|  |
| --- |
| **True / False** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Only the Windows Server 2016 Standard and Datacenter editions are compatible with the common language runtime used in Microsoft .NET Framework and Microsoft Visual Studio .NET.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. A Windows Internet Name Service (WINS) server resolves fully qualified domain names and host names to IP addresses.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | False |

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| 3. IPv6 provides native support for the use of IP security (IPsec) to enhance network security.

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| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | True |

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| 4. Peer-to-peer networking offers only moderate network security because user account information must be maintained on each workstation.

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| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. The 192.168.100.0 network falls within the private network range.

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| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | True |

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| **Multiple Choice** |

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| 6. What Windows feature provides a scripting language and includes command-line tools in the form of "cmdlets" that can be used for automation?

|  |  |  |
| --- | --- | --- |
|   | a.  | Visual Basic Script interface |
|   | b.  | DOS Batch file processor |
|   | c.  | PowerShell |
|   | d.  | Bourne Again Shell |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| 7. What is the maximum number of supported central processor sockets for Windows Server 2016 Standard Edition?

|  |  |  |
| --- | --- | --- |
|   | a.  | 8 |
|   | b.  | 16 |
|   | c.  | 32 |
|   | d.  | 64 |

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| --- | --- |
| *ANSWER:* | d |

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| 8. What statement regarding the use of the Windows Server 2016 Essentials edition is accurate?

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| --- | --- | --- |
|   | a.  | Essentials is limited to a maximum of 50 users and 25 devices. |
|   | b.  | Essentials can join a pre-existing domain and function as a domain controller in the domain. |
|   | c.  | Hyper-V is not included in Server 2016 Essentials. |
|   | d.  | Server 2016 is limited to a maximum of 64 CPU sockets. |

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| *ANSWER:* | c |

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| 9. What Windows Server 2016 Standard and Datacenter feature provides the ability to move selected blocks of data to different storage locations, such as moving data from hard drive storage to solid state storage?

|  |  |  |
| --- | --- | --- |
|   | a.  | storage pinning |
|   | b.  | storage tiering |
|   | c.  | storage leveling |
|   | d.  | storage queuing |

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| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. Your computer has added a dynamically learned MAC address to the local ARP cache. Before the ARP cache timeout has expired, your computer reuses the same ARP cache entry. How long before the entry expires?

|  |  |  |
| --- | --- | --- |
|   | a.  | The entry will expire once the remainder of the 2 minute expiry period is up. |
|   | b.  | The entry will expire immediately after the last usage, regardless of the standard time out interval. |
|   | c.  | The entry will be entered into the ARP cache as a static entry. |
|   | d.  | The entry will remain for 10 minutes after the last usage. |

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| *ANSWER:* | d |

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| 11. What version of Windows Server 2016 can be used to share the same physical computer through each person connecting a keyboard, mouse, and monitor to a USB hub that connects to the server?

|  |  |  |
| --- | --- | --- |
|   | a.  | Windows Server 2016 Standard |
|   | b.  | Windows Server 2016 Terminal |
|   | c.  | Windows Server 2016 Multipoint Premium Server |
|   | d.  | Microsoft Hyper-V Server 2016 |

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| --- | --- |
| *ANSWER:* | c |

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| 12. What is NOT one of the three distinct advantages offered by a Windows Server Core installation?

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| --- | --- | --- |
|   | a.  | There is reduced overhead by removing the graphical interface. |
|   | b.  | Less disk space and memory are required to carry out every day tasks. |
|   | c.  | The computer has a much smaller attack surface. |
|   | d.  | Additional services and management utilities are made available. |

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| *ANSWER:* | d |

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| 13. What statement regarding the use of TCP and UDP is accurate?

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| --- | --- | --- |
|   | a.  | The TCP protocol is a connection-oriented communication because it ensures delivery of data. |
|   | b.  | TCP utilizes a smaller frame with less header information than UDP. |
|   | c.  | UDP is typically used when reliability of the communication is critical. |
|   | d.  | UDP uses a constantly adjusting window size to account for existing network traffic. |

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| *ANSWER:* | a |

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| 14. What is the IP address that is assigned to the network loopback interface?

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| --- | --- | --- |
|   | a.  | 224.0.0.255 |
|   | b.  | 192.168.1.1 |
|   | c.  | 127.0.0.1 |
|   | d.  | 1.1.1.1 |

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| *ANSWER:* | c |

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| 15. What is the minimum amount of RAM required in order to support Windows Server 2016 with a GUI desktop?

|  |  |  |
| --- | --- | --- |
|   | a.  | 512 MB |
|   | b.  | 1 GB |
|   | c.  | 2 GB |
|   | d.  | 4 GB |

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| *ANSWER:* | c |

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| 16. Why do newer versions of the Windows client operating systems reduce the TCO for a network running Windows Server 2016?

