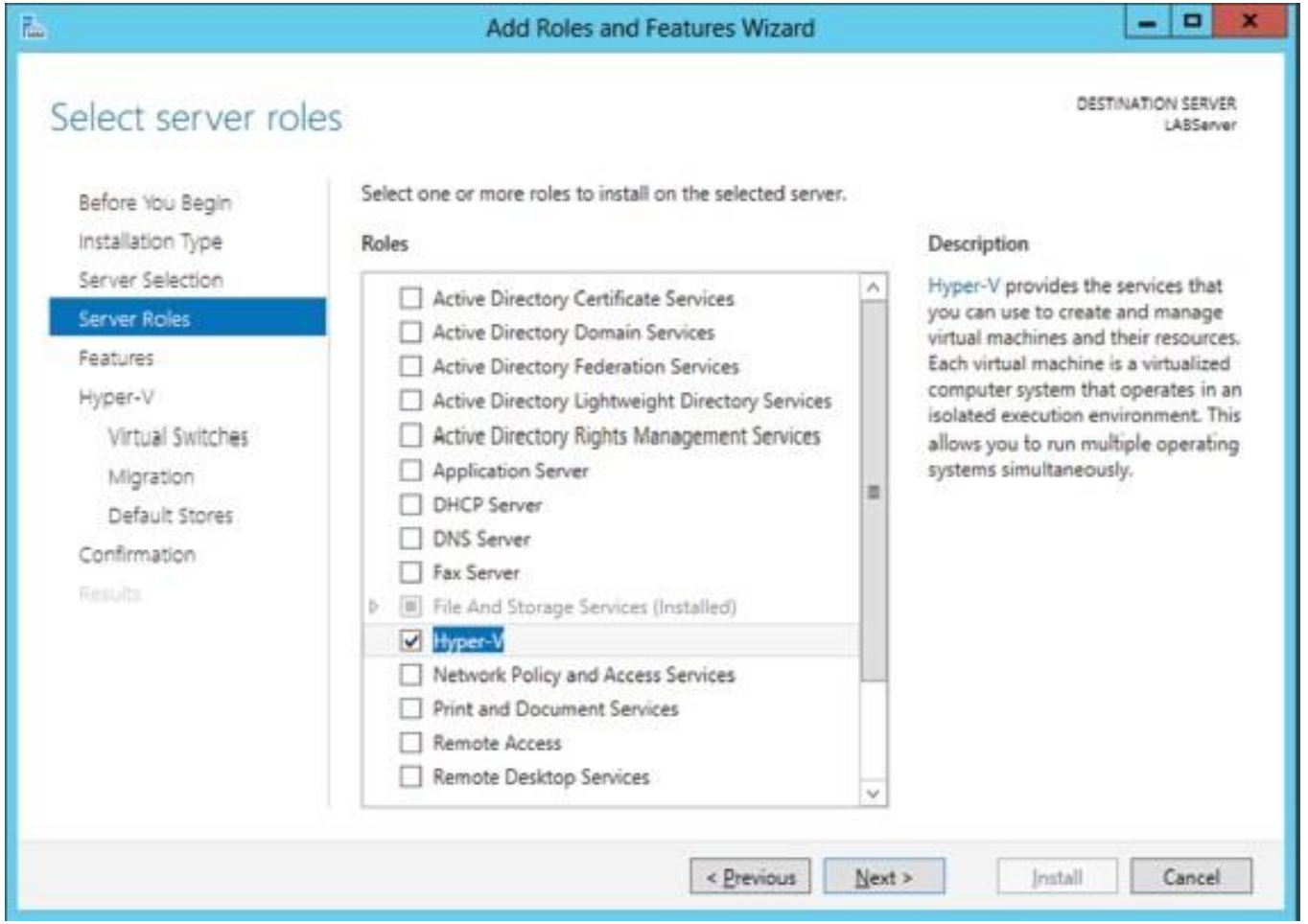
Software Requirements

To use virtualization in Windows Server 2016, you need to consider the basic software requirements for Hyper-V. Hyper-V runs only on the following editions of the Windows Server 2016 operating system:

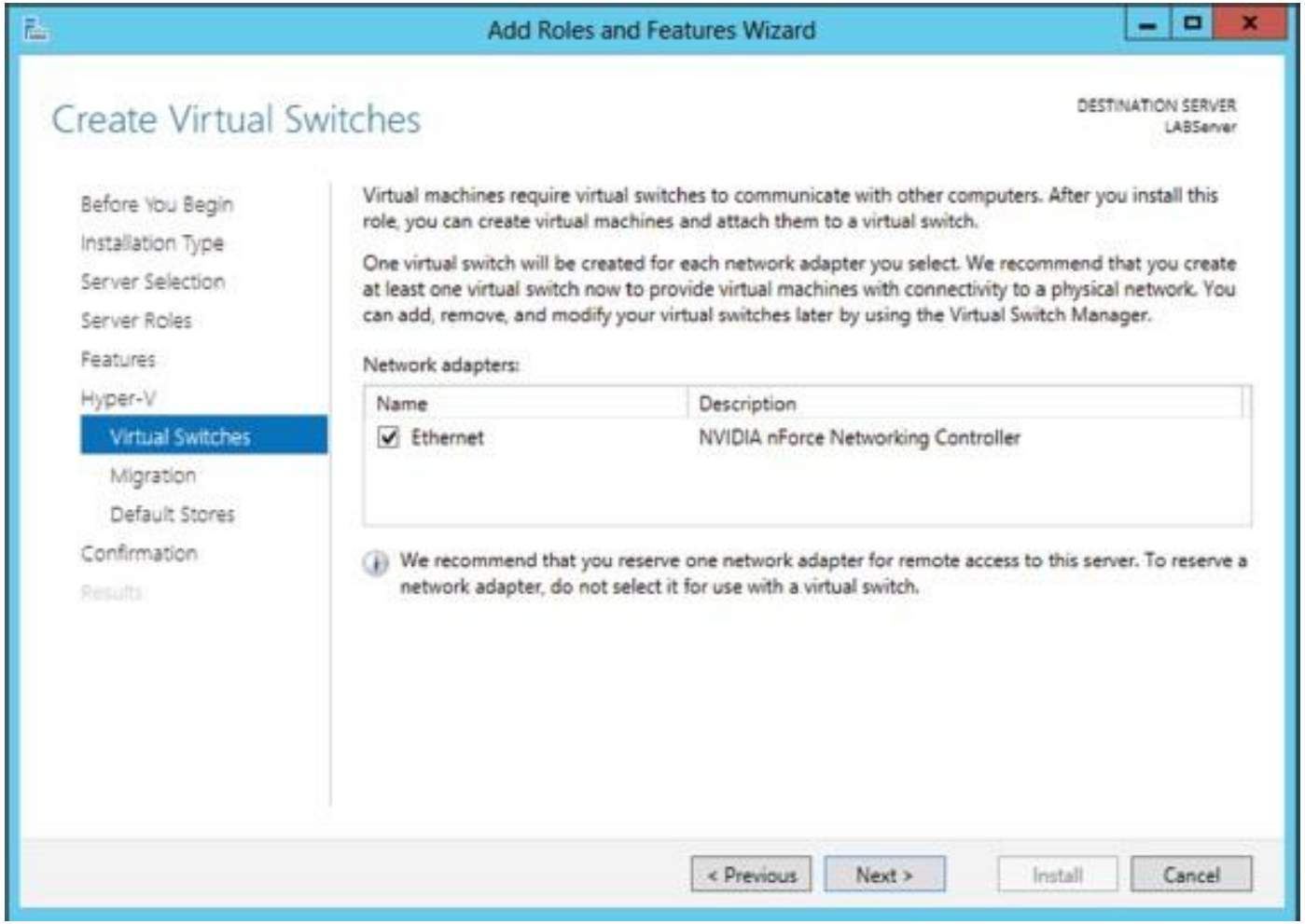
- Windows Server 2016 Standard edition
- Windows Server 2016 Datacenter edition
- Microsoft Hyper-V Server 2012 R2 edition
- Windows Server 2016 Hyper-V edition

Hyper-V Installation and Configuration

Install the Hyper-V Role



Hyper-V Installation and Configuration



Hyper-V Installation and Configuration

Installing Hyper-V in Server Core

The Server Core installation option is introduced in Windows Server 2008. It creates an operating system installation without a GUI shell. You can either manage the server remotely from another system or use the Server Core's command-line interface.

