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Intro to systemd

Patrick A. TenHoopen

systemd

- What is it?
 - A system and service manager
- When did it come out?
 - Announced on 4/30/10
- Home page:
 - <http://www.freedesktop.org/wiki/Software/systemd>

systemd

- Developed by Lennart Poettering (PulseAudio author) and Kay Sievers
- systemd is a replacement for the Linux init daemon System V
- The name comes from the Unix convention of suffixing the names of system daemons with the letter "d"
- It's not Systemd, or SystemD, just systemd

systemd

- Compatible with SysV and LSB init scripts
- Provides aggressive parallelization capabilities
- Uses socket and D-Bus activation for starting services
- Offers on-demand starting of daemons
- Keeps track of processes using Linux control groups
- Supports snapshotting and restoring of the system state
- Maintains mount and automount points
- Implements an elaborate transactional dependency-based service control logic

What problems is it addressing?

- Slow system startup
- Serial starting of processes
- Unnecessary waiting of processes during startup
- Unnecessary process startup

Advantages

- Faster boot/startup speed
- Processes can start in parallel
- Shell scripts vs compiled startup commands
- On-demand starting of processes when they are needed, not necessarily during startup

Disadvantages

- Some system daemons will need to be rewritten to take advantage of the features of systemd
- Less flexible in ordering the start up of services since it determines the order

What distros are using it?

- Fedora
- Mandriva
- openSUSE
- Arch Linux
- Other lesser known distros

Service Management

- `systemctl start <service>`
- `systemctl stop <service>`
- `systemctl status <service>`
- `systemctl disable <service>`
- `systemctl enable <service>`

Boot Profiling

- Install systemd-analyze
- Check total boot time
 - `systemd-analyze time | tee total-boot-time.log`
- Check detailed boot time
 - `systemd-analyze blame | tee detailed-boot-time.log`
- Graph the boot process
 - `systemd-analyze plot > boot-graph.png`

Fixing Issues/Speeding Up Boot

- Check for any failures during boot
 - `systemctl --failed`
- Check status of failed services for more info
 - `systemctl status service`
- Disable unneeded services
 - `systemctl disable service1 service2`

journal Replaces Syslog

- journal is the new logging system provided by systemd
- View system messages/query system journal
 - journalctl
- Tail system messages/journal
 - journalctl -f
- Stream all journalctl output
 - journalctl --no-pager

More Info

- Rethinking PID 1
 - <http://0pointer.de/blog/projects/systemd.html>
- Why systemd?
 - <http://0pointer.de/blog/projects/why.html>