1. **Explain with examples cp, mv, rm commands for directories?**

mkdir directory name Creates a new directory in the present working directory or a at the specified path

rmdir Deletes a directory ----- $ rmdir directoryname

if there is a content rm -rf directoryname

mv Renames a directory --- $ mv current name changing name

cp -r dir1 dir2

cp file1 file2

**2)How to use vi editor in Linux to edit, create and update files?**

The default editor that comes with the UNIX operating system is called vi (visual editor). Using vi editor, we can **edit an existing file or create a new file from scratch**. we can also use this editor to just read a text file. Command Mode: When vi starts up, it is in Command Mode

**VI Editing Commands**

| **Command** | **Description** |
| --- | --- |
| i | Insert at cursor (goes into insert mode) |
| a | Write after cursor (goes into insert mode) |
| A | Write at the end of line (goes into insert mode) |
| ESC | Terminate insert mode |
| u | Undo last change |
| U | Undo all changes to the entire line |
| o | Open a new line (goes into insert mode) |
| dd | Delete line |
| 3dd | Delete 3 lines |
| D | Delete contents of line after the cursor |
| C | Delete contents of a line after the cursor and insert new text. Press ESC key to end insertion. |
| dw | Delete word |
| 4dw | Delete 4 words |
| cw | Change word |
| x | Delete character at the cursor |
| r | Replace character |
| R | Overwrite characters from cursor onward |
| s | Substitute one character under cursor continue to insert |
| S | Substitute entire line and begin to insert at the beginning of the line |
| ~ | Change case of individual character |

$ vi filename then it will be in vi editor

i --- to insert

ESC

:w -------- save and beginning of next word

:wq -------------- save & exit

:q----------- Exit

Shift ZZ--------- exit from vi to command

**3)How do we change permissions in Linux ?**

by using command chmod

$ chmod u+rwx(adding permission to USER to read write and execute/to remove permission need to change to -)

u: User, meaning the owner of the file.

g: Group, meaning members of the group the file belongs to.

o: Others, meaning people not governed by the u and g permissions.

a: All, meaning all the above.

**4)How is top command used in Linux?**

Display all running processes

* **PID:** Shows task’s unique process id.
* **PR:** Stands for priority of the task.
* **SHR:** Represents the amount of shared memory used by a task.
* **VIRT:** Total virtual memory used by the task.
* **USER:** User name of owner of task.
* **%CPU:** Represents the CPU usage.
* **TIME+:** CPU Time, the same as ‘TIME’, but reflecting more granularity through hundredths of a second.
* **SHR:** Represents the Shared Memory size (kb) used by a task.
* **NI:** Represents a Nice Value of task. A Negative nice value implies higher priority, and positive Nice value means lower priority.
* **%MEM:** Shows the Memory usage of task.
* **Exit Top Command After Specific repetition top -n 10 until you press q**
* **Display Specific User Process top -u username**
* **Highlight Running Process in Top:** Press ‘z‘
* **Shows Absolute Path of Processes:** Press ‘c‘
* **Kill running process k**
* **Sort by CPU Utilisation:**Press (Shift+P)
* **Shows top command syntax: top -h**
* **Batch Mode :**top -b Send output from top to file or any other programs.
* **How to exit from batch mode?**
* **Secure Mode :**top -sUse top in Secure mode.
* **Command Line :** Top -c  The below command starts top with last closed state.
  + **Delay time :** Top -d **It** tells delay time between screen updates.

**5)What is grep command in Linux, explain with examples?**

Grep: - Global regular expression print

Search Files and Directories for Patterns of Text

grep. grep searches file patterns

ctrl D to exit from text to cmd

he grep command is a very versatile and many new Linux or Unix users find it complicated. Hence, I suggest you read the grep [man page](https://www.gnu.org/software/grep/manual/grep.html) too. Let us summarize most import options:

| grep command in Unix/Linux | |
| --- | --- |
| **Options** | **Description** |
| -i | Ignore case distinctions on Linux and Unix |
| -w | Force PATTERN to match only whole words |
| -v | Select non-matching lines |
| -n | Print line number with output lines |
| -h | Suppress the Unix file name prefix on output |
| -r | Search directories recursivly on Linux |
| -R | Just like -r but follow all symlinks |
| -l | Print only names of FILEs with selected lines |
| -c | Print only a count of selected lines per FILE |
| --color | Display matched pattern in colors |

Using Vi editor how do we do the following

1. Create file with Name 123.txt

Vi 123.txt

1. Modify this file to include 3 rows of texts in this file and save your changes

Insert I and add 3 lines and the ESC and :wq

1. How do we go to a specific row in vi editor?

:line number

1. How to do a global replace of a text in vi editor

:%s/old name/new name/g (g for global)