Hyper-V Installation and Configuration

Installing Hyper-V in Server Core

This installation option provides the following benefits:

- ✓ Reduces attack surface (because fewer applications are running on the server)
- ✓ Reduces maintenance and management (because only the required options are installed)
- ✓ Requires less disk space and produces less processor utilization Provides a minimal parent partition
- ✓ Reduces system resources required by the operating system as well as the attack surface

Hyper-V Installation and Configuration

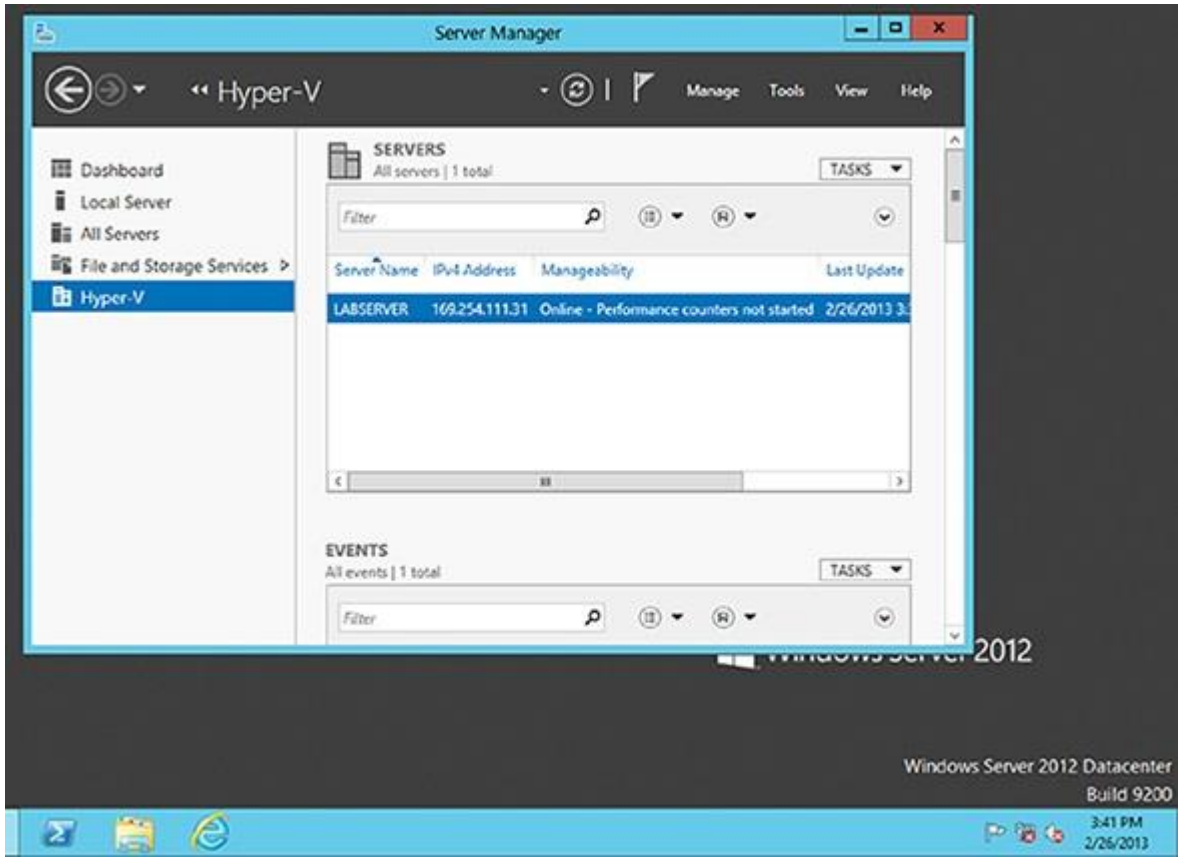
Installing Hyper-V in Server Core

By using Hyper-V on a Server Core installation, you can fundamentally improve availability because the attack surface is reduced and the downtime required for installing patches is optimized. It will thus be more secure and reliable with less management. To install Hyper-V for a Windows Server 2016 installation, you must execute the following command in the command-line interface:

