Outline

- Intro and review of the problem.
- Some potential solutions.
  - Jump ship. What real alternatives are there.
  - Similar ship, different names: Fedora Core and Legacy projects.
  - Same ship, different compiler: Fermi Linux LTS, cAos.
  - Can't beat 'em, join 'em. Buying in to RHEL.

Some abbreviations and definitions

RHL - Red Hat Linux. The "consumer" or "free" versions. (7.x, 8.x, 9)

RHEL - Red Hat Enterprise Linux. Versions based on RHL (past) or FC (now), per system, per year charge. Comes in WS, ES and AS flavors.

RHPW - Red Hat Professional Workstation Sort of RHEL WS-lite + desktop. ˜$80, 1 yr RHN, only available in a box. After 1 yr???

RHN - Red Hat Network. Allows a single system use "up2date" to download patched packages (equivalent to APT or YUM).

RHEN - Red Hat Enterprise Network. RHN + a web front end allowing groups and multi-system package management (used by Physics).

FC - Fedora Core. A non-commercial project sponsored but not 100% controlled by Red Hat.

FL - Fedora Legacy. A project working to provide support for RHL 7.3, 9 and obsolete FC.

What is the problem

Red Hat is moving away from selling boxed sets and supporting consumer level customers in order to focus on "enterprise" level customers. As a consequence:

- No security patches for RH $\leq$ 8.0 after 2003/12/31
- No security patches for RH 9 after 2004/04/30
- RH 9 is the **last** "consumer", re-distributable RHL.
- Red Hat will only support RHEL; only RHEL in RHN/RHEN.
- RHEL prices: cheapest (w/out volume discounts): WS = $179 per system per year for 1-2 CPU.
- WS includes only a few servers: HTTP, SMB, and NFS (but, apparently no DBs?). Need the more expensive AS or ES for most servers.
- RHL $\rightarrow$ RHEL needs full re-install (some reports of upgrades working)
- Buying into RHEL allows Red Hat to audit your "organization".

Jumping Ship - Alternatives to Red Hat

Non-barriers to jumping:

- Ignoring RHEN, package management sees a level playing field. Ie. up2date $\equiv$ APT $\equiv$ YUM, to first order.
- Both in jumping ship and going from RHL $\rightarrow$ RHEL one will need a full re-install.
- Potential to gain more control, pay less money.

Barriers:

- Change == bad.
- Likely loose RHEN.

Which distribution to choose???

Fedora Core

Fermi Linux

Debian!

Pros:

- Non-commercial - no profit motive, supported by thousands of developers. Decisions based on a constitutionally bound democracy, implemented in formalized policy documents. Stability, not surprises!
- Decade long track record of proven commitment to quality and security. Often first distribution to find/release a security fix.
- Choice a two distributions: the long supported (3+ years) "stable" release only updated with security fixes, or the cutting-edge "testing/unstable" releases with the very latest software.
- Trivial upgrades (no reinstall needed) between stable releases, stable $\rightarrow$ testing/unstable or can just ride testing/unstable forever.
- The highest quality packaging and best package management system containing the most packages (˜10K).
- Much existing Debian experience at BNL, both inside and outside of ITD.
- Voted best distribution in this year's Linux Journal survey.

Debian!

Cons:

- No official support for some important proprietary software (eg. Oracle). This is more important for servers than clients.
- Stable releases mostly gets just security updates. New hardware sometimes requires running testing/unstable distribution.
- No service level guarantees, (but they do have a "Social Contract" with the Free Software community).
- Some consider Debian difficult to install, (is slowly improving).
- Some dislike Debian’s lack of GUI based admin tools (although, this is a pro for many!)
- There is a need to be more familiar with Debian system internals than with RHL or other "consumer" distributions.

Novell/SUSE and Mandrake

This is mostly hearsay and guesses.

