**Process Management & System Monitoring**

1. ps Command:

- The `ps` command stands for "process status" and is used to display information about currently running processes.

- Basic usage: `ps [options]`

- Common options:

- `-e`: Display information about all processes.

- `-f`: Display a full listing.

- `-u user`: Display processes for a specific user.

- `-aux`: Display detailed information about all processes.

Example:

```bash

ps aux

```

2. bg Command:

- The `bg` command is used to run a stopped background process.

- When a process is stopped (e.g., by pressing `Ctrl + Z`), you can use `bg` to resume it in the background.

- Basic usage: `bg [job\_spec]`

- `job\_spec` can be the job number (as shown by `jobs` command) or `%` followed by the command name.

Example:

```bash

bg %1 # Resume the first stopped job in the background

```

3. fg Command:

- The `fg` command is used to bring a background process to the foreground.

- When a process is running in the background, you can use `fg` to bring it to the foreground and make it the active process.

- Basic usage: `fg [job\_spec]`

- `job\_spec` can be the job number (as shown by `jobs` command) or `%` followed by the command name.

Example:

```bash

fg %1 # Bring the first background job to the foreground

```

4. nice Command:

- The `nice` command is used to set the priority of a command or a process.

- It influences the scheduling priority of a process, with lower values indicating higher priority.

- Basic usage: `nice [options] command`

- Common options:

- `n`: Specifies the adjustment value for the priority (default is 10).

Example:

```bash

nice -n 5 command # Run 'command' with an increased priority (lower nice value)

```

Note: The `nice` command is often used in conjunction with other commands to adjust their priority in the system.

These commands are powerful tools for managing and monitoring processes in a Linux environment. Remember to refer to the respective manual pages (`man ps`, `man bg`, `man fg`, `man nice`) for more detailed information and additional options.

**Troubleshooting**

Troubleshooting network-related issues on Linux often involves using various commands to gather information about network interfaces, connectivity, and DNS resolution. Here are some common Linux commands for network troubleshooting:

1. ifconfig Command:

- The `ifconfig` command displays information about network interfaces.

- Basic usage: `ifconfig [interface]`

- Common options:

- `-a`: Display information for all interfaces, including inactive ones.

Example:

```bash

ifconfig

```

2. ping Command:

- The `ping` command is used to test the reachability of a host on an Internet Protocol (IP) network.

- Basic usage: `ping [hostname or IP address]`

- Common options:

- `-c count`: Specify the number of packets to send.

Example:

```bash

ping www.example.com

```

3. traceroute Command:

- The `traceroute` command traces the route that packets take to reach a destination.

- Basic usage: `traceroute [hostname or IP address]`

- Common options:

- `-n`: Do not resolve hostnames.

Example:

```bash

traceroute www.example.com

```

4. nslookup Command:

- The `nslookup` command is used to query DNS servers and obtain detailed information about domain names and IP addresses.

- Basic usage: `nslookup [hostname]`

- Enter interactive mode: `nslookup`

- Inside interactive mode, you can set the DNS server, query for specific types of records, etc.

Example:

```bash

nslookup www.example.com

```

5. dig Command:

- The `dig` command is another powerful tool for querying DNS servers and obtaining detailed DNS information.

- Basic usage: `dig [hostname]`

- Common options:

- `+short`: Display only essential information.

Example:

```bash

dig www.example.com

```

6. host Command:

- The `host` command is used for DNS lookups.

- Basic usage: `host [hostname]`

- Common options:

- `-t type`: Specify the query type (e.g., A, MX, PTR).

Example:

```bash

host www.example.com

```

These commands can help diagnose and troubleshoot various network issues, from interface configuration problems to connectivity and DNS resolution. Depending on the specific issue, one or more of these commands may be used in combination to gather relevant information.