Dism /online /enable-feature /featurename:Microsoft-Hyper-V

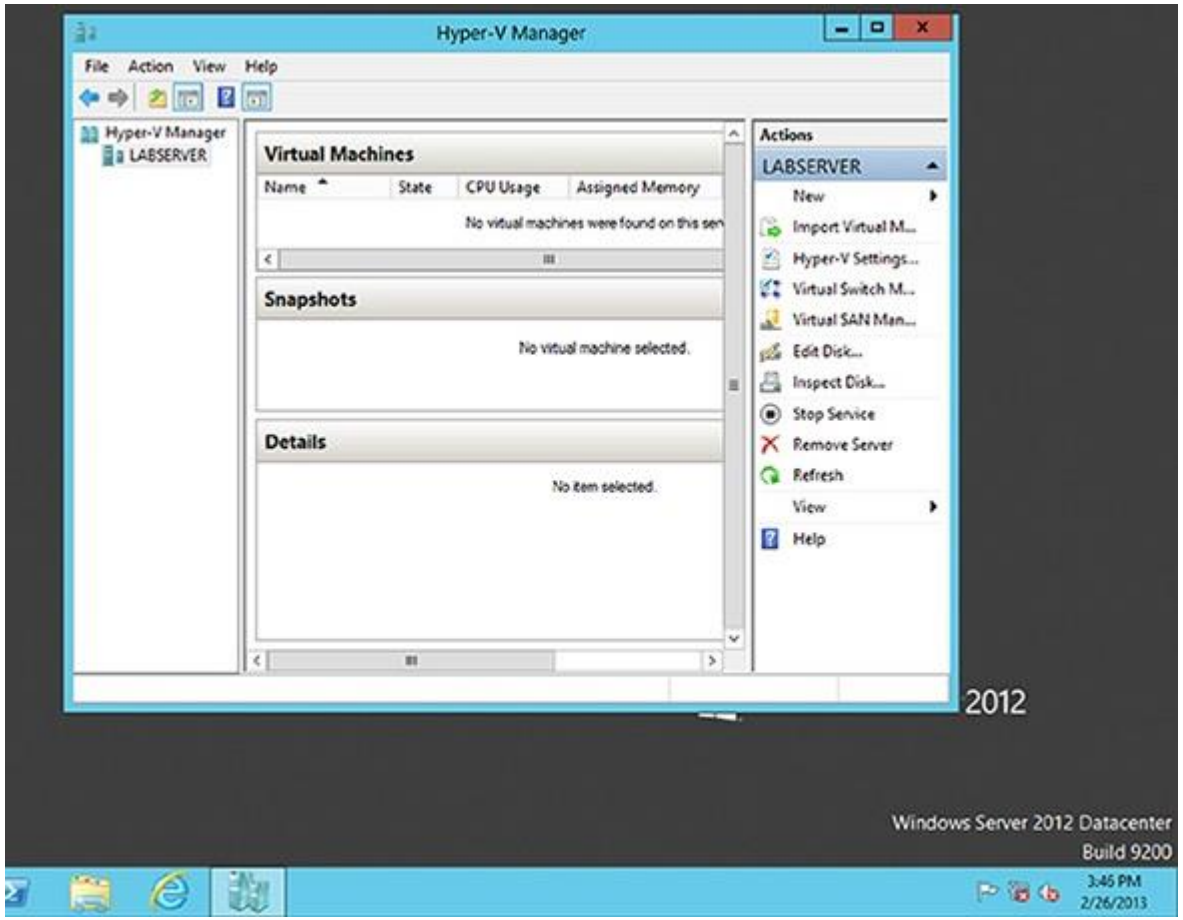
Hyper-V Installation and Configuration

Hyper-V in Server Manager



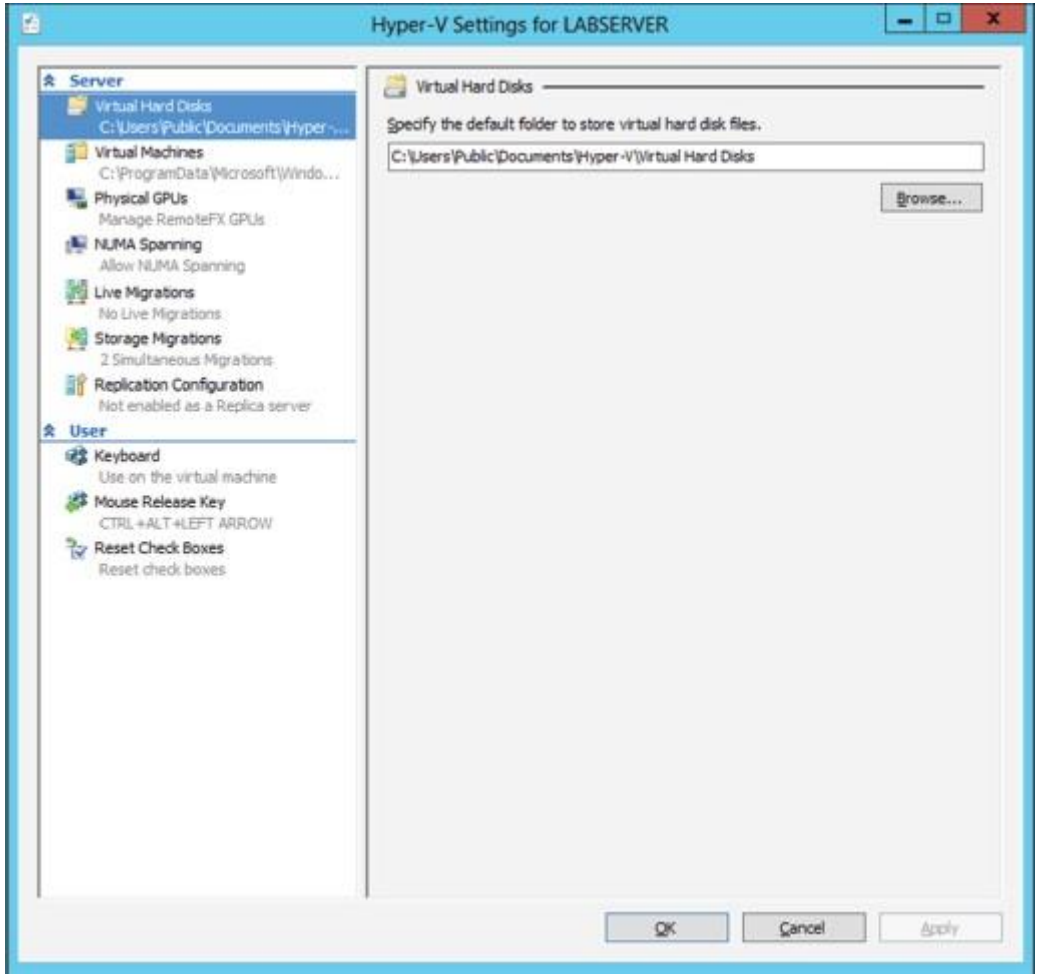
Hyper-V Installation and Configuration

Using Hyper-V Manager



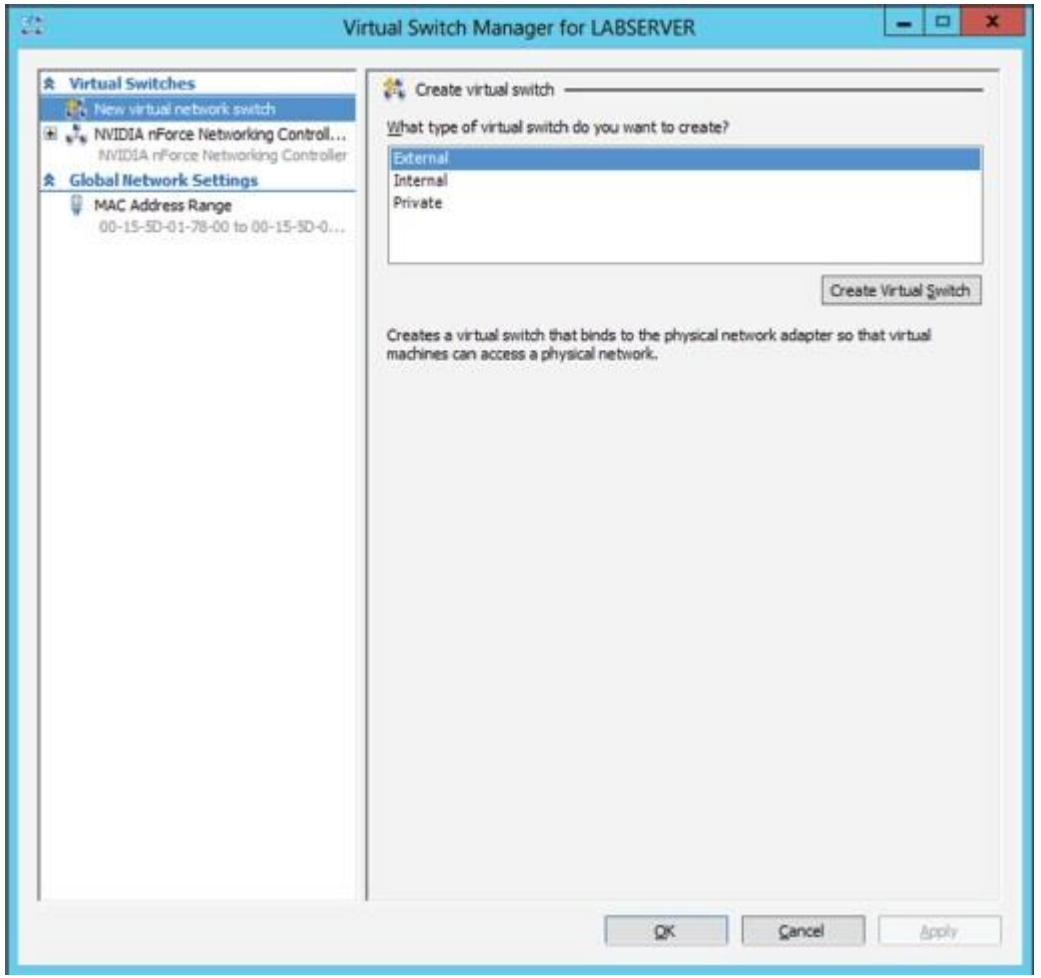
Hyper-V Installation and Configuration

Configure Hyper-V Settings



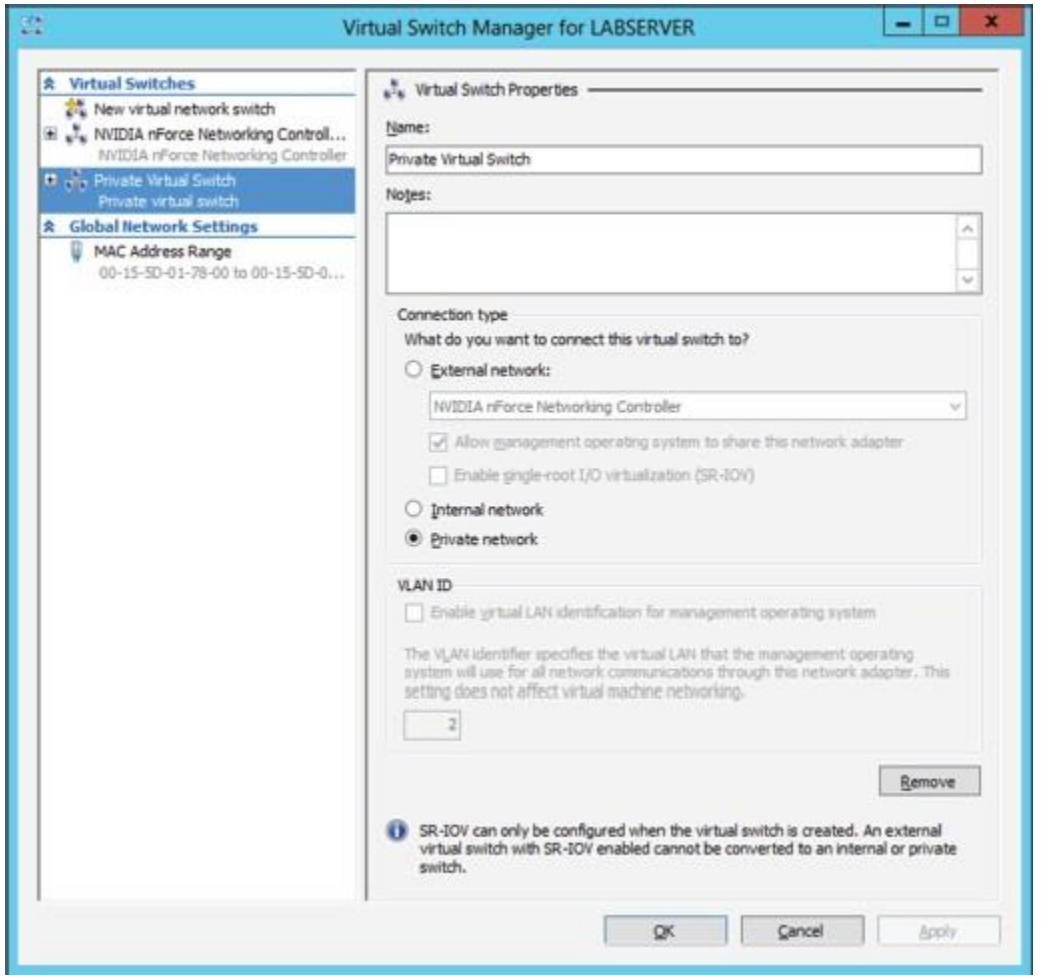
