Systemd

Here are some basic exercises focused on using systemd, specifically covering systemctl for managing services and journalctl for viewing logs.

Part 1: Understanding systemd and systemctl

Exercise 1: Checking systemd Version
Objective: Verify the version of systemd installed on your system.

1. Open your terminal.
2. Check the systemd version:
```
systemctl --version
```

Exercise 2: Managing Services with systemctl
Objective: Learn how to manage system services using systemctl.

1. List all available services:
```
systemctl list-unit-files --type=service
```

2. Check the status of a specific service (e.g., sshd):
```
systemctl status sshd
```

3. Start a service (e.g., start the SSH service):
```
sudo systemctl start sshd
```

4. Enable a service to start on boot:
```
sudo systemctl enable sshd
```

5. Stop a service:
```
sudo systemctl stop sshd
```

6. Restart a service:
```
sudo systemctl restart sshd
```

Exercise 3: Checking System State
Objective: Check the overall system state with systemctl.

1. Check the current state of the system (running, maintenance, etc.):
```
systemctl get-default
```

2. Change the default target to multi-user (non-graphical mode):
```
sudo systemctl set-default multi-user.target
```

3. Reboot the system to apply the changes (optional):
```
sudo reboot
```

Part 2: Viewing Logs with journalctl

Exercise 4: Basic Usage of journalctl
Objective: Learn how to view logs using journalctl.

1. View the entire system log:
```
journalctl
```

2. View logs for the current boot:
```
journalctl -b
```

3. View logs for a specific service (e.g., sshd):
```
journalctl -u sshd
```

4. View the most recent logs:
```
journalctl -n 50
```

5. Follow logs in real time (similar to tail -f):
```
journalctl -f
```

Part 3: Create a service

1. In **`/usr/lib/systemd/system/`** create a unitfile with the following content.
   The name of the unit file should be **`date.service`**.

   ```
   [Unit]
   Description=date service
   [Service]
   ExecStart=/usr/local/bin/date.sh
   KillMode=process
   [Install]
   WantedBy=multi-user.target
   ```

2. In **`/usr/local/bin/`** create a script with the following content.
   (the name of the script should be **`date.sh`**)

   ```
   #!/usr/bin/bash
   while true
   do
      /usr/bin/date > /tmp/date.out
      sleep 5
   done
   ```

   Make sure the **date.sh** script is executable.

3. Enable the service and start the service.
   Check whether the service is running.
   Check the content of the **`/tmp/date.out`** file.

4. Stop and disable the service.