How to create swap space in Linux operating system

Swap Space in Linux: What It Is and How to Create It on CentOS

Swap space in Linux functions similarly to virtual memory in Windows, acting as an extension of physical RAM when the system runs low on memory. Instead of allowing the operating system to crash or hang when RAM is fully utilized, swap space temporarily holds inactive data by using part of the hard drive. While swap is much slower than RAM (even on SSDs or NVMe drives), it plays a crucial role in maintaining system stability under high memory pressure.

How Much Swap Space Should You Allocate?

There's no strict rule, but here are some common recommendations:

- If your system has 16 GB RAM, and you're not limited by disk space, allocate 8–16 GB of swap.
- SSDs or NVMe drives offer better performance, but are still slower than RAM, so don't expect RAM-level performance from swap.

Preliminary Steps Before Proceeding

- Backup your data before making any system-level changes.
- Ensure you have root access to the system.
- If you're using a server, connect via SSH (see "How to Connect via SSH").

Creating Swap Space on CentOS

1. Log in as Root Access your CentOS system as the root

user or with sudo privileges.

2. Create Swap File Use the following command to allocate 8GB of disk space to swap:

```
dd if=/dev/zero of=/swapspace bs=1024 count=8388608
```

Explanation:

- 8 GB = 8192 MB
- 8192 × 1024 = 8,388,608 KB
- bs=1024: sets the block size
- count=8388608: number of blocks to write

3. Set Ownership to Root

```
chown root:root /swapspace
```

4. Set Permissions

```
chmod 0600 /swapspace
```

5. Format as Swap

```
mkswap /swapspace
```

6. Activate Swap

```
swapon /swapspace
```

7. Make Swap Persistent Open the /etc/fstab file:

```
nano /etc/fstab
```

If nano is not installed, run: yum install nano

Add the following line at the end of the file:

```
/swapspace none swap sw 0 0
```

Reboot the System

Now reboot to ensure changes are applied:

```
reboot
```

Verify Swap Activation

After reboot, use the following command to check swap:

```
free -m
```

You will see the RAM and swap usage stats.

Need Expert Help?

If you'd prefer to leave server management to the pros, purchase a managed VPS. Hosting providers like Mizbanfa offer full server support including swap configuration, monitoring, and optimization.