Hyper-V Installation and Configuration

Manage Virtual Switches



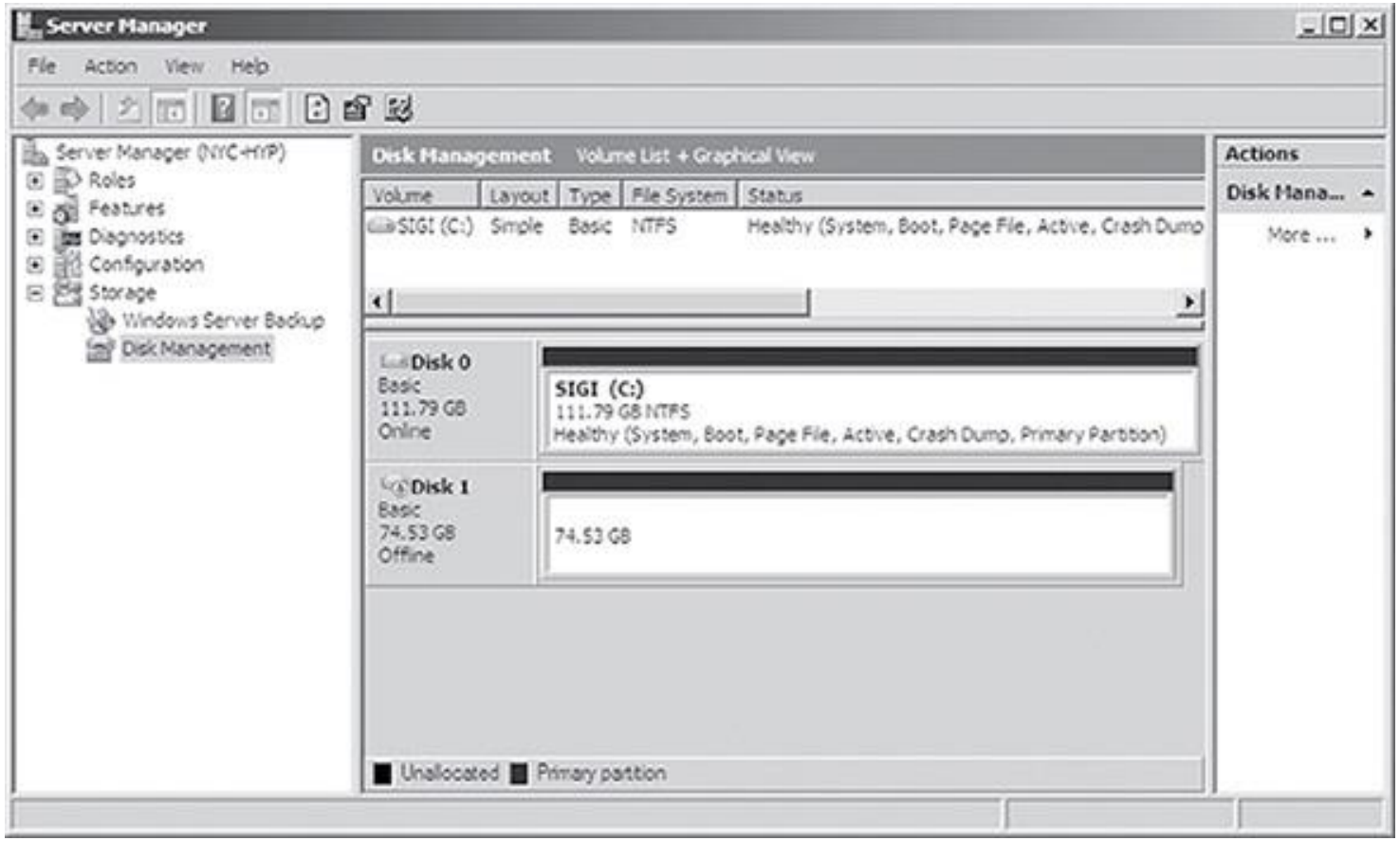
Hyper-V Installation and Configuration

Manage Virtual Switches



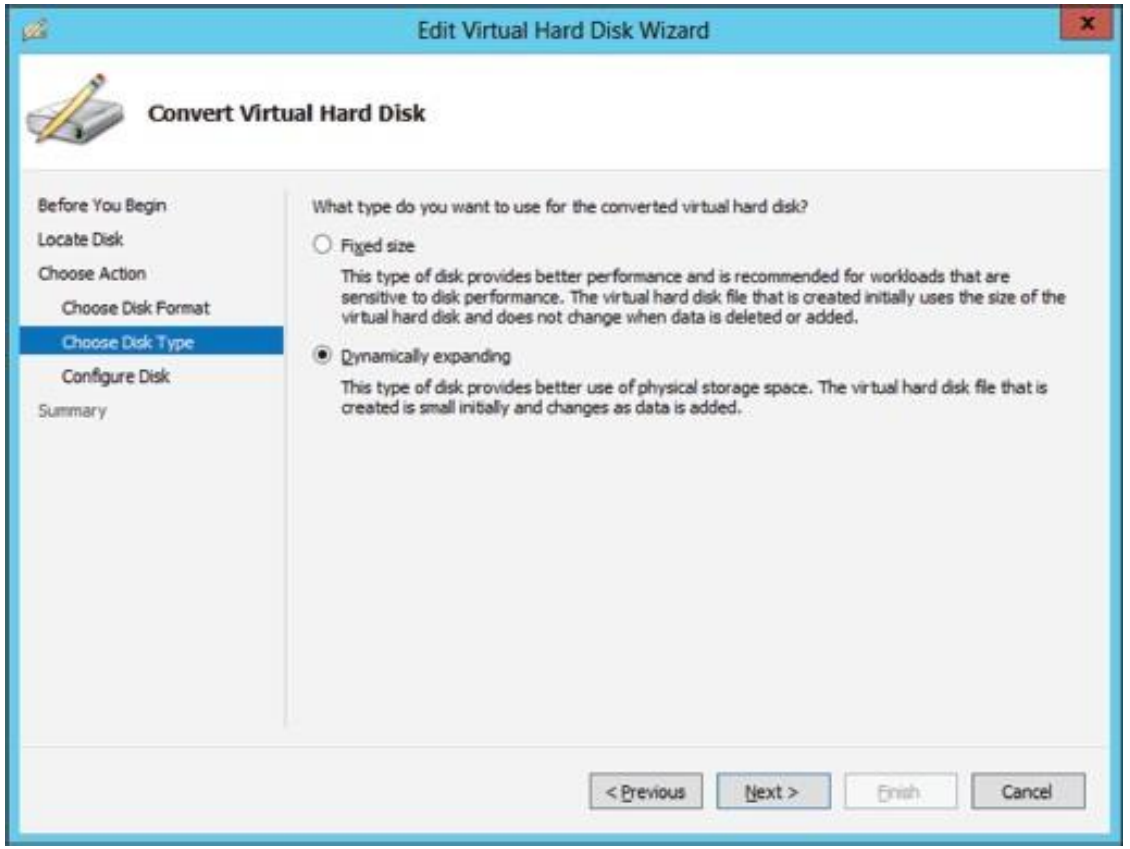
Hyper-V Installation and Configuration

Managing Virtual Hard Disks



Hyper-V Installation and Configuration

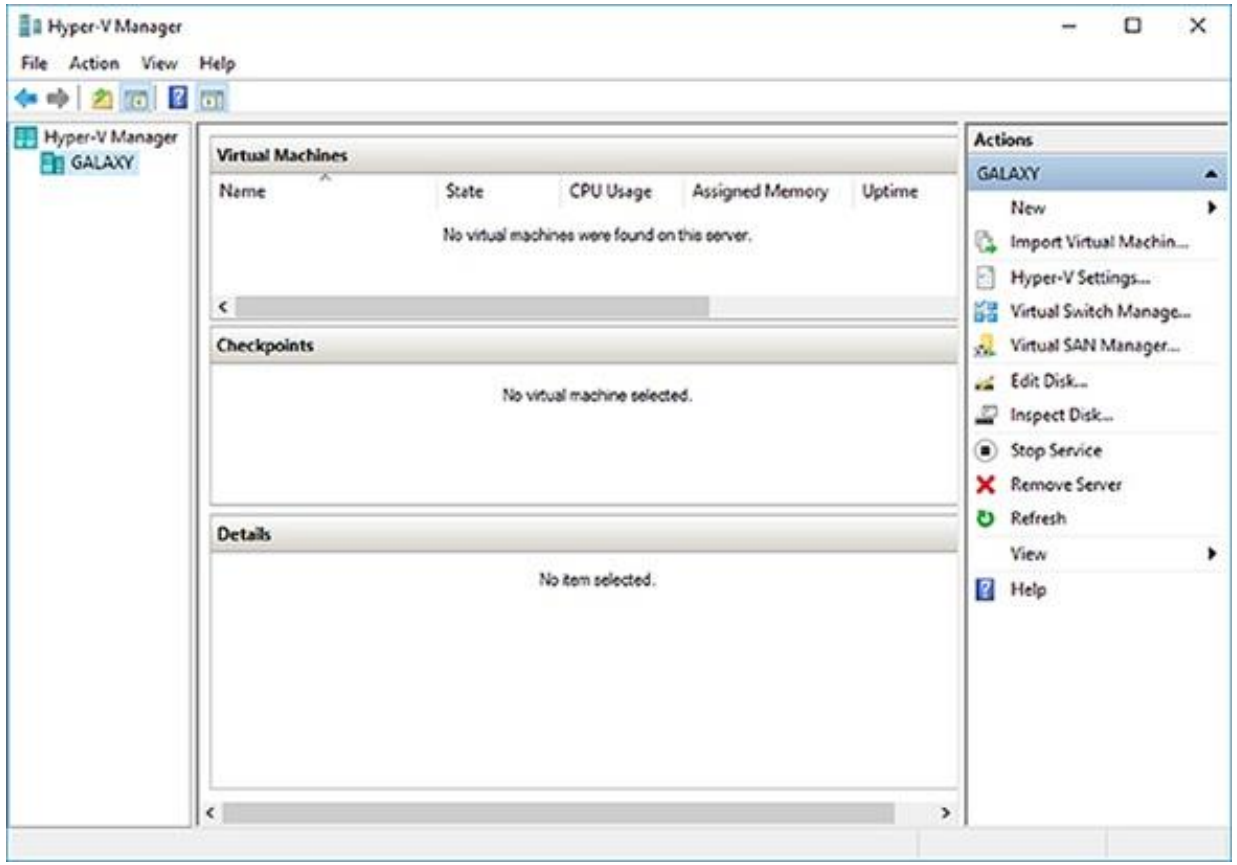
Managing Virtual Hard Disks



