🗄Linux Commands for LVM, Swap, Disk, and User Management🗄

Follow – Krishan Bhatt💾

In this article, we'll explore 50 essential Linux commands for **LVM (Logical Volume Management)**, **Swap**, **Disk Management**, and **User Management**. Each topic includes the command followed by a short explanation to help you understand its purpose.

1. LVM Commands 🖥

LVM (Logical Volume Management) provides an efficient way to manage disk storage, creating logical volumes (LV) that can span across multiple physical volumes (PV). Below are essential LVM commands:

1.1 pvcreate

What is it? 🖊
Initializes a physical volume for LVM usage.
Usage:

```
pvcreate /dev/sdb
```

This command sets up the /dev/sdb disk as a physical volume that can be used by LVM.

1.2 vgcreate

What is it? 🗂
Creates a volume group (VG) from one or more physical volumes.
Usage:

```
vgcreate vg_data /dev/sdb
```

This creates a volume group vg_data using the physical volume /dev/sdb.

1.3 lvcreate

What is it? 🗒
Creates a logical volume (LV) inside a volume group.
Usage:

```
lvcreate -n lv_data -L 10G vg_data
```

This creates a logical volume lv_data of size 10GB in the vg_data volume group.

1.4 lvextend

What is it? ＋
Increases the size of an existing logical volume.
Usage:

```
lvextend -L +5G /dev/vg_data/lv_data
```

This command extends the logical volume lv_data by an additional 5GB.

1.5 lvreduce

What is it? ━
Decreases the size of an existing logical volume.
Usage:

```
lvreduce -L -5G /dev/vg_data/lv_data
```

This shrinks the logical volume lv_data by 5GB.

1.6 vgreduce

What is it? 🗑
Removes a physical volume from a volume group.
Usage:

```
vgreduce vg_data /dev/sdb
```

This removes the physical volume /dev/sdb from the vg_data volume group.

1.7 lvremove

What is it? ✕
Removes a logical volume.
Usage:

```
lvremove /dev/vg_data/lv_data
```

This command deletes the logical volume lv_data from the vg_data volume group.

1.8 vgextend

What is it? ✛
Adds a physical volume to an existing volume group.
Usage:

```
vgextend vg_data /dev/sdb
```

This command adds the physical volume /dev/sdb to the volume group vg_data.

1.9 vgremove

What is it? 🗑
Removes a volume group.
Usage:

```
vgremove vg_data
```

This deletes the volume group vg_data.

1.10 lvscan

What is it? 🔍
Scans for all logical volumes.
Usage:

```
lvscan
```

This lists all logical volumes on the system.

2. Swap Management Commands 🔄

Swap space is used by Linux when the physical RAM is full. It allows the system to swap data between RAM and the hard disk.

2.1 swapon

What is it? ⇄
Activates swap space.
Usage:

```
swapon /dev/sdb1
```

This enables swap on the partition /dev/sdb1.

2.2 swapoff

What is it? ⬤
Deactivates swap space.
Usage:

```
swapoff /dev/sdb1
```

This disables swap on the partition /dev/sdb1.

2.3 free

What is it? 📊
Shows memory usage including swap.
Usage:

```
free -h
```

Displays a summary of memory, swap, and buffers in human-readable format.

2.4 mkswap

What is it? 🛠
Creates a swap space on a device.
Usage:

```
mkswap /dev/sdb1
```

This initializes /dev/sdb1 as swap space.

2.5 swapon -s

What is it? 📑
Lists all active swap spaces.
Usage:

```
swapon -s
```

This shows all the swap devices currently in use.

3. Disk Management Commands 💾

Disk management in Linux involves creating, listing, and maintaining disk partitions.

3.1 fdisk

What is it? 💻
Disk partitioning tool for managing MBR (Master Boot Record) partitions.
Usage:

```
fdisk /dev/sdb
```

This launches the fdisk utility to manage partitions on /dev/sdb.

3.2 lsblk

What is it? 🗂
Lists all block devices.
Usage:

```
lsblk
```

Displays information about all available storage devices, including partitions and mount points.

3.3 parted

What is it? 🛠
A tool for managing disk partitions, supporting both MBR and GPT.
Usage:

```
parted /dev/sdb
```

This opens the parted utility to manage partitions on /dev/sdb.

3.4 mkfs

What is it? 🏦
Creates a filesystem on a partition.

Usage:

```
mkfs.ext4 /dev/sdb1
```

This creates an EXT4 filesystem on the /dev/sdb1 partition.

3.5 mount

What is it? 🖋
Mounts a device or partition to a directory.
Usage:

```
mount /dev/sdb1 /mnt
```

This mounts the /dev/sdb1 partition to the /mnt directory.

3.6 umount

What is it? 🔒
Unmounts a mounted device or partition.
Usage:

```
umount /mnt
```

This unmounts the partition from /mnt.

3.7 resize2fs

What is it? 🔧
Resizes an ext2/ext3/ext4 filesystem.
Usage:

```
resize2fs /dev/sdb1
```

This resizes the filesystem on /dev/sdb1 to fit the partition size.

4. User Management Commands 👥

User management in Linux allows administrators to add, modify, and remove users and manage permissions.

4.1 useradd

What is it? ✚
Adds a new user to the system.
Usage:

```
useradd john
```

This adds a user named john.

4.2 usermod

What is it? 🖉
Modifies an existing user's account.
Usage:

```
usermod -aG sudo john
```

This adds the user john to the sudo group, giving him administrative privileges.

4.3 userdel

What is it? 🗑
Deletes a user account.
Usage:

```
userdel john
```

This removes the user john from the system.

4.4 passwd

What is it? 🔑
Changes a user's password.
Usage:

```
passwd john
```

This prompts to set or change the password for user john.

4.5 groupadd

What is it? 🏷
Creates a new group.
Usage:

```
groupadd admin
```

This creates a new group named admin.

4.6 gpasswd

What is it? 🔑
Sets or modifies a group password.
Usage:

```
gpasswd admin
```

This command allows you to set or modify the password for the admin group.

4.7 groups

What is it? 📋
Lists the groups a user belongs to.
Usage:

```
groups john
```

This shows the groups that the user john is a member of.

These 50 essential commands cover the basic tasks involved in **LVM**, **Swap**, **Disk**, and **User** management on Linux systems. By mastering these commands, you can efficiently administer your Linux environment.