Gentoo Linux

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http://bit.ly/9xyWlx

Source Based Distro?

- Gentoo is prepared from source, <u>by the user</u>

- Portage, the name of the package repository and manager, makes this **surprisingly easy**

- Portage wraps the various build systems, handles dependencies, and exposes configuration options in a uniform way

- End result is tuned to your requirements and hardware

- Most distros have similar framework behind the scenes. Gentoo exposes it to the end user

Rolling Release

- Gentoo doesn't really have "versions"
  - LiveCDs and critical system files updated ~yearly
- My last desktop install lasted 5 years, until a hardware failure
- Avoids "Big Bang" upgrades
  - Businesses often use ancient software because upgrades require tons of planning and headaches
  - Rolling release spreads this over time
- Sync every day, once a month, every few months
  - Constantly updated, choose interval according to your needs

Who should use it

- System Admins
  - Build once, create a binpkg, deploy to staging, push to production
  - Finely tuned compilation options and config file management
  - Gentoo Hardened supports grsecurity, RSBAC, SELinux
- Developers, Developers, Developers
  - No -devel packages, everything has libraries and headers
  - Quick to adopt new toolchain components (gcc, glibc, LLVM, interpreters, etc.)
- "Beta" enthusiasts
  - Get new stuff every day
  - Learn a lot about Linux internals and plumbing

Who shouldn't use it

- Casual users
  - Start off with a friendly binary distro like Ubuntu
  - This will acclimate them to common Linux apps so they know what to install
  - Arch Linux offers many of the benefits (rolling release) w/o as much intricacy (binary by default)
- Some enterprises?
  - Proper care and feeding must be done regularly. If you provision servers and leave them untended, Gentoo might not be appropriate
  - RHEL/CentOS or Debian/derivatives better understood by most admins
- Bottom line
  - Using Gentoo requires learning a lot about underlying components
  - Requires up front investment in time
  - IMO, the investment is worth it and pays off the more advanced your usage gets

Gentoo is not about speed

- Modern 64-bit distros have paired much of the legacy x86 baggage
  - Use SSE, SSE2, etc.
- Compiling for speed requires tons of metrics and expertise. Must be done per package
- Set your CFLAGS to -O2, -march=native and go
- Caveat: CFLAGS tuned for Atom devices may run noticeably faster with bleeding edge compiler than generic distros

- http://funroll-loops.info/

WHAT R UR CFLAGS??!? ZOMG SO FAST

Community

- In my unscientific analysis, Gentoo has the *best* community
  - Deep technical knowledge
    - You are likely to get an answer to hard questions rather than "why would you want to do that?" or "just do this that you don't want instead"
  - Active, large, but not too large
- IRC channel
  - #gentoo on irc.freenode.net
- Forums
  - http://forums.gentoo.org
- Bugzilla
  - Good stuff happens here – one of the best managed bug trackers
  - End users can track annoying bugs, request a new package. Good dev interaction
- Lists – primarily developer-oriented
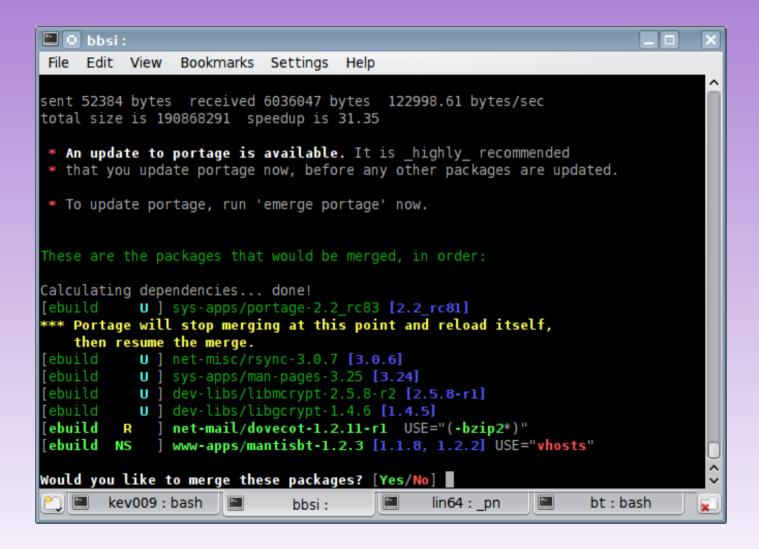 - http://www.gentoo.org/main/en/lists.xml

Documentation

- Gentoo handbook is awesome

  - Step by step tutorial to get your system up and running

- Gentoo Wiki

  - http://en.gentoo-wiki.com/

  - Not currently managed by Gentoo Foundation, but very good tutorials covering desktop, server, media station usage and more

Portage/emerge on console

Every Day Commands

- emerge –sync
- emerge -a firefox
- emerge -uDNa
- etc-update

- Update local repo
- Build/install firefox
- Update all packages
- Update config files

Installing Gentoo

- Follow the handbook!

- Let the @world build run overnight

- First install will take several hours of interaction, but much of the process is batch

- Feel free to email me questions, or try IRC for fast help

Niche Stuff

- Gentoo is incredibly flexible.
- Crossdev for building a distro for other architectures
  - i.e. embedded systems.
  - Prepare and package your own distro on a fast workstation, write it to Compact Flash and deploy
- Variety of platforms – SPARC, PowerPC, Alpha, s390, PA-RISC, MIPS
- Gentoo Alt
  - Use portage on other Linux systems or even Mac OS X, AIX, Solaris, and more.
  - Get a comfortable GNUserland on other operating systems

Q&A

- Ask Me Anything
  - Pros and cons to your current distro
  - Sys admin perspective
  - Developer perspective
  - End user perspective

Acknowledgments

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