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WORKING WITH SYSTEMD SERVICES

SYSTEMD

- System and service manager for Linux OS from boot to shutdown.
- Handle **services, processes, network, authentication, logging** etc...
- Support backward compatibility for **SystemV** and **LSB** start scripts

SYSTEMD UNITS

- Entities or objects managed by **systemd**.
- Unit types that **systemd** can manage :
 - service
 - socket
 - device
 - mount or automount point
 - swap file
 - timer
 - startup target (runlevel)
 - path etc...

UNIT FILE LOCATIONS

/lib/systemd/system	standard systemd unit files
/usr/lib/systemd/system	from locally installed package
/etc/systemd/system	custom unit files

SYSTEMCTL

- To manage services on a **systemd** enabled server.

To list all units listed as "**active**"

\$ systemctl list-units

To list all unit installed in **BEAUTIFUL** way

\$ systemctl list-unit-files

To make systemd re-read all unit files

\$ systemctl daemon-reload

SYSTEMCTL STATUS COMMAND

To check if a service is running

\$ sudo systemctl status <service_name>

Output:

```
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Sat 2023-07-15 12:10:48 +04; 13s ago
     Docs: https://httpd.apache.org/docs/2.4/
  Main PID: 13601 (apache2)
    Tasks: 55 (limit: 9059)
   Memory: 5.4M
      CPU: 20ms
   CGroup: /system.slice/apache2.service
           └─13601 /usr/sbin/apache2 -k start
             └─13602 /usr/sbin/apache2 -k start
               └─13603 /usr/sbin/apache2 -k start

zil 15 12:10:48 dodoadmin-Inspiron-15-3511 systemd[1]: Starting The Apache HTTP Server...
zil 15 12:10:48 dodoadmin-Inspiron-15-3511 apachectl[13600]: AH00558: apache2: Could not reli
zil 15 12:10:48 dodoadmin-Inspiron-15-3511 systemd[1]: Started The Apache HTTP Server.
```

SYSTEMCTL COMMANDS

To start a service

\$ systemctl status <service_name>

To stop a service

\$ systemctl stop <service_name>

To restart a service

\$ systemctl restart <service_name>

To reload a service

\$ systemctl reload <service_name>

SYSTEMCTL ENABLE/DISABLE COMMAND

To enable the service to start at boot

\$ systemctl enable <service_name>

To disable the service to start at boot

\$ systemctl disable <service_name>

MINIMAL SERVICE UNIT FILE EXAMPLE

[Unit]

Description=A very simple service

After=network.target

[Service]

Type=simple

ExecStart=/usr/local/bin/exampleProgram

[Install]

WantedBy=mult-user.target

DEMO

CREATING A CUSTOM UNIT FILE

JOURNALCTL

- Log information from applications and the kernel

To see all log entries from the general system state

\$ journalctl

Flags:

- -b (current boot)
- -k (only kernel message)
- -k (only kernel message of current boot)

JOURNALCTL

QUERYING UNIT STATES AND LOGS

To see log entries for a specific unit

\$journalctl -u <service_name>

To see log entries for a specific unit of the current boot

\$journalctl -b -u <service_name>

To see updated log entries for a specific unit as they are generated

\$journalctl -u <service_name> -f