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Tips & Tricks

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Listing running services

```
$ systemctl
UNIT                                LOAD    ACTIVE SUB    JOB DESCRIPTION
accounts-daemon.service            loaded active running Accounts Service
atd.service                         loaded active running Job spooling tools
avahi-daemon.service               loaded active running Avahi mDNS/DNS-SD Stack
bluetooth.service                  loaded active running Bluetooth Manager
colord-sane.service                 loaded active running Daemon for monitoring attached scanners and registering them with col
colord.service                      loaded active running Manage, Install and Generate Color Profiles
cron.service                        loaded active running Command Scheduler
cups.service                        loaded active running CUPS Printing Service
dbus.service                        loaded active running D-Bus System Message Bus
...
```

Showing runtime status

```
$ systemctl status udisks2.service
udisks2.service - Storage Daemon
```

```

Loaded: loaded (/usr/lib/systemd/system/udisks2.service; static)
Active: active (running) since Wed, 27 Jun 2012 20:49:25 +0200; 1 day and 1h ago
Main PID: 615 (udisksd)
CGroup: name=systemd:/system/udisks2.service
        └─ 615 /usr/lib/udisks2/udisksd --no-debug

```

```

Jun 27 20:49:25 epsilon udisksd[615]: udisks daemon version 1.94.0 starting
Jun 27 20:49:25 epsilon udisksd[615]: Acquired the name org.freedesktop.UDisks2 on the system message bus

```

cgroup tree

```

$ systemd-cgls
└─ system
   └─ 1 /usr/lib/systemd/systemd --system --deserialize 18
      └─ ntpd.service
         └─ 8471 /usr/sbin/ntpd -u ntp:ntp -g
            └─ upower.service
               └─ 798 /usr/libexec/upowerd
                  └─ wpa_supplicant.service
                     └─ 751 /usr/sbin/wpa_supplicant -u -f /var/log/wpa_supplicant.log -c /etc/wpa_supplicant/wpa_supplicant.conf -u -f /var
                        └─ nfs-idmap.service
                           └─ 731 /usr/sbin/rpc.idmapd
                              └─ nfs-rquotad.service
                                 └─ 753 /usr/sbin/rpc.rquotad
                                    └─ nfs-mountd.service
                                       └─ 732 /usr/sbin/rpc.mountd
                                          └─ nfs-lock.service
                                             └─ 704 /sbin/rpc.statd
                                                └─ rpcbind.service
                                                   └─ 680 /sbin/rpcbind -w
                                                      └─ postfix.service
                                                         └─ 859 /usr/libexec/postfix/master
                                                            └─ 877 qmgr -l -t fifo -u
                                                               └─ 32271 pickup -l -t fifo -u
                                                                  └─ colord-sane.service
                                                                     └─ 647 /usr/libexec/colord-sane
                                                                        └─ udisks2.service
                                                                           └─ 615 /usr/lib/udisks2/udisksd --no-debug
                                                                              └─ colord.service
                                                                                 └─ 607 /usr/libexec/colord
                                                                                     └─ prefdm.service
                                                                                        └─ 567 /usr/sbin/gdm-binary -nodaemon

```

```
| 602 /usr/libexec/gdm-simple-slave --display-id /org/gnome/DisplayManager/Display1
| 612 /usr/bin/Xorg :0 -br -verbose -auth /var/run/gdm/auth-for-gdm-000GPA/database -seat seat0 -nolisten tcp
| 905 gdm-session-worker [pam/gdm-password]
- systemd-ask-password-wall.service
  | 645 /usr/bin/systemd-tty-ask-password-agent --wall
- atd.service
  | 544 /usr/sbin/atd -f
- ksmtuned.service
  | 548 /bin/bash /usr/sbin/ksmtuned
  | 1092 sleep 60
- dbus.service
  | 586 /bin/dbus-daemon --system --address=systemd: --nofork --systemd-activation
  | 601 /usr/libexec/polkit-1/polkitd --no-debug
  | 657 /usr/sbin/modem-manager
- cups.service
  | 508 /usr/sbin/cupsd -f
- avahi-daemon.service
  | 506 avahi-daemon: running [epsilon.local]
  | 516 avahi-daemon: chroot helper
- system-setup-keyboard.service
  | 504 /usr/bin/system-setup-keyboard
- accounts-daemon.service
  | 502 /usr/libexec/accounts-daemon
- systemd-logind.service
  | 498 /usr/lib/systemd/systemd-logind
- crond.service
  | 486 /usr/sbin/crond -n
- NetworkManager.service
  | 484 /usr/sbin/NetworkManager --no-daemon
  | 8437 /sbin/dhclient -d -4 -sf /usr/libexec/nm-dhcp-client.action -pf /var/run/dhclient-wlan0.pid -lf /var/lib/dhclient
- libvirtd.service
  | 480 /usr/sbin/libvirtd
  | 571 /sbin/dnsmasq --strict-order --bind-interfaces --pid-file=/var/run/libvirt/network/default.pid --conf-file= --ex
- bluetooth.service
  | 479 /usr/sbin/bluetoothd -n
- systemd-udev.service
  | 287 /usr/lib/systemd/systemd-udev
- systemd-journald.service
  | 280 /usr/lib/systemd/systemd-journald
```