Hyper-V Installation and Configuration

Configuring Virtual Machines

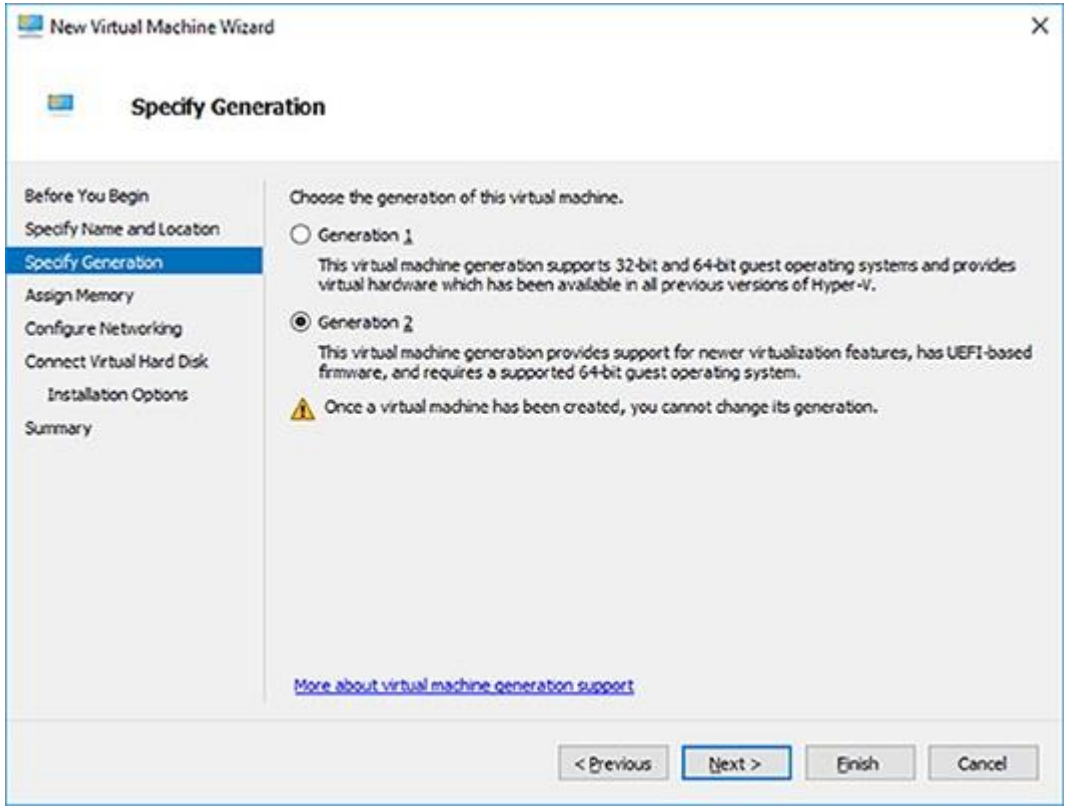
Creating and Managing Virtual Machines



Hyper-V Installation and Configuration

Configuring Virtual Machines

Creating and Managing Virtual Machines



Hyper-V Installation and Configuration

Configuring Virtual Machines

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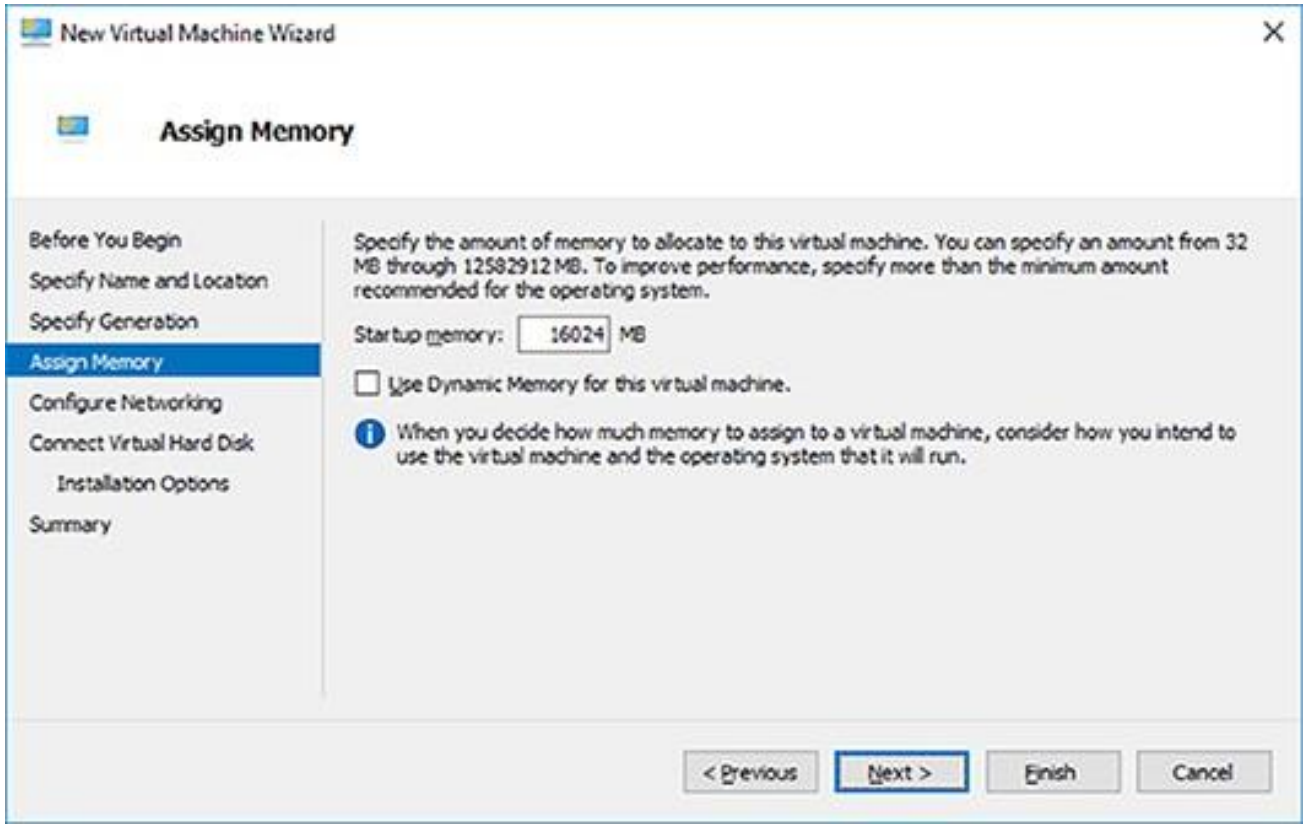

