**Module 21**

**Linux server -deployment of network services**

**Assignment Level Basic to Adanvce**

1. **What is KVM?**

* To sum up, a KVM is a device that allows one to quickly and easily switch between multiple PCs or servers from a single console (keyboard, monitor, mouse setup) for greater efficiency, management, and both cost and space saving. Common scenarios in which a KVM switch is useful include: Home Office. Small businesses.

1. **What is Virtualization?**

* Virtualization is technology that you can use to create virtual representations of servers, storage, networks, and other physical machines. Virtual software mimics the functions of physical hardware to run multiple virtual machines simultaneously on a single physical machine.

1. **What are the key benefits of virtualization?**

* Reduced upfront hardware and continuing operating costs.
* Minimized or eliminated downtime.
* Increased IT productivity and responsiveness.
* Greater business continuity and disaster recovery response.
* Simplified data center management.
* Faster provisioning of applications and resources.

1. **For building RHEL virtualizations which two packages are required?**

* To build virtualizations in Red Hat Enterprise Linux (RHEL), you need to install the following two packages:
* **virt-install**: This package provides the command-line tool to create and configure virtual machines.
* **virt-viewer**: This package offers a graphical interface for viewing virtual machines.
* You can install these packages using the following commands:
* # Install the virtualization module
* yum module install virt
* # Install virt-install and virt-viewer packages
* yum install virt-install virt-viewer

1. **What is nested virtualization?**

* Nested virtualization lets you run virtual machine (VM) instances inside of other VMs so you can create your own virtualization environments. To support nested virtualization, Compute Engine adds Intel VT-x instructions to VMs, so when you create a VM, the hypervisor that is already on that VM can run additional VMs.

1. **Full form of LDAP is**

* LDAP (Lightweight Directory Access Protocol)

1. **What is LDAP?**

* Lightweight directory access protocol (LDAP) is a protocol that helps users find data about organizations, persons, and more. LDAP has two main goals: to store data in the LDAP directory and authenticate users to access the directory.

1. **Which package is used for graphically access ldap configuration**

* For graphical access to LDAP configuration, you can use **phpLDAPadmin**, which is a web-based LDAP client. It provides an easy and multi-language administration interface for your LDAP server. [With its hierarchical tree-viewer and advanced search functionality, phpLDAPadmin makes it intuitive to browse and administer your LDAP directory](https://askubuntu.com/questions/14847/gui-tool-to-configure-ldap-client)[1](https://askubuntu.com/questions/14847/gui-tool-to-configure-ldap-client).
* Here’s how you can install phpLDAPadmin on a RHEL system:
* # Install Apache
* yum install httpd
* # Install phpLDAPadmin
* yum install phpldapadmin
* # Start the Apache service
* systemctl start httpd

1. **Explain is NFS**

* The Network File System (NFS) is a mechanism for storing files on a network. It is a distributed file system that allows users to access files and directories located on remote computers and treat those files and directories as if they were local.

**10.Explain SMB**

* The Server Message Block protocol (SMB protocol) is a client-server communication protocol used for sharing access to files, printers, serial ports and other resources on a network. It can also carry transaction protocols for interprocess communication.

**11.What is the use of autofs?**

* Autofs is a kernel file system that supports automatic mounting and unmounting. When a request is made to access a file system at an autofs mount point, the following occurs: Autofs intercepts the request. Autofs sends a message to the automountd for the requested file system to be mounted.

**12.What is DNS?**

* The Domain Name System (DNS) turns domain names into IP addresses, which browsers use to load internet pages. Every device connected to the internet has its own IP address, which is used by other devices to locate the device.

**13.What is postfix mail server?**

* The Postfix mail server is a free and open-source mail transfer agent (MTA) that routes and delivers email messages. It was developed by Wietse Venema at the IBM T.J. Watson Research Center as an alternative to the widely-used Sendmail program. Postfix is known for its **efficiency**, **ease of administration**, and **strong security features**. [It’s designed to be fast and to have a Sendmail-compatible syntax, which makes it easier for users familiar with Sendmail to transition to Postfix](http://www.postfix.org/)

**14.What is iscsi storage**

* iSCSI, which stands for Internet Small Computer Systems Interface, is a protocol used in storage area networks (SANs) to allow client devices to access block-level storage over an Ethernet network. It carries SCSI commands over a TCP/IP network, facilitating data transfers over local area networks (LANs), wide area networks (WANs), or the internet. [This enables location-independent data storage and retrieval, providing clients with the illusion of locally attached SCSI disks](https://www.enterprisestorageforum.com/hardware/what-is-iscsi-and-how-does-it-work/)

**Task: 1**

* **Install qemu-kvm qemu-img**
* Step 1: Check Virtualization Enabled in Ubuntu. ...
* Step 2: Install QEMU/KVM on Ubuntu 20.04/22.04. ...
* Step 3: Launch Virtual Machine Manager in Ubuntu. ...
* Step 4: Create Virtual Machine with QEMU/KVM in Ubuntu.
* **install “virt-manager” , “ libvirt “ , “ libvirt-python “ , “ python-virtinst “ , “ linvirt-client”**
* don’t know ….

**3. Create new virtual machine**

* Introduction: How to Create a Virtual Machine. ...
* Step 1: Download and Install VirtualBox. ...
* Step 2: Create a Virtual Machine. ...
* Step 3: Allocate Memory. ...
* Step 4: Setup the Hard Drive. ...
* Step 5: Select Hard Drive File Type. ...
* Step 6: Select Storage on Physical Hard Drive.

**4. Create LDAP client**

* **Yes**

**5. Create NFS shared directory**

* Enter the following command to install NFS Client. root@ip-[your-ip-address]:/home/ubuntu# sudo apt-get install nfs-common rpcbind.
* Create a directory that will be used as qTest applications storage. root@ip-[your-ip-address]:/home/ubuntu# sudo mkdir /sessions-storage.

**6. Do Automounting NFS**

* A third option for mounting an NFS share is the use of the autofs service. Autofs uses the automount daemon to manage your mount points by only mounting them dynamically when they are accessed. Autofs consults the master map configuration file /etc/auto. master to determine which mount points are defined.

**7. Create SMB shared directory**

* Select and hold (or right-click) Start and select Computer Management.
* In the console tree, select System Tools > Shared Folders > Shares.
* Select and hold (or right-click) and select New > Share.
* In Create A Shared Folder Wizard, select Next.

**8. Mount and use SMB shared directory**

* Verify that the network/smb/client service is enabled. ...
* Find the share that you want to mount from a server. ...
* Create a mount point on which to mount the share. ...
* Perform the mount on your directory.

1. **Configuration of DNS Server**

* Open “Settings” and go to “Network & Internet.”
* Tap on “Wi-Fi”.
* Tap and hold your current Wi-Fi network.
* Select “Modify network”.
* Toggle on “Advanced options.”
* In the “DNS” field, enter the new DNS server IP addresses.
* Save your changes.

**10.Postfix configuration**

* Step 1: Install Postfix.
* Step 2: Configure Postfix. Enable Authentication. Edit the Configuration Files. Secure the Credentials. Restart Postfix.
* Step 3: Test SMTP Server.
* Step 4: Set up Email Forwarding.
* Step 5: Enable SMTP Encryption.

**11.MARIADB configuration**The MariaDB configuration file is located at /opt/bitnami/mariadb/conf/my. cnf, on the MariaDB database server host: The MariaDB official documentation has more details about how to configure the MariaDB database.