

Term 3 - Microsoft Server Assignment

Module 12 : Installation, Storage, and Compute With Windows Server

- 1) Processor — 1.4Ghz 64-Bit processor.
 - Ram — 512MB ECC RAM (2GB for Desktop Environment or Essentials)
 - Hard drive — 32 GB of free space.
 - Network — At least one network card with 1 Gigabit throughput.
- 2) Includes new datacenter functionality including shielded virtual machines
 - Software-defined networking
 - Storage spaces direct and storage replica.
- 3) Add and Remove Roles and Features on Windows Server

- To open Server Manager, click the Server Manager icon in the taskbar or select Server Manager in the Start Menu.
 - Click Manage in the upper right portion of the screen and click Add Roles and Features to open a wizard.
- 4) A workgroup is a collection of computers on a local area network (LAN) that share common resources and responsibilities.
 - 5) A domain is a particular field of thought, activity, or interest, especially one over which someone has control, influence, or rights.
 - 6) Windows PowerShell is a powerful tool for automating tasks and simplifying configuration and can be used to automate almost any task in the

Windows ecosystem, including active directory and exchange.

- 7) A migration is a direct translation of a previous control system onto a new one, while an upgrade introduces new features, modernizations, or other innovative technologies.
- 8) License in web licensing model is tied to specific serial number which is valid for specific Product.
- 9) Validate and back up the database
Before you begin an upgrade, validate your database, and back up your software and database.
- 10) Your existing destination instance must be empty or contain only system configuration data.
- 11) Benefits to using Server Core are:
Reduced attack surface & improved application security environment.

- 12) Nano Server is a specialized platform optimized for running modern applications and microservices in cloud and container environments.
- 13) Nano Server was created to serve as cloud fabric and infrastructure (Hyper-V host, clustering, networking, storage) and as a deployment option for applications that are — as they call it — born in the cloud.
- 14) Not have a graphical user interface (GUI), and you can only manage it through the command line, PowerShell, or remote tools.
- Nano Server has a significantly smaller API surface.
- 15) MBR is the most common format and is compatible with BIOS systems.
- GPT is a newer type that works with UEFI systems.

- 16) VHDX is the newer version of the original VHD file format created by Microsoft.
- 17) Network File System (NFS) and Server Message Block (SMB) are file access storage protocols or rules for efficient file sharing over a network.
- 18) Share permissions allow you to control who accesses folders over the network.
- 19) NTFS permissions are used to manage access to the files and folders that are stored in NTFS file systems.
- 20) Resource Ownership is the creation of a job match for a consumer, which is consistent with the consumer's strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice, an individual to be hired.

- 21) A storage pool is capacity aggregated from disparate physical storage resources in a shared storage environment.
- 22) Basic is just that - a basic disk, you can remove and add it as will. Dynamic disk is an enhanced partition table in Windows that enables enhanced features such as software raid.
- 23) Simple volumes are used when you have enough disk space on a single drive to hold your entire volume.
Spanned Volumes. A spanned volume consists of disk space on two or more dynamic drives; up to 32 dynamic drives can be used in a spanned volume configuration.
- 24) The most common types are RAID 0 (striping), RAID 1 (mirroring) and its variants, RAID 5 (distributed parity), and

RAID 6 (dual parity). Multiple RAID levels can also be combined or nested, for instance RAID 10 (striping of mirrors) or RAID 01 (mirroring stripe sets).

25) DAS primarily uses hard-drive storage with sectors, NAS uses shared files, and SAN uses block storage.

26) The host contains one or more initiators that attach to an IP network to initiate requests to and receive responses from an iSCSI target.

27) Duplicate data occurs when storing the same data entries in the same data storage system, or across multiple systems.

28) Virtualization is technology that you can use to create virtual representations of servers, storage, networks, and other physical machines.

29) Types of virtualization

- Server virtualization. Server virtualization is a process that partitions a physical server into multiple virtual servers.
- Storage virtualization.
- Network virtualization.
- Data virtualization.
- Application virtualization.
- Desktop virtualization.

30) Hyper-V is Microsoft's hardware virtualization product.