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| --- | --- | --- |
|   | a.  | The latest Windows operating systems provide more automated installation, configuration, desktop, and management policy features compatible with Server 2016. |
|   | b.  | The latest Windows operating systems are not as expensive to purchase licenses for as older workstations. |
|   | c.  | The older Windows operating systems are no longer supported by Windows Server 2016, and often require third party management plugins to be added to Server 2016. |
|   | d.  | The older Windows operating systems require security software in order to be secured on the network. |

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| *ANSWER:* | a |

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| 17. What statement regarding the use of Microsoft Hyper-V is accurate?

|  |  |  |
| --- | --- | --- |
|   | a.  | Hyper-V supports only 64-bit operating systems. |
|   | b.  | Hyper-V supports only Windows based operating systems. |
|   | c.  | Hyper-V requires the use of a server cluster. |
|   | d.  | Hyper-V supports both Windows and Linux operating systems. |

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| *ANSWER:* | d |

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| 18. What term is used to describe the Windows Server 2016 ability to run a program in an area of memory separate from areas used by other programs?

|  |  |  |
| --- | --- | --- |
|   | a.  | cooperative multitasking |
|   | b.  | preemptive multitasking |
|   | c.  | precognitive multitasking |
|   | d.  | ordered multitasking |

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| --- | --- |
| *ANSWER:* | b |

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| 19. What is the maximum number of logical processors supported by Windows Server 2016 when Hyper-V is not in use?

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| --- | --- | --- |
|   | a.  | 160 |
|   | b.  | 320 |
|   | c.  | 640 |
|   | d.  | 1280 |

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| *ANSWER:* | c |

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| 20. What type of Windows Server 2016 container relies on process and user-mode isolation, which involves a base-level sharing of the operating system kernel?

|  |  |  |
| --- | --- | --- |
|   | a.  | Hyper-V containers |
|   | b.  | Windows server containers |
|   | c.  | Partition level containers |
|   | d.  | App level containers |

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| *ANSWER:* | b |

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| 21. What is NOT one of the advantages that can be provided by Windows Server 2016 when implementing the server-based network model?

|  |  |  |
| --- | --- | --- |
|   | a.  | Software applications can be stored and shared from a central location. |
|   | b.  | Printers can be shared with other computers on the network. |
|   | c.  | Increased network management ability through workgroups. |
|   | d.  | Increased security due to shared resources and central management. |

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| *ANSWER:* | c |

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| 22. What enables Linux clients to access a Linux virtual machine in Hyper-V?

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| --- | --- | --- |
|   | a.  | Linux Operations (LO) |
|   | b.  | Linux Integration Services (LIS) |
|   | c.  | Linux Client Access (LCA) |
|   | d.  | Linux Remote Desktop (LRD) |

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| *ANSWER:* | b |

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| 23. What does the Internet Information Services (IIS) role do?

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| --- | --- | --- |
|   | a.  | It enables the server to function as a DNS server. |
|   | b.  | It enables the use of the Secure Copy protocol. |
|   | c.  | It enables the server to act as a web server. |
|   | d.  | It provides domain connected clients with routing information. |

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| *ANSWER:* | c |

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| 24. What statement regarding the use of Windows Server Core is accurate?

|  |  |  |
| --- | --- | --- |
|   | a.  | Server Core, despite the smaller foot print, still provides a graphical interface. |
|   | b.  | The Server Core allows the use of Server Manager locally, but no other GUI utilities. |
|   | c.  | The Server Core displays a mouse pointer on the screen. |
|   | d.  | Server Core allows the ability to open the Notepad screen editor for editing files. |

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| *ANSWER:* | d |

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| 25. What mode does the operating system kernel run in, that protects it from problems created by malfunctioning programs and processes?

|  |  |  |
| --- | --- | --- |
|   | a.  | privileged mode |
|   | b.  | admin mode |
|   | c.  | root mode |
|   | d.  | protected mode |

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| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26. What type of network communication sends a message to all points on a specific network, and is typically not forwarded by routers?

|  |  |  |
| --- | --- | --- |
|   | a.  | anycast |
|   | b.  | unicast |
|   | c.  | broadcast |
|   | d.  | multicast |

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| --- | --- |
| *ANSWER:* | c |

