



Memory Management Commands

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Linux - Memory Management



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Memory Management in Linux

- Linux employs a memory management scheme involving concepts like **virtual memory, paging, swapping, caching, and buffer management**.
- Key Concepts
 - **Physical Memory (RAM)**: Actual hardware memory
 - **Virtual Memory**: A n abstraction that allows processes to use more memory than the physically available RAM.
 - **Swap Space**: Disk space reserved for swapping pages when physical memory runs out. Swap is slower than RAM.
 - **Paging**: Memory is divided into fixed-size chunks called pages.

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Memory Management in Linux



\$ free

Display memory usage (RAM and swap).

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\$ free

Display memory usage (RAM and swap).



\$ vmstat

Report virtual memory statistics.

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\$ df

Information about disk space usage on the system

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Information about disk space usage on the system



\$ swapon

Show or enable/disable swap space.

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Memory Management in Linux



\$ free

Display memory usage (RAM and swap).



\$ vmstat

Report virtual memory statistics.



\$ df

Information about disk space usage on the system



\$ swapon

Show or enable/disable swap space.



\$ meminfo

Show detailed memory information.



Linux Networking Commands

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Networking in Linux

- Networking in Linux involves configuring, monitoring, and managing network connections, protocols, and services.
- Linux is widely used in networking because of its powerful built-in tools for managing networks, from basic connectivity to complex network setups.
- **Network Interface**
 - Loopback Interface: A virtual interface used for local communication within the system. (Default IP: 127.0.0.1)
 - Physical Interfaces: These include Ethernet (eth0, eth1) and Wi-Fi (wlan0) interfaces.

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Networking Commands

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Networking Commands



\$ ping

Test network connectivity to a host.

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Linux - Networking



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Networking Commands



\$ ping

Test network connectivity to a host.



\$ ip

Show/manipulate routing, devices, policy routing.

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\$ ssh

Secure Shell for remote login and command execution.

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Networking Commands

```
[root@localhost ~]# ls  
anaconda-ks.cfg  original-ks.cfg  
[root@localhost ~]# ssh om@10.200.22.200 <IP Address>  
om@10.200.22.200's password:  
Activate the web console with: systemctl enable --now cockpit.socket
```

```
Last login: Mon Oct  7 23:04:08 2024 from 10.200.0.229
```

```
[om@rudra0 ~]$ ls  
400x400          inputs          om          swapnil2      wrf_data.tar.gz  
apps            Job_Monitoring_Portal  readme.txt  Trinetra      wrfDeps.tar.gz  
cuda             lammps.def        run         tutorials  
Documents        lammps_run_maheshc  Sanket      WPS-4.4  
env.sh           Madhuri          Swapnil     WPS-4.4_copy  
hpcapps_on_tri  nohup.out        swapnil1    wrf  
[om@rudra0 ~]$
```

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Networking Commands



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\$ ip

Show/manipulate routing, devices, policy routing.



\$ ssh

Secure Shell for remote login and command execution.

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Show/manipulate routing, devices, policy routing.



\$ ssh

Secure Shell for remote login and command execution.



\$ wget

Retrieve/Download files from the web.

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Networking Commands



\$ ping

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Show/manipulate routing, devices, policy routing.



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Secure Shell for remote login and command execution.



\$ wget

Retrieve/Download files from the web.



\$ scp

Secure copy files between hosts.

Recap

- Linux System & Commands
- Linux Files & Directories
- File Permissions and Ownerships
- Process Management in Linux
- Text Processing in Linux
- Memory Management
- Networking in Linux

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ਪੰਨਵਾਦ ਸ਼ੁਕਧਿ ਪ੍ਰਸ਼ਾਸਨ
ਤਹਿਤ ਕਾਰੋਬਾਰ ਧਨ੍ਯਵਾਦ
ਆਮਾਰ ਧਨ੍ਯਵਾਦ ਲਈ ਧਨ੍ਯਵਾਦ
Thank You
ਧਨ੍ਯਵਾਦ ਧਨ੍ਯਵਾਦ ਧਨ੍ਯਵਾਦ ਮੌਜੂਦੀ

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