What is grep command in Linux? Explain with examples

Grep for search a word or string in a file

grep -i word filename

Vi copy the line

Vi delete a row

Vi paste an entire row

Vi how do you check special word

Amazon account

All Services

All Definition like what you learn in 2to 3 linees

Compute,

Storage,

AWS Migration,

Database,

Networking & Content delivery,

Security, Identity, & Compliance only IAM

### AWS Compute Services

Here, are Cloud Compute Services offered by Amazon:

1. **EC2(Elastic Compute Cloud)-** An Elastic Compute Cloud (EC2) instance is a virtual server that you can use to run applications in Amazon Web Services (AWS). When setting up an EC2 instance, you can custom-configure CPU, storage, memory, and networking resources. // Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.
2. **LightSail-** This cloud computing tool automatically deploys and manages the computer, storage, and networking capabilities required to run your applications. simple private virtual server
3. **AWS Lambda-** ThisAWS service allows you to run functions in the cloud. Just write code and upload code into Lambda. No server required. only need working code. The tool is a big cost saver for you as you to pay only when your functions execute. Lambda is a compute service that lets you run code without provisioning or managing servers
4. **Elastic Beanstalk-** The tool offers automated deployment and provisioning of resources like a highly scalable production website.

Batch

Serverless application Reposit

AWS Outposts

EC2 Image Builder

AWS App Runner

### Storage

**Amazon S3**provides simple object storage, useful for hosting website images and videos, data analytics, and both mobile and web applications. Object storage manages data as objects, meaning all data types are stored in their native formats. There is no hierarchy of relations between files with object storage — data objects can be distributed across several machines. You can access the S3 service from anywhere on the internet

**AWS EFS**is a shared, elastic file storage system that grows and shrinks as you add and remove files. It offers a traditional file storage paradigm, with data organized into directories and subdirectories. EFS is useful for SaaS applications and content management systems. You can mount EFS onto several EC2 instances at the same time.

**Amazon FSx** is designed to deliver fast, predictable, scalable, and consistent performance. Amazon FSx file systems deliver sustained high read and write speeds and consistent low latency data access. You can choose the storage type and throughput level to best match your application's requirements

1. **Amazon Glacier-** It is an extremely low-cost storage service. It offers secure and fast storage for data archiving and backup.
2. **Amazon Elastic Block Store (EBS)-** It provides block-level storage to use with Amazon EC2 instances. Amazon Elastic Block Store volumes are network-attached and remain independent from the life of an instance.
3. **AWS Storage Gateway-** This AWS service is connecting on-premises software applications with cloud-based storage. It offers secure integration between the company's on-premises and AWS's storage infrastructure/.  
   **AWS Backup** :-Storage Gateway volume backups taken from AWS Backup are stored in Amazon S3 as Amazon EBS snapshots. You can see the Storage Gateway volume backups from the AWS Backup console or the Amazon EBS console.

### Migration

Migration services used to transfer data physically between your datacenter and AWS.

1. **DMS (Database Migration Service)**- DMS service can be used to migrate on-site databases to AWS. It helps you to migrate from one type of database to another — for example, Oracle to MySQL.
2. **SMS (Server Migration Service)**- SMS migration services allows you to migrate on-site servers to AWS easily and quickly.
3. [AWS Migration Hub](https://aws.amazon.com/migration-hub/) provides a single location to track the progress of application migrations across multiple AWS and partner solutions. Using Migration Hub allows you to choose the AWS and partner migration tools that best fit your needs, while providing visibility into the status of migrations across your portfolio of applications. Using Migration Hub, you can view the migration progress of all the resources in the application. This allows you to quickly get progress updates across all of your migrations, easily identify and troubleshoot any issues, and reduce the overall time and effort spent on your migration projects.

## AWS Application Migration Service

[AWS Application Migration Service (AWS MGN)](http://aws.amazon.com/application-migration-service)

With AWS MGN, you can migrate your applications from physical infrastructure, VMware vSphere, Microsoft Hyper-V, Amazon Elastic Compute Cloud (Amazon EC2), Amazon Virtual Private Cloud (Amazon VPC), and other clouds to AWS.

AWS MGN currently supports the following AWS Regions: US East (Ohio), US East (N. Virginia), US West (Northern California), US West (Oregon), Asia Pacific (Osaka), Asia Pacific (Singapore), Asia Pacific (Sydney), Asia Pacific (Tokyo), Canada (Central), Europe (Frankfurt), Europe (Ireland), Europe (Stockholm), and South America (São Paulo).