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| 27. The Class A network is defined by what subnet mask?

|  |  |  |
| --- | --- | --- |
|   | a.  | 255.0.0.0 |
|   | b.  | 255.255.0.0 |
|   | c.  | 255.255.255.0 |
|   | d.  | 255.255.255.255 |

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| *ANSWER:* | a |

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| 28. You are on the 172.16.99.0 network with a subnet mask of 255.255.254.0. What is NOT a valid host IP address on this network?

|  |  |  |
| --- | --- | --- |
|   | a.  | 172.16.99.1 |
|   | b.  | 172.16.100.0 |
|   | c.  | 172.16.99.255 |
|   | d.  | 172.16.100.255 |

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| *ANSWER:* | d |

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| 29. You are working on a Windows Server 2016 installation with an IP address of 192.168.100.76, and a subnet mask of 255.255.255.0. What is the network identifier for this network in binary octet format?

|  |  |  |
| --- | --- | --- |
|   | a.  | 11000000.10101000.01100100.00000000 |
|   | b.  | 11000000.10101000.01100110.00000000 |
|   | c.  | 10000000.10101000.01100100.00000000 |
|   | d.  | 10000000.10111000.01100100.00000000 |

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| *ANSWER:* | a |

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| 30. What is the minimum amount of disk space required for installing Windows Server Core?

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| --- | --- | --- |
|   | a.  | 400 MB |
|   | b.  | 32 GB |
|   | c.  | 36 GB |
|   | d.  | 50 GB |

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| *ANSWER:* | b |

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| --- |
| **Matching** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Match each item with a statement below.

|  |  |
| --- | --- |
| a.  | Active Directory |
| b.  | Automatic Private IP Addressing (APIPA) |
| c.  | container |
| d.  | default gateway |
| e.  | Desired State Configuration |
| f.  | Internet Protocol Version 4 (IPv4) |
| g.  | Internet Protocol Version 6 (IPv6) |
| h.  | kernel |
| i.  | media access control (MAC) address |
| j.  | subnet mask |

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| 31. A central database of computers, users, shared printers, shared folders, other network resources, and resource groupings that is used to manage a network and enable users to quickly find a particular resource.

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| *ANSWER:* | a |

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| 32. Used to automatically configure the TCP/IP settings for a computer, assigning an IP address within the range of 169.254.0.1-169.254.255.254, if a DHCP server is unavailable.

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| --- | --- |
| *ANSWER:* | b |

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| 33. An operating environment that enables applications to run in an isolated fashion and provides the ability to execute multiple applications on one computer system.

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| *ANSWER:* | c |

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| 34. The IP address of the router that has a connection to other networks. The default gateway address is used when the host computer you are trying to contact exists on another network.

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| *ANSWER:* | d |

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| 35. A feature of Windows Server 2016 that enables monitoring of specific server states and roles to ensure that desired server states are not inadvertently altered.

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| *ANSWER:* | e |

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| 36. The most commonly used version of IP, which has been in use for many years. It has a limitation in that it was not designed to anticipate the vast numbers of networks and network users currently in existence.

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| *ANSWER:* | f |

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| 37. The newest version of IP that is designed for enhanced security and that can handle the addressing needs of growing networks.

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| --- | --- |
| *ANSWER:* | g |

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| 38. An essential set of programs and computer code that allows a computer operating system to control processor, disk, memory, and other functions central to its basic operation.

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| *ANSWER:* | h |

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| 39. Also called a physical or device address, the hexadecimal number permanently assigned to a network interface and used by the MAC sublayer (a communications sublayer for controlling how computers share communications on the same network).

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| *ANSWER:* | i |

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| 40. Used to distinguish between the network part and the host part of the IP address and to enable networks to be divided into subnets.

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| *ANSWER:* | j |

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| **Subjective Short Answer** |

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| 41. What are the two different types of containers supported by Windows Server 2016?

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| *ANSWER:* | There are two types of containers: Windows Server containers and Hyper-V containers. Windows Server containers use isolation through domain namespace capabilities and by isolating running processes. In Hyper-V, isolation is achieved because each container runs within a "lightweight" virtual machine. Standard Edition supports unlimited Windows Server containers and up to two Hyper-V containers. |

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| 42. What is a domain, and how does it affect computers and users that are members of the domain?