- It lets you create and run a software version of a computer, called a virtual machine.
- Each virtual machine acts like a complete computer, running an operating system and programs.

31) It is an MMC console that easily manages your Hyper-V host, creates

virtual machines, manages Hyper-V networking, etc.

- 32) Hyper-V Manager provides a comprehensive set of tools for effectively managing virtualization.
- 33) Nested virtualization lets you run virtual machine (VM) instances inside of other VMs so you can create your own virtualization environments.
- 34) The Dynamic Memory Management (DMM) feature provides an advanced method to utilize physical memory while emulating a hard disk.
- 35) System designers use non-uniform memory access (NUMA) to increase processor speed without increasing the load on the processor bus.
- 36) It can run in a window as a separate computing environment, often to run a different operating system—or even to

function as the user's entire computer experience—as is common on many people's work computers.

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38) A checkpoint creates a known good point from which the SQL Server Database Engine can start applying changes contained in the log during recovery after an unexpected shutdown or crash.

39) Hyper-V Network Virtualization provides "virtual networks" (called a VM network) to virtual machines similar to how server virtualization (hypervisor) provides "virtual machines" to the operating system.

- A virtual network interface card (vNIC) represents the configuration of a VM connected to a network.
- Hyper-V Virtual Switch is a software-based layer-2 Ethernet network switch that is available in Hyper-V Manager when you install the Hyper-V server role.

40) Virtual disks created in the Hyper-V environment can be stored as files in VHD or VHDX format located on a physical disk.

- After we finish out the wizard to create the Hyper-V VM, we can go back into the properties of the VM and add a hard disk.
- Click the New button.
- This will begin the New Virtual Hard Disk Wizard.

- Here we can choose Fixed size, Dynamically expanding, or differencing.
- A VHD (Virtual Hard Disk) is a dynamically expanding disk on the Hyper-V server, which is initially at a few kilobytes and expands when the VMs need additional storage space.

41) Containers are an abstraction at the app layer that packages code and dependencies together.

42) Docker is an operating system for containers.

43) Unlike Windows Server Containers, which share the kernel, Hyper-V Containers do not share kernels and instead each container runs its own kernel, which makes them special VMs.

44) Hyper-V Live Migration works to a Hyper-V Server Standalone or a Hyper-V Cluster Node without any

downtime (only in some cases) over the network.

- 45) High availability means that an IT system, component, or application can operate at a high level, continuously, without intervention, for a given time period.
- 46) The cluster quorum is the majority of voting nodes in the active cluster membership.
- 47) Clustered storage consists of at least two storage servers. They let you increase your system's performance, node space input/output (I/O), and reliability.
- 48) Network load balancing (NLB) is a feature in multiple versions of the Microsoft Windows Server operating system.

- 49) NLB allows all of the computers in the cluster to be addressed by the same set of IP addresses, and it maintains a set of unique, dedicated IP addresses for each host.
- 50) Each node is managed by the control plane and contains the services necessary to run Pods.
- 51) Old and outdated software is vulnerable to hackers and cyber criminals as updates keep you safe from exploitable holes into your organization.
- 52) Windows Server Update Services (WSUS) enables information technology administrators to deploy the latest Microsoft product updates.
- 53) The update will automatically synchronize with WSUS if you have the Windows 10, version 1903 and later

product and Upgrades classification selected for synchronization.

54) By default, WSUS is configured to use HTTP (non-SSL) over port 8530, and HTTPS (SSL) over port 8531. If WSUS Service Port is left blank and Use SSL for WSUS Service Connection is not selected, port 8530 is used.

55) Full backup: The most basic and comprehensive backup method, where all data is sent to another location.

- Incremental backup: Backs up all files that have changed since the last backup occurred.
- Differential backup: Backs up only copies of all files that have changed since the last full backup.

56) A differential backup strategy only copies data changes since the last full backup. On the other hand, an

incremental data backup strategy copies data changes since the last backup.

- 57) A full backup is the process of creating one or more copies of all organizational data files in a single backup operation to protect them.
- 58) The Performance Monitor can be used to display real-time performance information as well as collect performance data using Data Collector Sets and by saving the information in log files.