

Hands-on Windows Server 2019 (3e)

Chapter 1 Solutions

Review Questions

1. Servers that exist within a data center that is publicly accessible on the Internet are referred to as on-premises servers. True or False?

Answer: False. On-premises servers are located within the premises of an organization, whereas cloud servers exist within a data center that is publicly accessible on the Internet.

2. Which of the following are hardware requirements for Hyper-V?
 - a. 64GB of memory
 - b. Two network interfaces
 - c. Processor with Intel VT or AMD-V and SLAT
 - d. A 32-bit or 64-bit processor

Answer: c. Hyper-V requires a processor with Intel VT or AMD-V extensions as well as SLAT support. The amount of memory or number of network interfaces is irrelevant to Hyper-V, and Hyper-V must be installed on a 64-bit processor only.

3. Which Hyper-V feature allows you to install a virtual machine within another virtual machine?
 - a. Nested virtualization
 - b. SLAT

- c. Checkpoints
- d. Hyper-V containers

Answer: a. Nested virtualization allows you to nest one virtual machine within another virtual machine. SLAT is a processor feature required for Hyper-V, checkpoints are used to roll back virtual machines to a previous state, and Hyper-V containers are Windows Containers that access a unique copy of the underlying Windows kernel.

4. Containers are often used to host Web apps within cloud environments. True or False?

Answer: True. Due to their small size, containers are often used to host Web apps within a cloud environment.

5. What term is used to refer to a logical grouping of computers that participate in Active Directory single sign-on?

- a. Group Policy
- b. Domain
- c. Domain controller
- d. Azure Active Directory

Answer: b. An Active Directory domain is a logical grouping of computers that participate in single sign-on. Group Policy is used to manage domain computers, domain controllers authenticate users within a domain, and Azure Active Directory is a cloud service that can be used to provide domain functionality.

6. Which component of Microsoft Defender can be used to provide cloud-based threat analysis within Windows Server 2019?

- a. Shielded virtual machines
- b. IIS
- c. ATP
- d. Windows Defender Firewall

Answer: c. Microsoft Defender ATP is an optional paid feature in Windows Server 2019 that uses cloud inspection to enhance malware detection. Shielded virtual machines provide encryption for virtual machine disk files, IIS is the Web server software within Windows Server, and Windows Defender Firewall provides firewall capabilities.

7. Windows Server 2019 supports up to 64 physical processors and 128 logical processors. True or False?

Answer: False. Windows Server 2019 supports up to 64 physical processors and an unlimited number of logical processors.

8. Which filesystem feature of Windows Server 2019 allows you to create large volumes that span multiple physical storage devices?

- a. Storage Spaces
- b. ReFS
- c. Storage Migration Service
- d. Storage Replicas

Answer: a. Storage Spaces allows you to create volumes that span multiple physical storage devices. ReFS is merely a filesystem that can be used on a volume. The Storage Migration Service copies data between systems, and Storage Replicas can be used to synchronize data between different servers and storage devices.

9. Clustering may be used with multiple Windows Server 2019 systems to enhance speed and fault tolerance for network services. True or False?

Answer: True. Clusters may be used to provide failover fault tolerance, as well as spread user requests across multiple servers for enhanced speed.

10. Which of the following management tools is not installed by default on Windows Server 2019?

- a. Server Manager
- b. MMC
- c. Windows PowerShell
- d. Windows Admin Center

Answer: d. The Windows Admin Center is an optional download following Windows Server 2019 installation. All other tools are included by default.

11. Commands within Windows PowerShell are referred to as cmdlets. True or False?

Answer: True. PowerShell uses the term cmdlet to refer to each command.

12. Which two small footprint installation options are available for Windows Server 2019? (Choose two answers.)

- a. Nano Server
- b. Microsoft Hyper-V Server
- c. Server Core
- d. Essentials

Answer: a, c. Nano Server and Server Core are small footprint installation options. Microsoft Hyper-V Server only provides Hyper-V, and Essentials Edition is only available with a full graphical desktop.

13. You can start the Windows Server Configuration Wizard within Server Core by running the `sconfig.cmd` command. True or False?

Answer: True. The `sconfig.cmd` command can be used to start the Windows Server Configuration Wizard in Server Core.

14. Which Windows Server edition supports Windows Containers and up to two Hyper-V Containers?

- a. Essentials
- b. Standard
- c. Datacenter
- d. Storage Server

Answer: b. While Standard and Datacenter both support Windows Containers and Hyper-V Containers, Standard is limited to a maximum of two Hyper-V Containers.

