Hosting Open Source Projects at the OSUOSL

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Systems Administrator / Architect

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About me

- OSU Open Source Lab
- Server hosting for Open Source projects
- Open Source development projects
- Lead Systems Administrator
- Gentoo Developer
- Trumpet Jazz performer

In the Beginning...

Picture flickr user 'tappnel'

- University President sees "www.orst.edu" on a sign
- Maintain - DNS/DHCP management
- Seed money from OSU Network Services
- First clients are some of the most well known Open Source projects

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Why do hosting at OSU?

"Our commitment to the development and application of Open Source is consistent with our drive to be the land grant university of the 21st century. Through open source activities we are helping under-served populations around the world and creating new industries and new products at home."

OSU president, Ed Ray

Timing is everything

- Post dot-com bust = lots of dark fiber
- Invested $250K into laying 11mi of fiber to I-5
- "Cheap" bandwidth
- Internet2 connectivity
- Newly renovated data center

Staff

- 8 full-time employees / ~8 undergrad students
  - Hosting
  - Development
  - Government Outreach
  - ORVSD
  - Outreach Manager
  - MeeGo/Intel Dev
  - Operations Manager
  - Director

Students

- Undergraduate students
- Full root access
- Hired at Freshmen or Sophomore year
- Constant turnover (2-3yrs/student)

Data Center Specs

One of two primary UPS's

- 2770 sqft, 76 Colo racks, 11 IDF racks
- Dual independent power feeds
  - ea 400A / 480V
  - 3-phase
  - Dual UPS
  - Single generator
- 55 ton cooling capacity via 3 Lieberts

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Networking

- NERO
  - Network for Education & Research in Oregon
- 10 Gbps to NERO
- Cisco 6509 Core
- 2 Gbps to upstream (10 Gbps coming soon)
- IPv6 coming soon
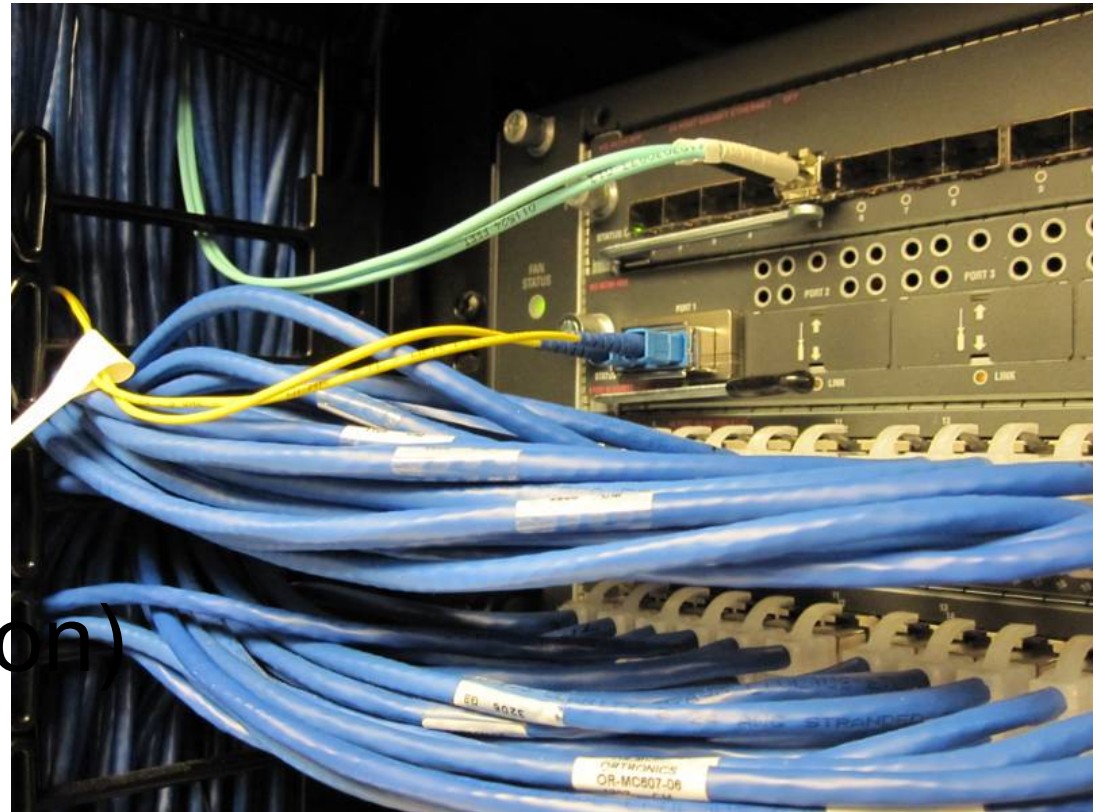
10Gbps uplink to NERO