Hyper-V Installation and Configuration

Configuring Virtual Machines

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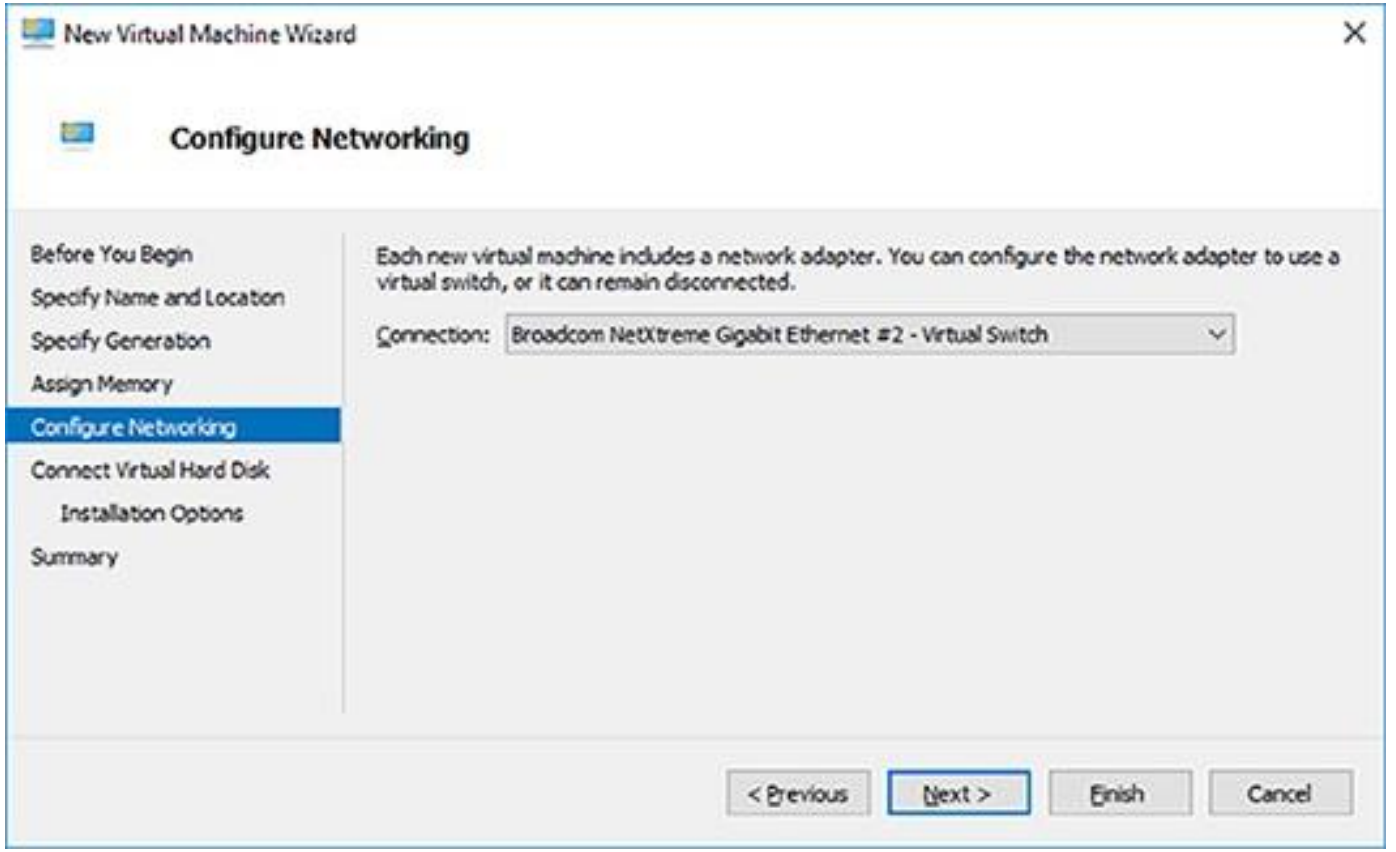

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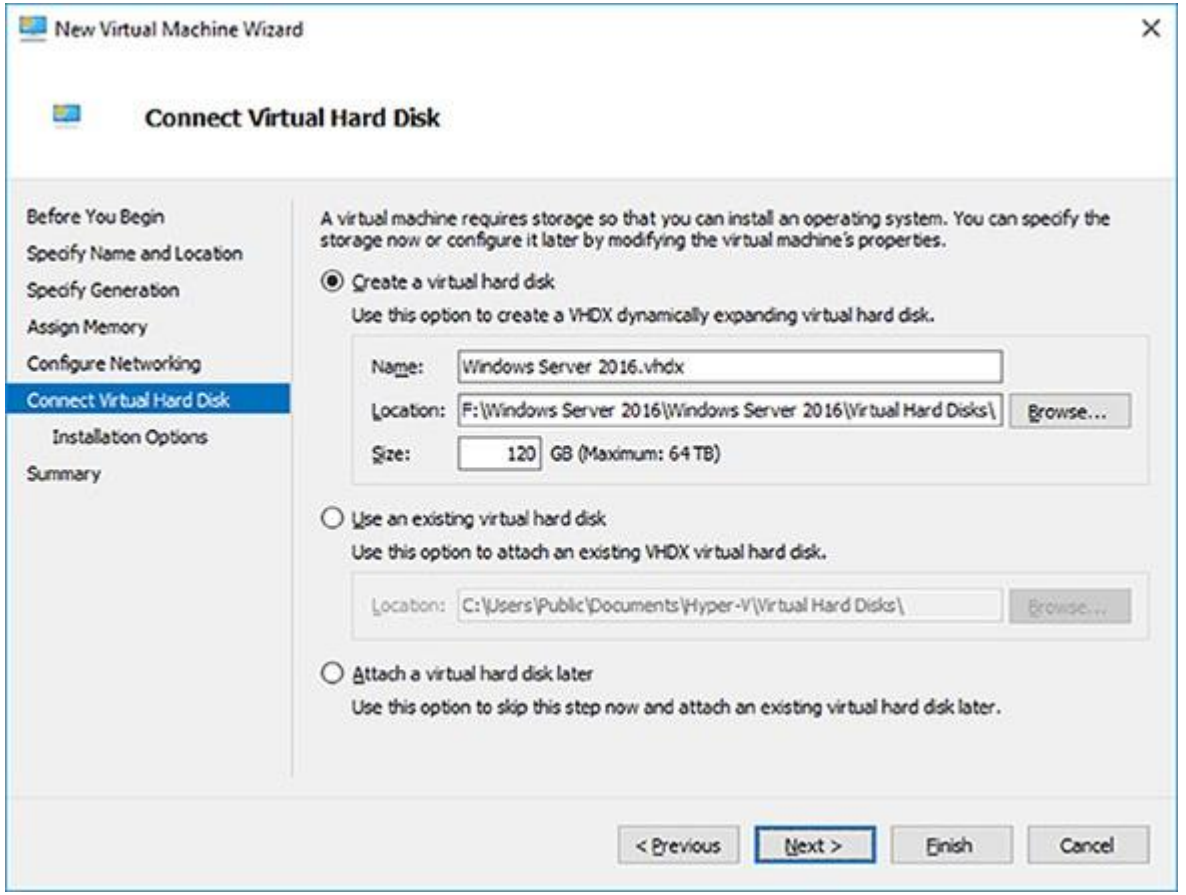

