

# DERECK LAM HON WAH

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# **WORKING WITH SYSTEMD SERVICES**

# SYSTEMD

- System and service manager for Linux OS from system 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

<b>/lib/systemd/system</b>	standard systemd unit files
<b>/usr/lib/systemd/system</b>	from locally installed package
<b>/etc/systemd/system</b>	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 make sure a service is running

**\$ 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>**

**DEMO**

CREATING A CUSTOM UNIT FILE

# 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

# 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**

# **MANAGING SYSTEM PROCESSES**