Managing Linux Services

Andrew Mallett
LINUX AUTHOR AND TRAINER

@theurbanpenguin www.theurbanpenguin.com

Overview

Linux services and process management

systemd

- systemctl
- timedatectl
- localectl
- hostnamectl

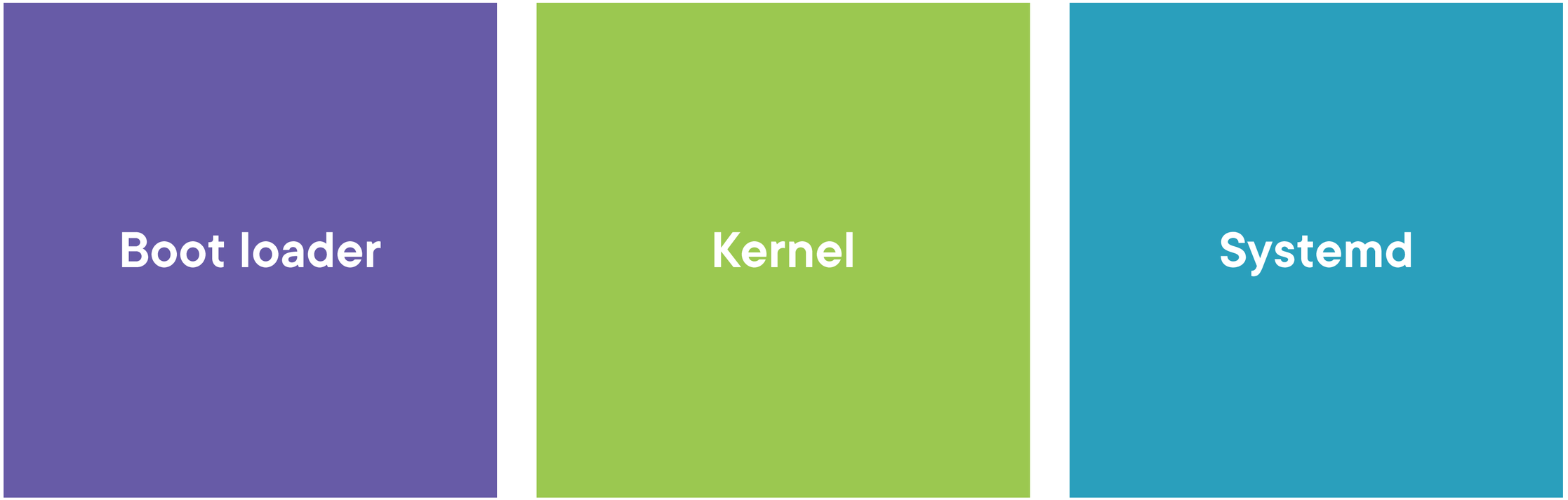
Services

- chrony - systemd-timesync
- cron - timer units

Process Management

- ps, pgrep, pkill
- nice, renice
- top

PID 1 = Systemd



Using Systemctl to Manage Services

```
# systemctl status chronyd
# systemctl enable --now chronyd
# systemctl disable --now chronyd
# systemctl cat chronyd
# systemctl edit chronyd --full
```

Analyze Boot Time

```
# systemd-analyze

# systemd-analyzed blame
```

System Uniformity

Systemd Eco-system

```
# hostnamectl set-hostname

# timedatectl set-timezone 'Europe/London'

# localectl set-locale LANG=en_GB.utf8
```

Demo

Working on the Alma Linux 8.5

- We discover the systemd-ecosystem

The Problem with.....

The loop devices we have used do not persist

Creating a service unit we can script the device creation system start-up

Running both losetup and partprobe

losetup.service

```
[Unit]
Description=Setup Loop Device
DefaultDependencies=no
Before=local-fs.target
After=systemd-udevd.service

[Service]
Type=oneshot
ExecStart=/sbin/losetup /dev/loop1 /root/disk1
ExecStart=/sbin/partprobe /dev/loop1
RemainAfterExit=no

[Install]
WantedBy=local-fs.target
```

Demo

Working on the Alma Linux 8.5

Creating Systemd Service Units

- Block device files
- Partitioning
- Service unit

Time Services

Keeping the servers time accurate is maintained by the NTP protocol and a time client. This maybe the **chronyd** service or **systemd-timesyncd**

Chronyd / Systemd-timesyncd

Chronyd

Server and Client

More complex

Systemd-timesyncd

Client only

Simple configuration

Demo

Working with Alma Linux 8

- Configure time synchronization
- Timedatectl
- Chronyd
- Systemd-timesyncd

Task Scheduling

Traditionally Unix and Linux has used **crond** as the task scheduler. We also have the **atd** and **systemd** timer units

Task Scheduling

crond

Jobs at regular intervals

atd

Once off, or irregular tasks

timer units

No need to additional service

Demo

Working on Alma Linux

- We start by looking at managing **cron** jobs

Demo

Working on Alma Linux

- We now look at the **atd**

Demo

Working on Alma Linux

- New and with more reporting, **systemd timer units** can replace many cron job

Process Management

- ps
- pgrep
- pkill
- top
- nice
- renice

Demo

Working on Linux Processes

- /proc
- ps, pgrep, pkill

Demo

Working with top:

- consolidates output
- ps
- uptime
- free

Demo

Process Priority:

- adjusting the allocated CPU time
- nice value -20 to +19
- nice
- renice

Summary

Managing Linux Services

- systemctl, timedatectl, localectl
- Creating service units
- Timer units

Common Services

- cron, at
- chrony

Process Management

- top
- ps, pstree, pgrep and pkill
- nice and renice

Managing the Linux Boot Process