Please refer to the [AWS Regional Services List](https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/) for the most up-to-date information on Region support.

You can use AWS MGN to migrate all your applications and databases that run on supported versions of Windows and Linux [operating systems](https://docs.aws.amazon.com/mgn/latest/ug/Supported-Operating-Systems.html).

[Get started with AWS Application Migration Service »](https://console.aws.amazon.com/mgn/home)

#### **Which use cases may require a different migration service?**

If your preferred AWS Region is not currently supported by AWS MGN, consider using [CloudEndure Migration](https://console.cloudendure.com/" \l "/register/register).

If the [operating system](https://docs.aws.amazon.com/mgn/latest/ug/Supported-Operating-Systems.html) on which your applications run is not currently supported by AWS MGN, consider using [CloudEndure Migration](https://console.cloudendure.com/" \l "/register/register).

[AWS Application Discovery Service](https://aws.amazon.com/application-discovery) helps enterprise customers plan migration projects by gathering information about their on-premises data centers.

Planning data center migrations can involve thousands of workloads that are often deeply interdependent. Server utilization data and dependency mapping are important early first steps in the migration process. AWS Application Discovery Service collects and presents configuration, usage, and behavior data from your servers to help you better understand your workloads.

The collected data is retained in encrypted format in an AWS Application Discovery Service data store. You can export this data as a CSV file and use it to estimate the Total Cost of Ownership (TCO) of running on AWS and to plan your migration to AWS. In addition, this data is also available in AWS Migration Hub, where you can migrate the discovered servers and track their progress as they get migrated to AWS.

The [AWS Snow Family](http://aws.amazon.com/snow) helps customers that need to run operations in austere, non-data center environments, and in locations where there's lack of consistent network connectivity. The Snow Family comprises AWS Snowcone, AWS Snowball, and AWS Snowmobile and offers a number of physical devices and capacity points, most with built-in computing capabilities. These services help physically transport up to exabytes of data into and out of AWS. Snow Family devices are owned and managed by AWS and integrate with AWS security, monitoring, storage management, and computing capabilities.

[AWS DataSync](https://aws.amazon.com/datasync) is a data transfer service that makes it easy for you to automate moving data between on-premises storage and Amazon S3 or Amazon Elastic File System (Amazon EFS). DataSync automatically handles many of the tasks related to data transfers that can slow down migrations or burden your IT operations, including running your own instances, handling encryption, managing scripts, network optimization, and data integrity validation. You can use DataSync to transfer data at speeds up to 10 times faster than open-source tools. DataSync uses an on-premises software agent to connect to your existing storage or file systems using the Network File System (NFS) protocol, so you don’t have write scripts or modify your applications to work with AWS APIs. You can use DataSync to copy data over AWS Direct Connect or internet links to AWS. The service enables one-time data migrations, recurring data processing workflows, and automated replication for data protection and recovery. Getting started with DataSync is easy: Deploy the DataSync agent on premises, connect it to a file system or storage array, select Amazon EFS or S3 as your AWS storage, and start moving data. You pay only for the data you copy.

[AWS Transfer Family](http://aws.amazon.com/aws-transfer-family) provides fully managed support for file transfers directly into and out of Amazon S3 or Amazon EFS. With support for Secure File Transfer Protocol (SFTP), File Transfer Protocol over SSL (FTPS), and File Transfer Protocol (FTP), the AWS Transfer Family helps you seamlessly migrate your file transfer workflows to AWS by integrating with existing authentication systems, and providing DNS routing with Amazon Route 53 so nothing changes for your customers and partners, or their applications. With your data in Amazon S3 or Amazon EFS, you can use it with AWS services for processing, analytics, machine learning, archiving, as well as home directories and developer tools. Getting started with the AWS Transfer Family is easy; there is no infrastructure to buy and set up

### Security Services

1. **IAM (Identity and Access Management)**— IAM is a secure cloud security service which helps you to manage users, assign policies, form groups to manage multiple users.
2. AWS Identity and Access Management (IAM) enables you to manage access to AWS services and resources securely. Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.
3. IAM is a feature of your AWS account offered at no additional charge. You will be charged only for use of other AWS services by your users

### Database Services

1. **Amazon RDS-**ThisDatabase AWS service is easy to set up, operate, and scale a relational database in the cloud.
2. **Amazon DynamoDB-** It is a fast, fully managed NoSQL database service. It is a simple service which allow cost-effective storage and retrieval of data. It also allows you to serve any level of request traffic.
3. **Amazon ElastiCache-** It is a web service which makes it easy to deploy, operate, and scale an in-memory cache in the cloud.
4. **Neptune-**It is a fast, reliable and scalable **graph database** service.