Microsoft server Assignment

Module 12 Installation, Storage, and

Compute with Windows Server

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* Install Windows Servers 2016

1. Windows Server 2016 installation requirements

* 1.4 GHz 64-bit processor

512 MB of RAM

32 GB of disk space.

1. Describe Windows Server 2016 editions

* Windows Server 2016 Standard.

Windows Server 2016 Datacenter.

1. From which menu we can add and remove server roles?

* Server Manager.

1. What is workgroup?

* Workgroup is Microsoft's term for a peer-to-peer local area network. Computers running Microsoft operating systems in the same work group may share files, printers, or Internet connection.

1. What is domain?

* The Domain is used to manage access to a set of network resources for a group of users (applications, printers, etc.).

1. What is powershell ?

* PowerShell provides a command-line interface where users can interact with the system by typing commands.

1. Up gradation v/s migration

* Upgrading does not directly affect user data; no data is touched, changed, or moved during an upgrade. Migrating data refers to moving data from one Oracle Database into another database previously created for migrating or moving the data.

1. License and activation model

* The licensing and activation model for Windows Server typically involves purchasing a license for each physical server or virtual machine (VM) where the server software is running.

1. Precaution of upgradation

* Backup Critical Data, Check System Requirements, Schedule Downtime, Check for Updates and Patches.

10. Migration limitation

* Windows Server migration is the process of moving data, applications, and settings from old servers to new servers.

11. What is the advantages of server core

* Server Core consumes less disk space, memory, and CPU than Server with Desktop Experience, improving efficiency and scalability.

12. What is Nano server

* Nano Server is a remotely administered server operating system optimized for private clouds and datacenters.

13. Purpose of Nano server

* Nano Server is a specialized platform optimized for running modern applications and microservices in cloud and container environments.

14. Compare GUI v/s core v/s Nano server

* GUI Installation:

Administration can be performed locally or remotely using GUI-based tools such as Server Manager and Microsoft Management Console (MMC).

Server Core:

Managed primarily through command-line tools, PowerShell, and remote management tools. Can use the Windows Admin Center for remote GUI-based management.

Nano Server:

Managed remotely using PowerShell and other remote management tools. GUI-based management is not available directly on Nano Server.

* Practical

1. Install server 2016 GUI

* Done.

1. Install server 2016 server core

* Done.

1. Assign dual IP address on lan card

* Done.

1. Upgrade server 2012 to server 2016

* Done.

1. Change computer name

* Done.

1. install nano server

* Done.

1. manage and configure a nano server

* Done.

1. configure network in nano server

* Done.

1. join nano server in domain

* Done.
* Storage solution

1. Compare GPT and MBR

* MBR can only handle four primary partitions and 2 TB of drive space. GPT has no partition limit, so you can have up to 128 primary partitions and up to 18 exabytes in size.

1. Different between VHD and VHDX

* VHDX also provides file error protection in the event of a sudden power outage, which is not available in the VHD format. Providing larger file blocks for dynamic and differential disks and storing custom metadata features are the differences between VHD and VHDX.

1. what is SMB and NFS

* file access storage protocols or rules for efficient file sharing over a network.

1. what is sharing permission

* Share permissions allow users to control who can access folders over a network.

1. what is NTFS permission

* NTFS permissions are used to manage access to the files and folders that are stored in NTFS file systems.

1. what is resource ownership

* a resource owner is usually a user who plays a role in a business scenario.

1. what is storage pool

* A storage pool is capacity aggregated from disparate physical storage resources in a shared storage environment.

1. what is basic disk and dynamic disk

* 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.

1. what is simple volume , spanned volume

* When you extend a simple volume to a noncontiguous region within the same disk or onto additional disks, it becomes a spanned volume.

1. describe RAID 0 , RAID 1 , RAID 5, RAID 6 , RAID 10

* In a RAID 0 system, data are split up into blocks that get written across all the drives in the array.

RAID 1 is a setup of at least two drives that contain the exact same data.

RAID 5 requires the use of at least 3 drives, striping the data across multiple drives like RAID 0, but also has a “parity” distributed across the drives.

RAID 6 is like RAID 5, but the parity data are written to two drives.

RAID 10 consists of a minimum for four drives and combine the advantages of RAID 0 and RAID 1 in one single system.

1. describe DAS, NAS and SAN

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

1. what is iscsi initiator and target?

* initiator is a client machine that sends data to and from an iSCSI target, which is a server machine.

1. what is data duplication?

* when the same data is stored in multiple places.
* Practical

1. share “data” a folder and give read / write permission to first user

* Done.

1. share “data” folder and give read permission to another user

* Done.

1. share a “data” folder create a file in that folder and remove inheritance permission and give different ntfs permission to different user

* Done.

1. configure RAID 1 and check redundancy

* Done.