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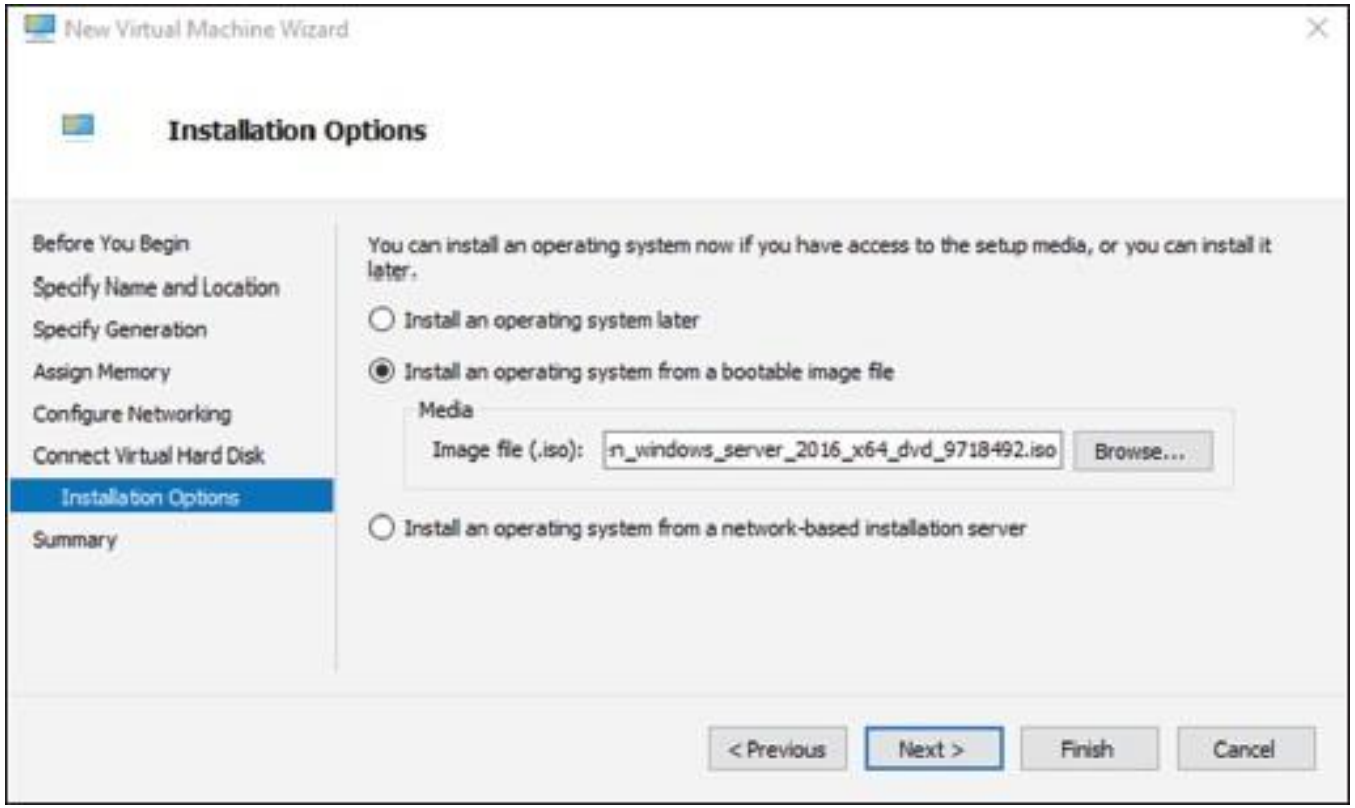

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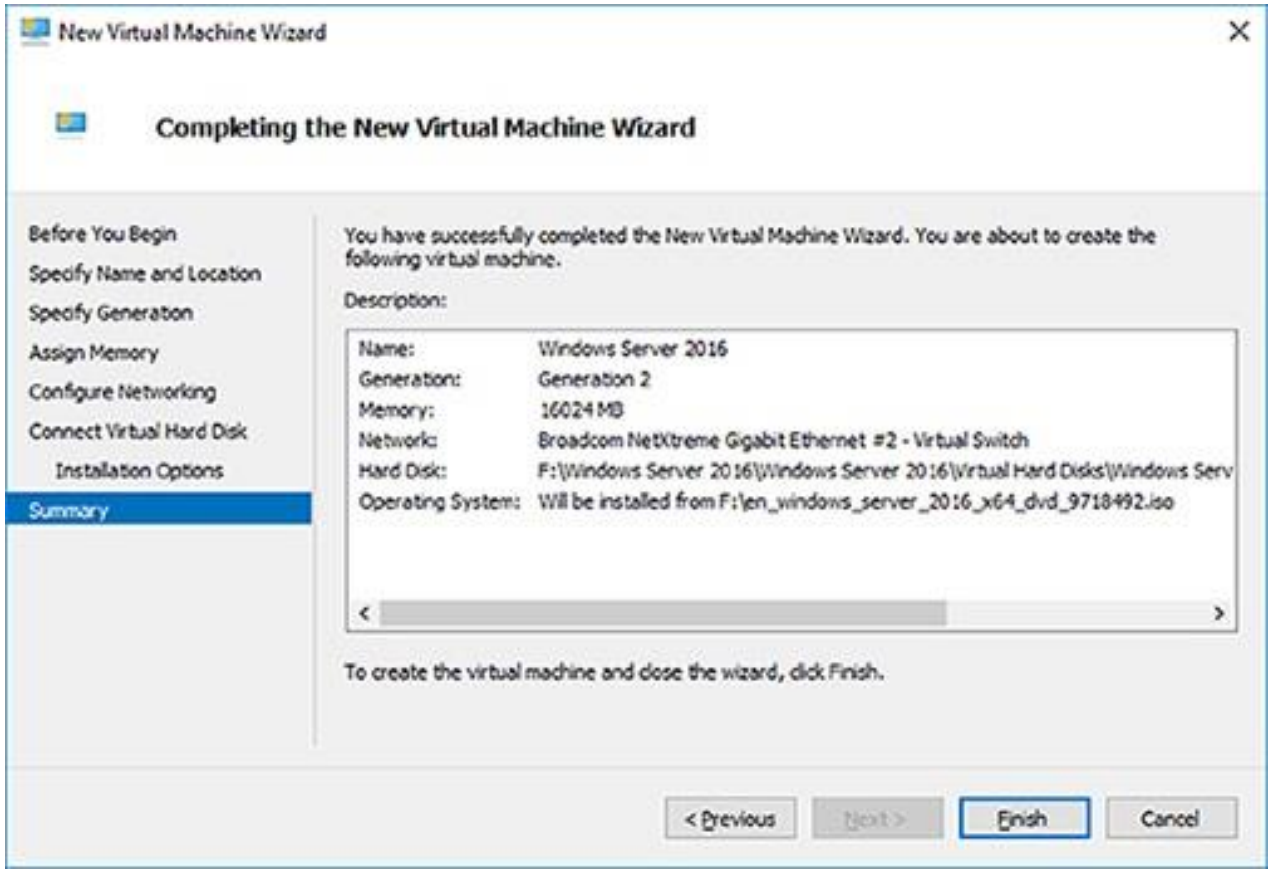

