Systemd Cheat Sheet

by misterrabinhalder via cheatography.com/35799/cs/18773/

Features

Socket-based activation

Bus-based activation

Device-based activation

Path-based activation

Mount and automount point management

Aggressive parallelization

Transactional unit activation logic

Backwards compatibility with SysV init

Configuration

/etc/systemd/system.conf override default configuration

Unit Types

.service A system service

.target A group of systemd units

.automount A file system automount point

.device A device file recognized by the kernel

.mount A file system mount point

.path A file or directory in a file system

.scope An externally created process

.slice A group of hierarchically organized units that manage system processes

.snapshot A saved state of the systemd manager

.socket An inter-process communication socket

.swap A swap device or a swap file

.timer A systemd timer

Unit File Locations

/usr/lib/systemd/system/ Systemd unit files distributed with installed packages

/run/systemd/system/ Systemd unit files created at run time

/etc/systemd/system/ Systemd unit files for extending a service

Logs

journalctl -b show all messages from this boot

journalctl -b -1 show all messages from previous boot

journalctl --since="2012-10-30 18:17:16" show all messages from date and optional time

journalctl --since "20 min ago" show all messages since 20 minutes ago

journalctl -f show new messages

journalctl /usr/lib/systemd/systemd show all messages by a specific executable

journalctl _PID=1 show all messages by a specific process

journalctl -u man-db.service show all messages by a specific unit

journalctl -k show kernel ring buffer:

journalctl -p err..alert Show only error, critical, and alert priority messages

journalctl SYSLOG_FACILITY=10 show auth.log equivalent by filtering on syslog facility

journalctl --file /var/log/journal/*/system.journal -f force journalctl to look only into most recent journal

journalctl --vacuum-size=100M remove archived journal files until the disk space they use falls below 100M

journalctl --vacuum-time=2weeks make all journal files contain no data older than 2 weeks

Boot Management

bootctl --path=*esp* status shows brief information about the system firmware

bootctl --path=*esp* install installs systemd-boot into the EFI system partition

Boot Management (cont)

bootctl --path=*esp* update updates all installed versions of systemd-boot

bootctl --path=*esp* remove removes all installed versions of systemd-boot

bootctl --path=*esp* list shows all available boot loader entries

bootctl --path=*esp* set-default ID sets the default boot loader entry

Control Group Management

systemd-cgls shows the cgroup hierarchy in a pretty tree

Device Management

udevadm info *options devpath* query the udev database for device information

udevadm trigger *options devpath* request device events from the kernel

udevadm settle *options* watches the udev event queue

udevadm control *option* modify the internal state of the running udev daemon

udevadm monitor *options* listens to the kernel uevents

udevadm test *options devpath* simulate a udev event run for the given device and print debug output

Coredump Management

coredumpctl list list core dumps

coredumpctl info show information about core dump

coredumpctl dump extract the core dump

coredumpctl debug invoke debugger on a core dump

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Hostname Management

hostnamectl status show current system hostname and related information

hostnamectl set-hostname *name* set the system hostname to *name*

Services

systemctl list-units --type service list all currently loaded service units

systemctl list-units --type service --all list all loaded service units regardless of their state

systemctl list-unit-files --type service list all available service units to see if they are enabled

systemctl status *name.service* show detailed information about a service unit

systemctl is-active *name.service* verify a particular service unit is running

systemctl is-enabled *name.service* verify a particular service unit is enabled

systemctl list-dependencies --after *name.service* show units ordered to start before a service unit

systemctl list-dependencies --before *name.service* show units ordered to start after a service unit

systemctl start *name.service* start a service unit

systemctl stop *name.service* stop a service unit

systemctl restart *name.service* restart a service unit

systemctl try-restart *name.service* restart a service unit if corresponding service running

systemctl reload *name.service* reload service unit configuration file

systemctl enable *name.service* enable service unit

systemctl reenable *name.service* reenable service unit

Services (cont)

systemctl disable *name.service* disable service unit

systemctl mask *name.service* mask service unit to prevent from being started

systemctl unmask *name.service* unmask a service unit

systemctl daemon-reload notify new service file exists

systemd-delta show overridden units

Locale

localectl status show current status

localectl list-locales list available locales

localectl set-locale LANG=*locale* set new locale

localectl list-keymaps list available keymaps

localectl set-keymap *map* set new keymap

localectl set-x11-keymap *map* set console and x11 keymap

localectl --no-convert set-x11-keymap *map* set x11 keymap

Date and Time

timedatectl show current date and time

timedatectl set-time *HH:MM:SS* change current time

timedatectl set-local-rtc *boolean* set clock in local time

timedatectl set-time *YYYY-MM-DD* change current date

timedatectl list-timezones list all available time zones

timedatectl set-timezone *time_zone* set new timezone

timedatectl set-ntp *boolean* set or unset NTP service

Container Management

systemd-nspawn -b -D */path/to/os/tree* run OS in a namespace container

systemd-nspawn -b -D */path/to/os/tree* -M *machine_name* --network-bridge=*bridge-_name* run OS in a namespace container