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| *ANSWER:* | A domain is a grouping of network objects, such as computers, servers, and user accounts, that provides for centralized management. Computers and users in a domain can be managed to determine what resources they can access, such as printers and shared folders. A domain is given a name, such as Microsoft.com for Microsoft. In addition, computers within a domain are given a unique name, which often parallels the name of a user, such as Brown, or is a favorite name or word, such as antelope or popcorn. |

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| 43. How does Windows Nano Server differ from Windows Server Core?

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| *ANSWER:* | Windows Nano Server is based on the same small footprint idea as Windows Server Core, but it is smaller still. Having a base image of only 400 MB, Nano Server is many times smaller than even Server Core. However, Nano Server still has fundamental elements, such as the .Net Framework, used to develop and execute applications. The idea behind Nano Server is to provide a basic foundation for server computing, particularly in the cloud, that can be used for the next 20 years. Nano Server is designed to run only 64-bit applications. It is intended to be faster and to need less maintenance than graphical Windows Server or Server Core, such as updates, because it is such a bare-bones operating system. Because you cannot sign in to Nano Server locally, it is not suitable to be housed in a single standalone computer box. Rather, it is designed to be installed on a modular server card (called a blade server) in an enclosed cabinet (called a blade enclosure) containing many such cards. |

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| 44. How does TCP provide for reliable end-to-end delivery of data?

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| *ANSWER:* | The Transmission Control Protocol (TCP) portion of TCP/IP provides for reliable end-to-end delivery of data by controlling data flow. Computers or network stations agree upon a "window" for data transmission that includes the number of bytes to be sent. The transmission window is constantly adjusted to account for existing network traffic. TCP/IP monitors for requests to start a communications session, establishes sessions with other TCP stations, handles transmitting and receiving data, and closes transmission sessions when they are finished. |

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| 45. What purpose does a subnet mask serve?

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| --- | --- |
| *ANSWER:* | A subnet mask is used for two purposes: to show the class of addressing used and to divide a network into subnetworks or subnets to control network traffic. In the first instance, the subnet mask enables an application to determine which part of the address is for the network ID and which is for the host ID. For example, a subnet mask for a Class A network is all binary 1s in the first octet and all binary 0s in remaining octets: 11111111.00000000.00000000.00000000 (255.0.0.0 in decimal). |

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| 46. What is the difference between a unicast, multicast, broadcast, and anycast transmission?

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| *ANSWER:* | A unicast is a transmission in which one packet is sent from a server to each client that requests a file or application, such as a video presentation. Thus, if five clients request the video presentation, the server sends five packets per each transmission to the five clients. In the same example, a multicast means that the server is able to treat all five clients as a group and send one packet per transmission that reaches all five clients. A broadcast sends communication to all points on a specific network, with routers often being the boundaries of those broadcasts. An anycast packet is an IPv6 packet that contains a destination address that is associated with multiple interfaces, usually on different nodes. The anycast packet goes only to the closest interface and does not attempt to reach the other interfaces with the same address. |

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| 47. What is clustering, and what advantages does it provide?

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| *ANSWER:* | Clustering is the ability to increase the access to server resources and provide fail-safe services by linking two or more discrete computer systems so they appear to function as one. An immediate advantage of server clustering is the increase in computer speed or capacity to complete server tasks faster. Also, server clustering provides more computing power for handling resource-hungry applications. With clustering, as an organization adds more users and requires more demanding applications, one or more computers can be added to the cluster to handle the growth. This is a faster, less-expensive approach than having to purchase a larger computer and transfer users and applications to a new system because the old one is overwhelmed. |

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| 48. What is the difference between multitasking and multithreading?

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| *ANSWER:* | Multitasking is the ability to run two or more programs at the same time. For example, Microsoft Word can print a document at the same time that a Microsoft Excel spreadsheet can calculate the sum of a column of numbers. Multithreading is the capability of programs written to run several program code blocks, or "threads," at the same time. For instance, a Microsoft Access database query runs a thread to pull data out of the database, while another thread generates a subtotal of data already obtained. |

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| 49. What are physical processors and logical processors, and how are they related?

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| *ANSWER:* | A physical processor is plugged into a processor socket on the motherboard of the computer. One physical processor can actually house several logical processors. Each logical processor is a core that can run its own executable threads. A physical processor might consist of four cores, for example, that enable it to function as four processors in one. |

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| 50. What is Windows PowerShell, and how does it facilitate automation?

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| *ANSWER:* | Windows PowerShell is a command-line interface that offers a shell, a customized environment for executing commands and scripts. A scripting language is also implemented in Windows PowerShell. Scripts save time because commands don't have to be typed individually by the user each time a particular set of activities needs to be accomplished, such as adding new data to a file. |

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