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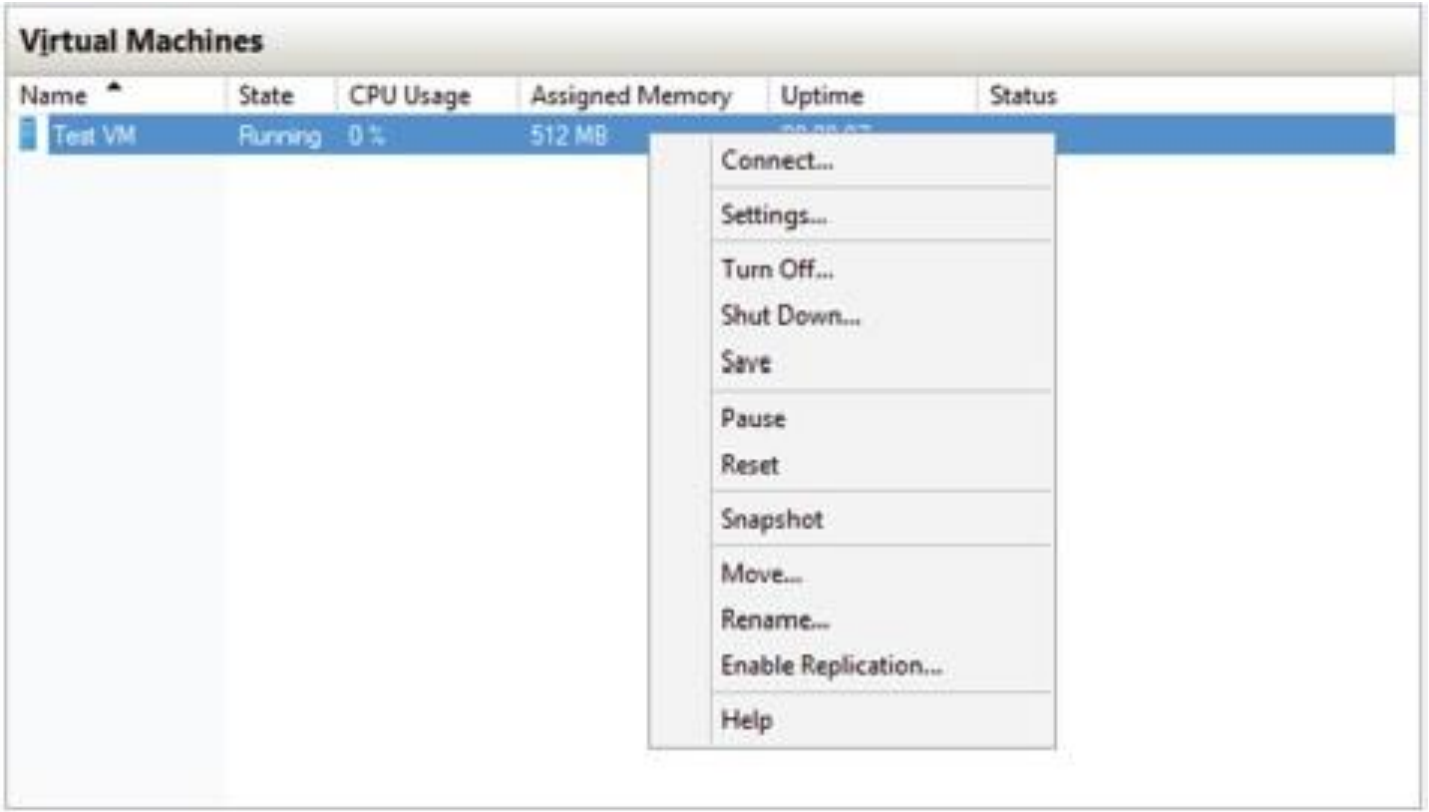

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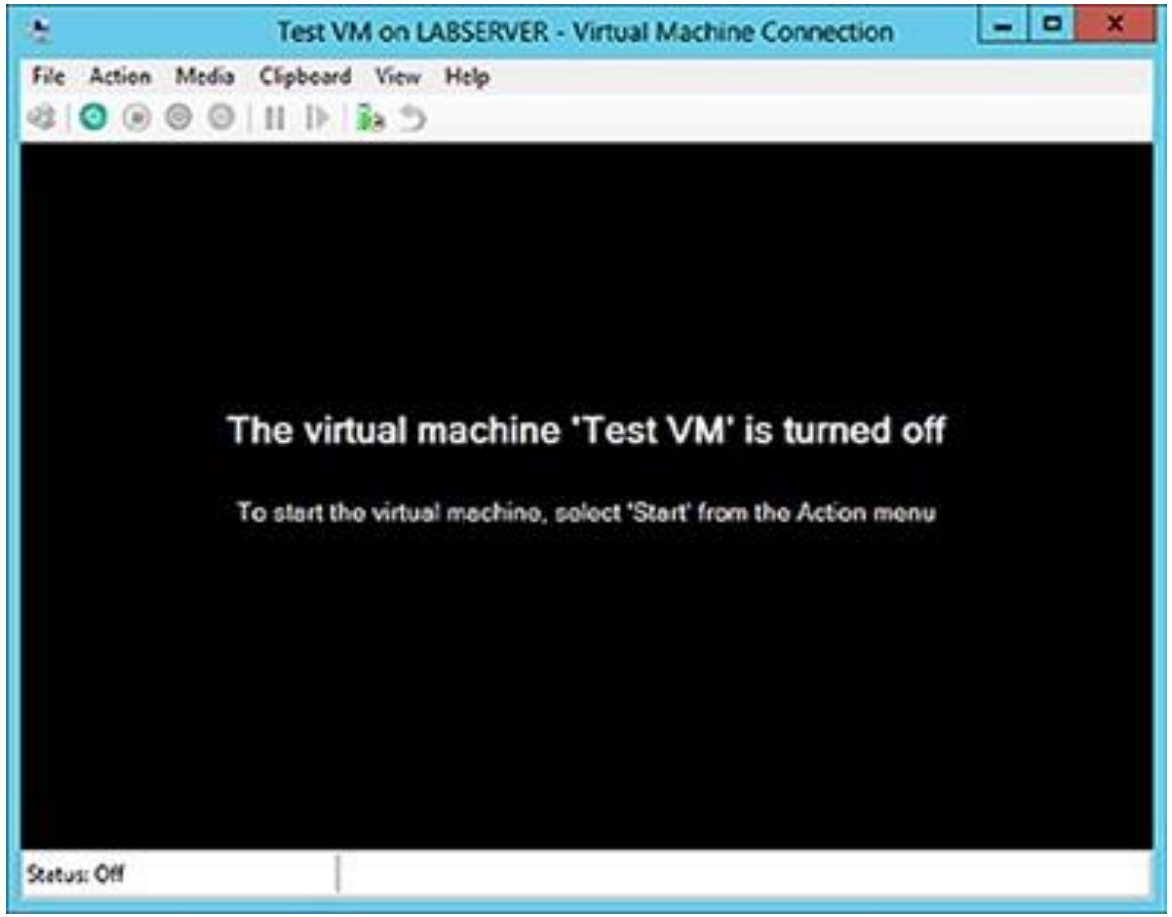

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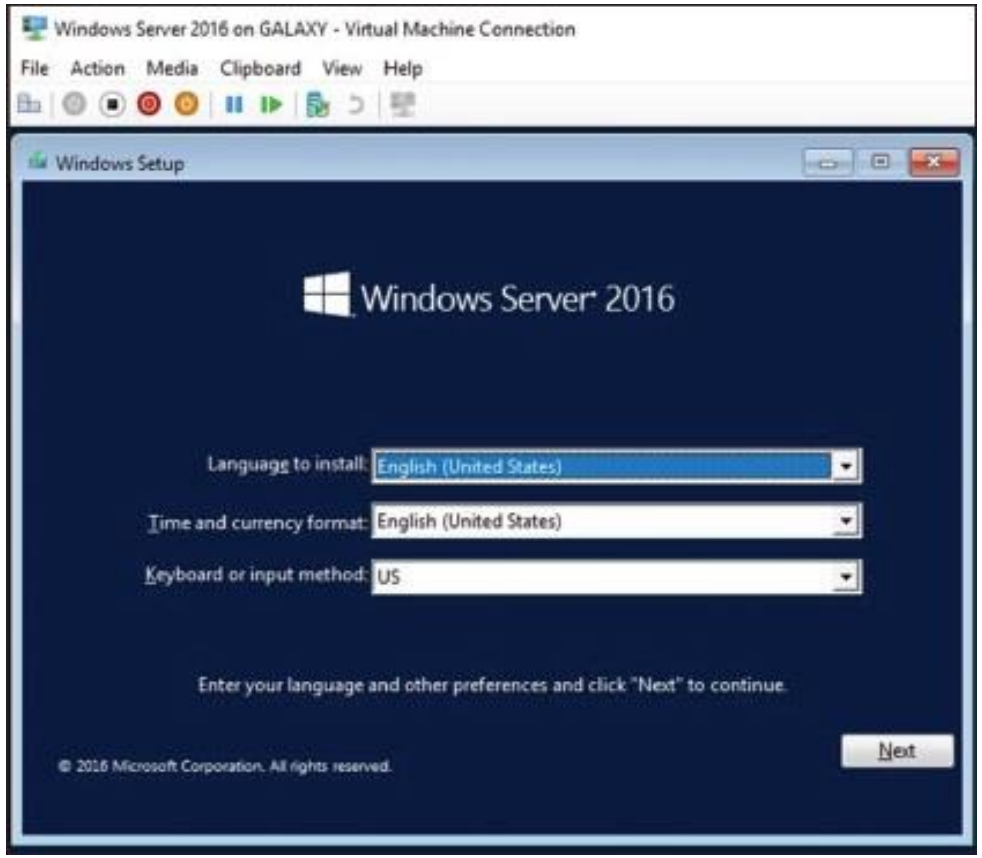


Q&A