Ctril+]]] kill the container from inside

machinectl list list currently running containers

machinectl status *machine_name* show runtime status information about the container

machinectl show *machine_name* show properties about the container

machinectl start *machine_name* start container as a system service by the name in /var/lib/machines/

machinectl login *machine_name* open an interactive terminal login session in container

machinectl shell opean an interactive shell session in a container

machinectl enable *machine_name* enable a container as a system service

machinectl disable *machine_name* disable a container as a system service

machinectl reboot *machine_name* reboot a container

machinectl terminate *machine_name* terminates a container

machinectl kill *machine_name* send a signal to processes of the container

machinectl bind *machine_name host_path container_path* bind mounts from the host into the container

machinectl copy-to *machine_name host_path container_path* copies from the host into a running container

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Container Management (cont)

machinectl copy-from *machine_name container_path host_path* copies from container into the host system

Network Management

networkctl list show list of links

networkctl status *link* show information about specified link

networkctl lldp *link* show LLDP neighbors

networkctl label show numerical address labels

systemctl start systemd-networkd.service start systemd-networkd daemon

systemctl enable systemd-networkd.service start systemd-networkd daemon at boot

Domain Name Management

systemctl start systemd-resolvd.service start systemd-resolved daemon

systemctl enable systemd-resolved.service start systemd-resolved daemon at boot

resolvectl query *www.example.com* show the address of the *www.example.com* domain

resolvectl query *8.8.8.8* show the domain of the *8.8.8.8* IP address

resolvectl status *link* show global and per-link DNS

resolvect statistics show resolver statistics

resolvectl reset-statistics reset the statistics

resolvectl flush-caches flushes all DNS resource record cache

resolvectl reset-server-features flushes all feature resolver learnt

resolvectl dns ... get/set per-interface DNS

resolvectl revert *link* revert per-interface DNS

Domain Name Management (cont)

ln -sf /run/systemd/resolve/stub-resolv.conf /etc/resolv.conf provide NSS service

Targets

poweroff.target shut down and power off the system

rescue.target set up rescue shell

multi-user.target set up non graphical multi user system

graphical.target set up graphical multi user system

reboot.target shutdown and reboot the system

systemctl list-units --type target lists currently loaded target units

systemctl list-units --type target --all lists all loaded target units

systemctl isolate *name.target* changes the current target

systemctl get-default view default target

systemctl set-default *name.target* set desired target

systemctl isolate *name.target* change current to desired target

systemctl rescue change current target and enter rescue mode

systemctl --no-wall rescue change current target and enter rescue mode

systemctl emergency change the current target and enter emergency mode

systemctl --no-wall emergency change the current target and enter emergency mode

Power Management

systemctl halt halts the system

systemctl poweroff powers off the system

systemctl reboot restarts the system

systemctl suspend suspends the system

systemctl hibernate hibernates the system

systemctl hybrid-sleep hibernates and suspends the system

Login Management

loginctl list-sessions list current sessions

loginctl session-status *id* show runtime status information

loginctl show-session *id* show properties of one or more sessions

loginctl activate *id* activate a session

loginctl lock-session *id* activates the screen lock

loginctl unlock-session *id* deactivates the screen lock

loginctl terminate-session *id* terminates a session

loginctl kill-session *id* send a signal to one or more processes of the session

loginctl list-users list currently logged in users

loginctl terminate-user *user* terminates all sessions of a user

loginctl kill-user *user* send a signal to all processes of a user

loginctl list-seats list currently available seats on the local system

D-Bus Management

busctl list show all peers on the bus, by their service names

busctl status *service* show process information and credentials of a bus service

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D-Bus Management (cont)

busctl monitor ***service*** dump messages being exchanged

busctl capture ***service*** writes the output in pcap format

busctl tree ***service*** shows an object tree of one or more services

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