

Introduction to systemd

System startup and server processes are managed by the systemd System and Service Manager. This program provides a method for activating system resources, server daemons, and other processes, both at boot time and on a running system.

Summary of systemctl commands

View detailed information about a unit state.	<code>systemctl status UNIT</code>
Stop a service on a running system.	<code>systemctl stop UNIT</code>
Start a service on a running system.	<code>systemctl start UNIT</code>
Restart a service on a running system.	<code>systemctl restart UNIT</code>
Reload configuration file of a running service.	<code>systemctl reload UNIT</code>
Completely disable a service from being started, both manually and at boot.	<code>systemctl mask UNIT</code>
Make a masked service available.	<code>systemctl unmask UNIT</code>
Configure a service to start at boot time.	<code>systemctl enable UNIT</code>

Summary of systemctl commands (cont)

Disable a service from starting at boot time.	<code>systemctl disable UNIT</code>
List units which are required and wanted by the specified unit.	<code>systemctl list-dependencies UNIT</code>

Keywords indicating the state of the service

loaded	Unit configuration file has been processed.
active(running)	Running with one or more continuing processes.
active(exited)	Successfully completed a one-time configuration.
active(waiting)	Running but waiting for an event.
inactive	Not running.
enabled	Will be started at boot time.
disabled	Will not be started at boot time.
static	Can not be enabled, but may be started by an enabled unit automatically

Listing unit files with systemctl

- Query the state of all units to verify a system startup.


```
[root@serverX ~]# systemctl
```

Listing unit files with systemctl (cont)

- Query the state of only the service units.


```
[root@serverX ~]# systemctl --type=service
```
- Investigate any units which are in a failed or maintenance state. `-l` option to full output.


```
[root@serverX ~]# systemctl status rngd.service -l
```
- Alternate commands can also easily show the active and enabled states:


```
[root@serverX ~]# systemctl is-active/enable sshd
```
- List the active state of all loaded units.


```
[root@serverX ~]# systemctl list-units --type=service --all
```
- View the enabled and disabled settings for all units.


```
[root@serverX ~]# systemctl list-unit-files --type=service
```
- View only failed services.


```
[root@serverX ~]# systemctl --failed --type=service
```

Enabling system daemons to start or stop at boot

- View the status of a service.


```
[root@serverX ~]# systemctl status sshd.service
```
- Disable the service and verify the status. Note that disabling a service does not stop the service.


```
[root@serverX ~]# systemctl disable sshd.service
```
- Enable the service and verify the status.


```
[root@serverX ~]# systemctl enable sshd.service
```
- Verify the status.


```
[root@serverX ~]# systemctl is-enabled sshd.service
```

Starting and stopping system daemons

- View the status of a service.


```
[root@serverX ~]# systemctl status sshd.service
```
- Verify that the process is running.


```
[root@serverX ~]# ps -up PID
```
- Stop the service and verify the status.


```
[root@serverX ~]# systemctl stop/status sshd.service
```
- Start the service and view the status. The process ID has changed.



Starting and stopping system daemons (cont)

```
[root@serverX ~]#
systemctl start/status
sshd.service

5. Stop, then start, the
service in a single
command.

[root@serverX ~]#
systemctl restart/status
sshd.service

6. Issue instructions for
a service to read and
reload. The process ID
will not change.

[root@serverX ~]#
systemctl reload/status
sshd.service
```

Identify the Status of systemd Units

1. List all service units on the system.

```
[student@serverX ~]$ sudo
systemctl list-units --
type=service
```

2. List all socket units, active and inactive, on the system.

```
[student@serverX ~]$ sudo
systemctl list-units --
type=socket --all
```

3. Explore the status of the chronyd service. This service is used for network time synchronization (NTP).

a. Display the status of the chronyd service. Note the process ID of any active daemons.

Identify the Status of system Units (cont)

```
[student@serverX ~]$ sudo
systemctl status chronyd

b. Confirm that the listed
daemons are running.

[student@serverX ~]$ ps -p
PID

4. Explore the status of
the sshd service. This
service is used for secure
encrypted communication

a. Determine if the sshd
service is enabled to
start at system boot.

[student@serverX ~]$ sudo
systemctl is-enabled sshd

b. Determine if the sshd
service is active without
displaying all of the
status information.

[student@serverX ~]$ sudo
systemctl is-active sshd

c. Display the status of
the sshd service.

[student@serverX ~]$ sudo
systemctl status sshd

5. List the enabled or
disabled states of all
service units.

[student@serverX ~]$ sudo
systemctl list-unit-files
--type=service
```