ps with cgroups

```

$ alias psc='ps xawf -eo pid,user,cgroup,args'
$ psc
  PID USER      CGROUP          COMMAND
...
    1 root      name=systemd:/systemd-1          /bin/systemd systemd.log_target=kmsg systemd.log_level=debug selinux=0
  415 root      name=systemd:/systemd-1/sysinit.service /sbin/udev -d
  928 root      name=systemd:/systemd-1/atd.service /usr/sbin/atd -f
  930 root      name=systemd:/systemd-1/ntpd.service /usr/sbin/ntpd -n
  932 root      name=systemd:/systemd-1/crond.service /usr/sbin/crond -n
  935 root      name=systemd:/systemd-1/auditd.service /sbin/auditd -n
  943 root      name=systemd:/systemd-1/auditd.service \_ /sbin/auditd
  964 root      name=systemd:/systemd-1/auditd.service \_ /usr/sbin/sedispach
  937 root      name=systemd:/systemd-1/acpid.service /usr/sbin/acpid -f
  941 rpc      name=systemd:/systemd-1/rpcbind.service /sbin/rpcbind -f
  944 root      name=systemd:/systemd-1/rsyslog.service /sbin/rsyslogd -n -c 4
  947 root      name=systemd:/systemd-1/systemd-logger.service /lib/systemd/systemd-logger
  950 root      name=systemd:/systemd-1/cups.service /usr/sbin/cupsd -f
  955 dbus     name=systemd:/systemd-1/messagebus.service /bin/dbus-daemon --system --address=systemd: --nofork --systemd-
  969 root      name=systemd:/systemd-1/getty@.service/tty6 /sbin/mingetty tty6
  970 root      name=systemd:/systemd-1/getty@.service/tty5 /sbin/mingetty tty5
  971 root      name=systemd:/systemd-1/getty@.service/tty1 /sbin/mingetty tty1
  973 root      name=systemd:/systemd-1/getty@.service/tty4 /sbin/mingetty tty4
  974 root      name=systemd:/user/lennart/2      login -- lennart
 1824 lennart  name=systemd:/user/lennart/2      \_ -bash
  975 root      name=systemd:/systemd-1/getty@.service/tty3 /sbin/mingetty tty3
  988 root      name=systemd:/systemd-1/polkitd.service /usr/libexec/polkit-1/polkitd
  994 rtkit     name=systemd:/systemd-1/rtkit-daemon.service /usr/libexec/rtkit-daemon
...

```

Changing the Default Boot Target

```
$ ln -sf /usr/lib/systemd/system/multi-user.target /etc/systemd/system/default.target
```

This line makes the multi user target (i.e. full system, but no graphical UI) the default target to boot into. This is kinda equivalent to setting runlevel 3 as the default runlevel on Fedora/sysvinit systems.

```
$ ln -sf /usr/lib/systemd/system/graphical.target /etc/systemd/system/default.target
```

This line makes the graphical target (i.e. full system, including graphical UI) the default target to boot into. Kinda equivalent to runlevel 5 on fedora/sysvinit systems. This is how things are shipped by default.

What other units does a unit depend on?

For example, if you want to figure out which services a target like multi-user.target pulls in, use something like this:

```
$ systemctl show -p "Wants" multi-user.target  
Wants=rc-local.service avahi-daemon.service rpcbind.service NetworkManager.service acpid.service dbus.service atd.service
```

Instead of "Wants" you might also try "WantedBy", "Requires", "RequiredBy", "Conflicts", "ConflictedBy", "Before", "After" for the respective types of dependencies and their inverse.

What would get started if I booted into a specific target?

If you want systemd to calculate the "initial" transaction it would execute on boot, try something like this:

```
$ systemd --test --system --unit=foobar.target
```

for a boot target foobar.target. Note that this is mostly a debugging tool that actually does a lot more than just calculate the initial transaction, so don't build scripts based on this.

Last edited Sun 26 May 2013 01:11:34 AM PDT