



# Speeding Up Debian

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# Rationale

- Your time is important
- Machines are here to save us time, not get in the way
- Faster is nearly always better





# Step 1: Backup Your System

- You are going to be editing several critical areas of your system
- Any mistakes can yield a non-booting or unrecoverable system
- Seriously, just back it up.

## Step 2: Update

- Updating your system ensures you are working on a sane system
- It also lets software know what packages are important, useful later on
- Use the following to update fully:
  - `apt-get update`
  - `apt-get upgrade`
  - `apt-get dist-upgrade`



## Step 3: noatime

- By default, access times are written to disk every time a file is accessed.
- Even the kernel devs say this is probably needless.
- Add the noatime option into your fstab for all non-swap partitions.



## Step 4: Use dash

- Dash is a replacement for bash for /bin/sh
- Way faster, so system scripts run faster
  - apt-get install dash
  - dpkg-reconfigure dash



# Step 5: readahead

- Your mileage may vary, but readahead can make boots much faster
- Profiles which files are used in boot, begins loading them as soon as kernel is in RAM
  - apt-get install readahead
- CAVEAT: On many systems, this slows the boot process, so watch it a few times.



## Step 6: localepurge

- Localepurge removes unneeded manpages and other documentation from new packages, saving disk space and making look-ups faster.
  - `apt-get install localepurge`
  - Configure it to use `en`, `en.US`, and `en.us-UTF8`
- **NOTE:** Slows installations a little, but makes a difference in disk usage and look-up speed



# Step 7: Remove old kernels

- `apt-get remove linux-image-<TAB>`
- The `<TAB>` lists what kernels you have installed, remove any not matching `uname -a`
- APT will refuse to remove the currently-running kernel, so `linux-image-*` is probably safe.



# Step 8: Package cleanup

- apt-get autoremove removes unneeded packages
- apt-get clean purges the \*.deb cache



## Step 9: sysvconf

- apt-get install sysv-rc-conf
- sysv-rc-conf as root, uncheck any unnecessary services
- **CAVEAT: Use CAUTION and COMMON SENSE**

# Step 10: bootchart

- apt-get install bootchart bootchart-view
- Boot with init=/sbin/bootchartd
- Once booted, run bootchart in a terminal, and view the resulting SVG.
- See if there are services running that you do not need, and uninstall them (NFS, CUPS, avahi, rpcbind)
- Also used for Step 11 analysis
- Reboot after every change, to see effects



# Step 11: Rearrange rcS

- Ensure CONCURRENTY=shell in /etc/default/rcS, then go to /etc/rcS.d and begin renaming symlinks to rearrange priorities
- X can be started (if needed at all!) much earlier in the process, S04 or so
- Networking can be started later, S09 or so
- Services that do not depend on each other can be at the same priority—ifupdown-clean,module-init-tools, mtab, and udev-mtab, for instance
- Other examples can be found at:  
<http://www.debian-administration.org/articles/629>
- Reboot between each change, reprofiling with bootchart, to be sure you are **improving** the system, not **degrading** it.

# Step 12: Rearrange rc2.d

- Goal is to get login screen up as fast as possible.
- An example:
  - S10sysklogd
  - S11klogd
  - S12dbus
  - S24hal
  - S30gdm
  - S31system-tools-backend
  - S40acct S40avahi-daemon S40openbsd-inetd S40ssh
  - S45cups S45saned
  - S89anacron S89cron
  - S98rc.local S98rmnologin
  - S99bootchart S99stop-bootlogd S99stop-readahead





# Step 13: Custom kernel

- Compile your own kernel with only the modules for expected hardware

# Step 14: Replace gdm

- If you do not need a login manager, nodm for nearly-instant automatic login
- If you do need a login manager, slim





## Step 15: Faster DE/WM

- Instead of GNOME, KDE, or XFCE, think about using LXDE, Fluxbox, or E17
- They run faster, and take up fewer resources



# Step 16: preload

- apt-get install preload
- Profiles frequently-used applications to move them to faster parts of the filesystem
- NOTE: May impact boot time slightly, but frequently-used applications will start noticeably faster.



# Summary

- Test system:
  - 1GHz VIA C3
  - 512MB DDR
  - 32GB 133x CF disk
  - 3.0.0-1-486 (no PAE on this system :-())
  - debian sid
- Before: 2m14s to desktop
- After: 21s to desktop

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