SUSE:

- Individual SUSE users praise it.
- It enjoys support from 3rd party proprietary software (more than Debian, similar to RH).
- It now has a large corporation (Novell) backing/buying it (and Ximian).
- Reports of large companies already considering RH->SuSE switch.
- Pricing appears to be **higher** than RHEL.

Mandrake:

- Individual Mandrake users praise it (vehemently).
- Reportedly more desktop than server oriented.

Fedora Core - the Debian of Red Hat, sort of.

- Unknown quantity.
- Red Hat retains "editorial control" but with external developers participating in decisions.
- No formal support from RH, informal support from volunteer mailing lists, bug submission, etc.
- Free and "Red Hat-like" (no big re-education needed).
- Short release cycle, ˜6 months, updates 2-3 months after next release (Fedora Legacy may take this further).
- Security fixes not back ported, must upgrade package to most recent version.
- Updates via APT/RPM or YUM or via up2date which now "speaks" APT and YUM. No FC in RHEN.
- RHEL harvests packages from FC.

Free versions of RHEL

Okay to redistribute compiled-from-source RHEL.

Fermi Linux.

- Will support 7.3 at least until 2004/12/31.
- Will develop Fermi Linux LongTermSupport (LTS) based on RHEL 3.0. Beta release 2003/12/01. Jan/Feb 04 release.
- FNAL claims FL LTS will be "basically identical" to Red Hat's RHEL, implying no FNAL-specific mods.
- Seems best bet

cAos (www.caosity.org)

- Free community supported compilation of RHEL.
- No release yet - no ETA.

Others?

Free-RHEL concerns

- Will FL LTS be suitable for BNL "out of the box"?
- Time frame for FL LTS is tight. RH $\leq$ 8.0 dead just after LTS beta release. Only a couple months between expected release date and RH 9's EoL.
- cAos is still in the (self-admitted) vapor-ware stage.
- SLAC-RHEL? CERN-RHEL? BNL-RHEL??? or maybe come together for a HEP-RHEL?
- If we want to keep using RHEN how do we do it (and how much do we pay)? Will buying a RHEN Satellite Server solve the problem?

RHEL - Buying In

Common to all flavors:

- All include RHN entitlements. RHEN is extra.
- Entitlements are per system per year.
- 5 year security updates, 3 year bug updates, 12-18 month release cycle.
- Users of RHEL open up their "organization" to auditing by Red Hat.

Three flavors: WS, ES, AS, fine splitting based on support.

- WS: $179-299 ($792 for 64 bit). #cpu $\leq$ 2, few servers (HTTP, SMB, NFS but no NIS, DHCP. DBs?).
- ES: $349-799.
- AS: $1499-2499 (+$500 for 64 bit).

Large discounts for bulk purchases (see next talk).

RHEL - Open questions

How does Red Hat Enterprise Network still fit in? Is it still worth using?

With a RHEN Satellite Server (SS) we can inject our own packages. What about RHEN SS plus:

- Built-from-source RHEL, maybe with Fermi Linux packages?
- Feeding Fedora packages?

And the big question: what is the cost? If we buy SS but feed it only free packages (Fermi Linux / Fedora) to free clients do we still pay client connection entitlements?

What kind of deal can be negotiated for bulk purchases?

What are the other labs doing?

Some decisions in Physics

NUHEP workstations and servers (dozen systems):

- Physics SSH gateway, mirror, web, mail, interactive jobs and batch analysis.
- Gradually migrate all systems to Debian ("stable" and "testing" depending on need).

HE/Nu/Riken Theory workstations (˜40 systems):

- Will buy RHEL entitlements if bulk discounts work out.
- O.w. will consider CERN/Fermi Linux if it is available in time.
- Fall back is to switch to Debian ("testing" for latest GCC and XFree86).

RHIC Computing Facility (RCF) (1k node cluster):

- Behind an internal firewall, immediate security patching unnecessary.
- Stay at RH 8.0 for now (would anyways) take a wait and see approach for the future.

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