Hosted Machines

- 266 servers + ~100 MeeGo servers
- ~130 virtual machines
- Projects purchase/own servers
  - 22 racks used by OSL currently
  - Project racks: Drupal, ASF, Gentoo, Linux Foundation, MeeGo
- What are they running?
  - Debian/Ubuntu, CentOS, FreeBSD

ASF & Drupal Racks

Google OSPO Servers

Freenode

Xiph.org

Kernel.org (master.kernel.org)

Services Provided at the OSL

- Co-location hosting
- Smart-hands support
- Virtual machine(s)
- Managed hosting
- FTP Mirror space
- Email forwarding
- DNS hosting

FTP Mirrors

- 3 servers
  - Corvallis, Oregon
  - Chicago, IL
  - New York, NY
- 6 TB capacity
- Split via DNS view
- 700 Mbps avg total
- TDS Telecom

ftp-osl.osuosl.org

Virtualization

- Ganeti
  - Ganeti Web Manager
- Linux KVM hypervisor
- Easy to expand
- Primary cluster
  - 5 machines / 75VMs
- Project clusters
  - phpBB, OSGeo, OSM, ORVSD

Supercell

- Continuous integration testing
- Run-time testing
- Several platforms supported
- On-demand virtualization
- Powered by Ganeti+KVM
- Hardware donation by Facebook
- Still in beta

Hosting FAQ

- Hosting tailored to each project
- Target medium-large "high impact" projects
- Typically outgrown their current hosting
- Bad experiences with other hosting
- Let the projects code instead of worrying about their site

Requesting Hosting

- http://osuosl.org/services/hosting
- Submit request to support@osuosl.org
- What we look for
  - Widely used project
  - Healthy community
  - Needs fit within our resources

Hosted Projects

New Projects / Stories

- Supercell launched
- New Projects
  - Elgg, crosstool-NG, speed.python.net, Project Harmony, Freedroid, OpenStreetMap US, Mageia, Sahana Foundation, Meego, Open Compute
- Ganeti Web Manager
- New Outreach Manager / Meego Dev
- Bandwidth Upgrades

Growth

- 4 years ago...
  - <10 racks
  - ~60 machines / ~30 VMs
  - ~60 projects
- Today
  - 22 racks
  - 366 machines / ~130 VMs

Tools We Use

- Configuration management
  - CFEngine+git
- Operating systems
  - Gentoo: *~115 machines*
  - CentOS: *~30 machines*
- Monitoring
  - Nagios, Cacti, Munin
- Issue Tracking
  - RT: external tracker
  - Redmine: internal tracker

Why Gentoo?

- Early History
- Easier customization
- Hardened
- Seamless upgrades*
- Team skill-set
- Tightly integrated into our CFEngine
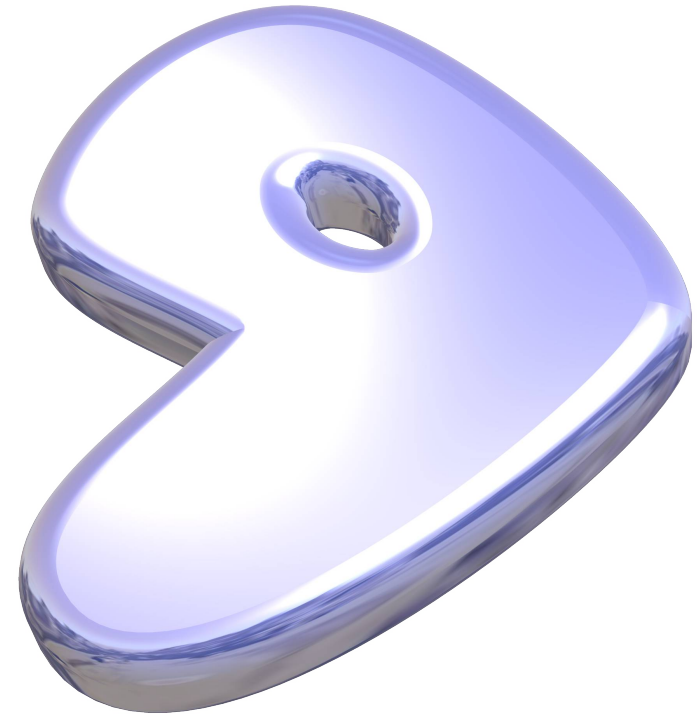
* Gentoo upgrades introduce a different set of problems compared to binary distros

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Funding

- Donations
    - Large Corporations
    - Projects
    - Individuals
- Grants
- No state funding
- Please support us!

Future

- Puppet migration
  - Shared server management
  - More flexibility
- More virtualization
- Server replacements
- Ganeti Web Manager
- Datacenter management tools
- More hosted projects

Questions?

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