OS Support Briefing

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Overview – OS Certification

Evaluate and certify versions of CD-supported UNIX operating systems for desktop applications. Maintain and manage reference build systems with production and test environments for product maintainers. Provide operating system updates, including security patches. Provide and maintain user documentation and technical support mailing lists.

Overview – OS Support

Maintain and manage installation servers with production and test distribution versions, and reference build systems with production and test environments for product maintainers. Provide automated update service, including security patches. Provide and maintain user documentation and technical support mailing lists. Investigate and implement, as appropriate, new features.

Overview – System Administration

Provide first and/or second level system administration for UNIX and Windows desktops by specific agreement with client organizations. Maintain service and performance levels as specified in MOU or other informal understandings with client organizations. Provide regular system administration tasks, such as monitor system status and event logs, perform system backups, perform new installations and upgrades, arrange for hardware repairs, and respond to end-user issues. Plan and implement system upgrades and improvements to meet client requirements.

Overview – FRHL Support

Provide a standard Linux desktop environment with Fermi-specific modifications. Evaluate and certify versions of RedHat Linux operating system for desktop applications. Provide Fermi enhancements and customizations to RedHat distribution, including security and strong authentication. Provide mechanisms and procedures for local workgroup customizations.

System Support

- Desktop Support
  - Linux
    - Primarily indirect support via FRHL
  - Windows
    - Primarily administrative: LSS, FESS, ES&H, Dir, CD, CDF, NUMI
  - Non-Linux UNIX
    - Irix, Solaris
    - Small relative to FRHL & Windows, but not negligible

System Support

- Departmental / Scientific Servers
  - Departmental Windows servers
    - PPD as well as list of desktop clients
  - Departmental UNIX servers
    - CD, PPD
  - Scientific servers
    - CMS, SDSS, BTeV, KTeV, MINOS, …
- Farms
  - CDF, D0, Fixed Target, CMS

System Support

- Central Systems
  - Primarily Windows & Solaris
    - E.g. AFS, Mail, Web, CVS, Kits, ...
    - Also lab-wide Windows infrastructure (NT4, Win2k)
- General Purpose Servers
  - FNALU
    - General-purpose Unix interactive & batch
  - FT Farm
  - Build cluster

OS Certification Process

- Supported Operating Systems (DR0010)
  - FRHL 7.1
  - FRHL 6.1.2
  - Irix 6.5
  - Solaris 8/SunOS 2.8
  - Solaris 6/SunOS 2.6
  - OSF1/Tru64 v4.x (???)

OS Certification Process

- In the works:
  - FRHL 7.3 Certification
  - Solaris 9 Certification
  - FRHL 6.1.2 Decertification
  - OSF/Tru64 Decertification

OS Certification Process

- FUE Certification Issues
  - DR0004 needs periodic revision
  - Difficult to motivate product maintainers/ testers
  - Process takes longer than many people like
  - Do not coordinate with other labs (e.g. CERN)

OS Certification Process

- Windows XP Certification
  - Windows “certifications” are not formal – done by consensus
  - Driven by new hw technology, e.g. laptops
- 64 Bit Architectures
  - Certification (& support) issue for both Linux & Windows
  - Increased effort for OS & product maintenance & support

Fermi RedHat Linux Development & Support

- Linux Scientific Desktops
  - Support model is optimized for self-supported desktops & farms
  - Primary support thru linux-users, local experts, CD experts
  - Standardized distribution & automated updates a “big win”

Fermi RedHat Linux Development & Support

- Hardware Certification
  - "Large" evaluation open to all vendors approx. every two years
    - Desktops & (farms) servers, not laptops
  - "Small" evaluation open to pre-qualified vendors more frequently
    - Usually driven by farms procurements
  - Overall, hardware certification (& subsequent burn-in for farms) considered a success
  - No good model for desktop hardware buys
    - No one wants to run the "PC Store"
    - Target moves too quickly

Fermi RedHat Linux Development & Support

- Linux for Servers
  - Issues of supporting special configs for special apps, for e.g.
    - RedHat Advanced Server for Oracle
    - Kernel mods & tuning for multi-ways
    - Kernel mods & tuning for I/O servers, e.g. dcache nodes, CDF CAF

Fermi RedHat Linux Development & Support

- Farms & Large Cluster Support
  - Farms have own support requirements
    - 100's of "identical" nodes an advantage
    - But, less "identical" than previously
    - Also, less "disposable" than previously
  - Also touch on grids & fabrics…

Windows Support

- Windows NT/2000 Support
  - Windows desktops & servers
  - Primarily administrative organizations
    - FESS, ES&H, LSS, DIR, CD …
    - By agreement/MOU
    - Also general resource to Lab
  - Standardized OS & app suite installations
  - Lab-wide infrastructure
    - NT4 & Win2k domains

Windows Support

- Windows 2000 Migration
  - Lab-wide infrastructure in place
  - Windows Policy Committee in process
  - Push to migrate by Dec 31, 2002

Windows Support

- Beyond Windows 2000
  - Windows XP support
    - Already a fact of life
    - How do we decide to support a new Windows?
  - Windows .NET
    - May requires buy-in to philosophy as well as technology
  - Window/Linux desktop coexistence
    - What tools best support Windows applications for Linux desktops?
  - Linux administrative desktops
    - Can Linux replace Windows?
    - Trading license costs for support costs may not be a win
    - Heresy in some circles

Product Support: Issues for OS Support

- AFS/OpenAFS
  - AFS is key to how large(r) clusters are managed
  - How to move into OpenAFS (or do we still need to)?
- UPS/UPD Alternatives
  - UPS/UPS is also key to how large(r) clusters are managed
  - Yet some products consume enormous support
  - Move to some other model?
- Windows Applications
  - Move towards better-defined suites of supported tools & standardized installations
- All the above help us better leverage sysadmins

Security

- Sysadmins are “on the front line”
  - We hear this over-and-over
  - Sysadmins are expected to
    - Know who & what is on their systems
    - Know what the security implications are (or ask)
    - Maintain a secure configuration & follow “best practices”
    - Install security patches promptly
    - Follow security policy
    - Set a “good example”

Security

- Vulnerability Monitoring & Patch Distribution
  - Sysadmins (primarily vendor liaisons)
    - Monitor the Internet for new vulnerabilities
    - Develop or download patches & make them available to the community-at-large
    - Provide special expertise
- Recommendations & Standard Configurations
  - Sets the standards for “best practices”
  - FRHL is an excellent example
- Heavy engagement in FCIRT
  - The activity benefits FCIRT, CST, OSS, CD, Lab …
- Critical Systems Support
  - For e.g. “slow controls” & Win2k infrastructure

Questions & Discussion