

# Day 14: Linux - Permissions, Processes & Services

DevOps 90 Days Challenge

# Viewing File Permissions

Command: `ls -l`

Displays file permissions in long listing format.

# Numeric Format (Octal) Permissions

Read (r) = 4, Write (w) = 2, Execute (x) = 1

Octal: 7 = rwx, 6 = rw-, 5 = r-x, etc.

Examples:

```
chmod 755 file.txt
```

```
chmod 644 file.txt
```

```
chmod 777 script.sh (not recommended for sensitive files)
```

# Symbolic Format Permissions

u (user), g (group), o (others), a (all)

+ (add), - (remove), = (set)

Examples:

```
chmod u+x file.sh
```

```
chmod g-w file.txt
```

```
chmod o+r file.txt
```

# Changing File Ownership (chown)

Command: `chown user:group file.txt`

Examples:

`sudo chown john file.txt`

`sudo chown john:developers file.txt`

`sudo chown -R user:group /path (recursive)`

# Recursive & Special Permissions

`chmod -R 755 /dir (recursive)`

`chown -R user:group /dir`

SetUID (4xxx), SetGID (2xxx), Sticky Bit (1xxx)

Examples:

`chmod 4755 script.sh (SetUID)`

`chmod 2755 dir/ (SetGID)`

`chmod 1755 /tmp (Sticky Bit)`

# Disk and Storage Management

`df -h`: Disk space (human-readable)

`du -sh /dir`: Size of directory

`find / -name file.txt`: Search file

`find /var -size +100M`: Files > 100MB

# Process and System Monitoring

- `ps aux`: View running processes
- `top`: Real-time monitoring
- `htop`: Interactive view (install needed)
- `kill PID`: Terminate process
- `kill -9 PID`: Force kill



# Networking and Connectivity

`ifconfig` or `ip addr`: Network configuration

`ping google.com`: Test network

`netstat -tuln`: View open network ports