15. The minimum memory required for a graphical Windows Server 2019 installation is 512 MB. True or False?

Answer: False. 2 GB are required at minimum for a graphical Windows Server 2019 installation.

16. Which of the following Windows Server 2019 editions are licensed per processor core? (Choose all that apply.)

- a. Essentials
- b. Standard
- c. Datacenter
- d. Hyper-V Server

Answer: b, c. Standard and Datacenter editions are licensed per core. Essentials is licensed per server, and Hyper-V Server is free.

17. Which of the following is not a question that should be asked when planning a Windows Server 2019 installation?

- a. What are the storage needs of the server?
- b. Who will be supporting the server?
- c. How many users are expected to connect to the server?
- d. What services will the server run?

Answer: b. Capacity planning involves planning the hardware and software needs of a server based on the services that the server will provide and the number of

users that will connect to it. The person supporting the server following installation is not considered within this process.

18. To install a Windows Server 2019 virtual machine, you typically attach an ISO image file that contains the installation media to a virtual DVD drive within the virtual machine settings. True or False?

Answer: True. While a virtual machine can be configured to boot from a physical DVD, it is more common to attach an ISO image file to the virtual DVD within the virtualization management software.

19. Which of the following tasks are typically performed following a Windows Server 2019 installation? (Choose all that apply.)

- a. Verify the correct time and time zone information
- b. Activate the Windows Server 2019 operating system
- c. Configure the appropriate computer name and domain membership
- d. Set IP configuration on network interfaces

Answer: a, b, c, d. All of these tasks are typically performed following a Windows Server 2019 installation.

20. Server Manager is typically used to perform most post-installation tasks on a graphical Windows Server 2019 system. True or False?

Answer: True. Server Manager is a graphical tool that is installed by default on Windows Server 2019 and that can be used to perform all post-installation tasks.

Discovery Exercises

Discovery Exercise 1

Although answers will vary, some common benefits of virtualization in this environment include:

- Reduced licensing for future servers (a single Datacenter license can provide many licensed virtual machines)
- Less server hardware needed (provided that SAN storage is present)—e.g., 1U servers hosting multiple virtual machines
- Less power and cooling requirements
- The ability to run a virtual machine on any Hyper-V server on a rack following a server failure
- The ability to migrate a virtual machine to the cloud
- The ability to host a virtual machine in the cloud

Some common benefits of hosting the company Web apps within containers include:

- No additional licensing requirements
- Scalability
- The ability to migrate the container to the cloud
- The ability to host the container within the cloud

Discovery Exercise 2

Although answers will vary, some key considerations include:

- The edition and licensing required
- The hardware needs of the third-party app and database software
- The number of users that will connect to the server simultaneously
- Future scalability for both software and hardware

Discovery Exercise 3

Although answers will vary, some key features that Windows Server 2019 introduces beyond prior versions of Windows Server include enhanced security (e.g., Microsoft Defender ATS), more Azure cloud integration, the ability to run Linux apps using the Windows Subsystem for Linux, more scalability (e.g., unlimited logical processors), additional storage features, enhanced software defined networking for large datacenter environments that employ virtual machines, as well as additional speed improvements.

Discovery Exercise 4

Although answers will vary, an on-premises Windows Server 2019 system can centralize the authentication management of the PCs using Active Directory, provide key network services such as central file server storage, provide fault tolerance for key network services (e.g., clustering), as well as provide the ability to run Linux containers using the Windows Subsystem for Linux (to allow developers to test their Linux Web apps locally before deploying to the cloud).

Discovery Exercise 5

Although answers will vary, Server Core systems can easily be managed remotely using PowerShell, Server Manager, and the Windows Admin Center. As a result, there is no additional management overhead for using Server Core within your environment. Moreover, the Server Core App Compatibility Feature on Demand (FOD) framework can be added to provide additional compatibility for enterprise apps that rely on additional graphical frameworks.

Discovery Exercise 6

Although answers will vary, the IPv4 address shown indicates that a DHCP server was not available on the network, and an APIPA address was automatically configured. Similarly, the IPv6 address indicates that

ICMPv6 could not auto configure an IPv6 address. You should first determine if the server is connected to network media and within a network that provides IP auto-configuration. If the environment does not support IP auto-configuration, then you should manually configure the IPv4 settings (and possibly the IPv6 settings if IPv6 is used).

Discovery Exercise 7

Answers will vary—not available.