1. configure RAID 5 and check redundancy

* Done.

1. configure iscsi target and iscsi initiator and allocate remote storage

* Done.

1. configure data deduplication

* Done.
* Implement Hyper-V

1. what is virtualization

* Virtualization is a software technology that creates virtual representations of physical machines, such as servers, storage, and networks.

1. type of virtualization and compare it

* Virtualization is a technology that creates virtual versions of physical machines, such as servers, storage, and networks.

1. Describe hyper v

* Hyper-V is Microsoft's hardware virtualization product.

1. what is remote management of hyper v

* It allows connecting to local and remote Hyper-V hosts.

1. what is hyper v manager

* Hyper-V Manager is an administrative tool which allows you to manage Hyper-V hosts and virtual machines (VMs) both locally and remotely.

1. what is virtual machine and nested virtualization

* A virtual machine (VM) is a duplicate of a real computer machine that is isolated and efficient.

1. what is dynamic memory

* Dynamic memory allocation is the process of assigning the memory space during the execution time or the run time.

1. what is NUMA

* a computer system architecture that's used with multiprocessor designs.

1. describe Virtual Machine functions

* Virtual machine software can run programs and operating systems, store data, connect to networks, and do other computing functions

1. describe Hyper v functions

* A Hyper-V server can help individual VMs to connect to different networks.

1. what is check point

* A checkpoint is a place where people or vehicles are stopped for inspection or identification.

1. hyper v networking virtual nic , hyper v switch

* Hyper-V Virtual Switch is a software-based layer-2 Ethernet network switch that's available in Hyper-V Manager.

1. hyper v storage vhd ,vhdx , fixed size, dynamic expanding

* Fixed-size disks offer better performance and are recommended for production workloads, while dynamically expanding disks are more flexible and easier to manage.
* Practical

1. install hyper v and configure a virtual switch

* Done.

1. install virtual machine and install windows 10

* Done.

1. create a checkpoint

* Done.

1. P4 create a virtual hdd (vhd) and attach to virtual machine

* Done.
* Windows containers

1. describe containers

* Containers are packages of software that contain all of the necessary elements to run in any environment.

1. what is docker?

* A Docker container image is a lightweight, standalone, executable package of software that includes everything needed to run an application: code, runtime, system tools, system libraries and settings.

1. hyper v containers and windows containers

* 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.
* Practical

1. install windows container

* Done.

1. install container in core server

* Done.

1. install container in nano server

* Done.
* High availability

1. hyper v live migration

* Hyper-V Live Migration is the possibility to migrate any of your Virtual Machines between your physical Hyper-V Servers.

1. what is high availibilty?

* High availability (HA) is the ability of an IT system, component, or application to continue operating continuously, even when some of its components fail.

1. what is cluster, quorum and witness?

* The cluster quorum is the majority of voting nodes in the active cluster membership.

1. describe cluster storage

* Most of the data on a cluster is kept in separate storage units that have multiple hard drives.

1. what is NLB?

* Network Load Balancing (NLB) is a feature that distributes traffic across multiple servers.

1. importance of network in Failover and NLB

* These appliances are designed to improve application performance, reliability, availability, and scalability.

1. describe node in cluster and its operation

* A cluster node is a Microsoft Windows Server system that has a working installation of the Cluster service.
* Practical

1. Install and configure failover cluster for hyper v

* Done.

1. install and configure NLB for web server

* Done.
* Maintain and monitor server

1. need of updates

* Updates may be required to ensure compatibility with new hardware, software or operating systems.

1. what is WSUS and importance of WSUS 3 WSUS architecture

* Windows Server Update Services (WSUS) is a Windows server role that helps manage the distribution of updates, fixes, and other releases from Microsoft Update.

1. synchronization of update, product and classification wsus group

* Schedule regular synchronization tasks for your WSUS servers to ensure they always have the latest updates. Log in to SolarWinds Patch Manager as an administrator. In the Patch Manager menu, expand Enterprise > Update Services. Right-click the WSUS server and select Synchronize Server.

1. wsus port number and wsus policy

* By default, WSUS is configured to use HTTP (non-SSL) over port 8530, and HTTPS (SSL) over port 8531.

1. what is backup and restore 8 type of backup

* Backup and restore is a process that involves making copies of data and applications to a secondary device.

1. difference between incremental and differential backup

* 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.

1. what is full server backup

* 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.

1. what is use of performance monitor

* A performance monitor can be used to monitor a computer's activities, such as memory usage or CPU usage.
* Practical

1. install and configure wsus server

* Done.

1. apply update to particular client group through wsus

* Done.

1. Take customize backup of data

* Done.

1. restore backup original location and also another location

* Done.

1. backup schedule and check it.

* Done.

1. take full backup

* Done.

1. performance monitor of current process

* Done.

1. performance monitor of cpu, memory

* Done.