NNDC Database Migration Project

Prepared for the

US Nuclear Data Program Meeting

November 6 and 7, 2003

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Background

- Why the migration?
  - Replace obsolete hardware and software
  - Relational databases are an Industry Standard
    - Mature software
    - Large base of supporting software for administration and dissemination
    - Replication and synchronization tools
  - Improved user access
    - Interface
    - Speed

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Background (cont.)

- Migration Issues
  - Hardware selection
  - Software choice
  - Database design specification
  - Data and legacy code migration
  - Administration and dissemination
  - Replication procedures

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Boundary Conditions

- Retire VMS operating system in 2005
- Current production activities must be maintained during migration
- Effort must come from existing resources
- Entire NNDC staff involved
- Emphasis given to existing functionality

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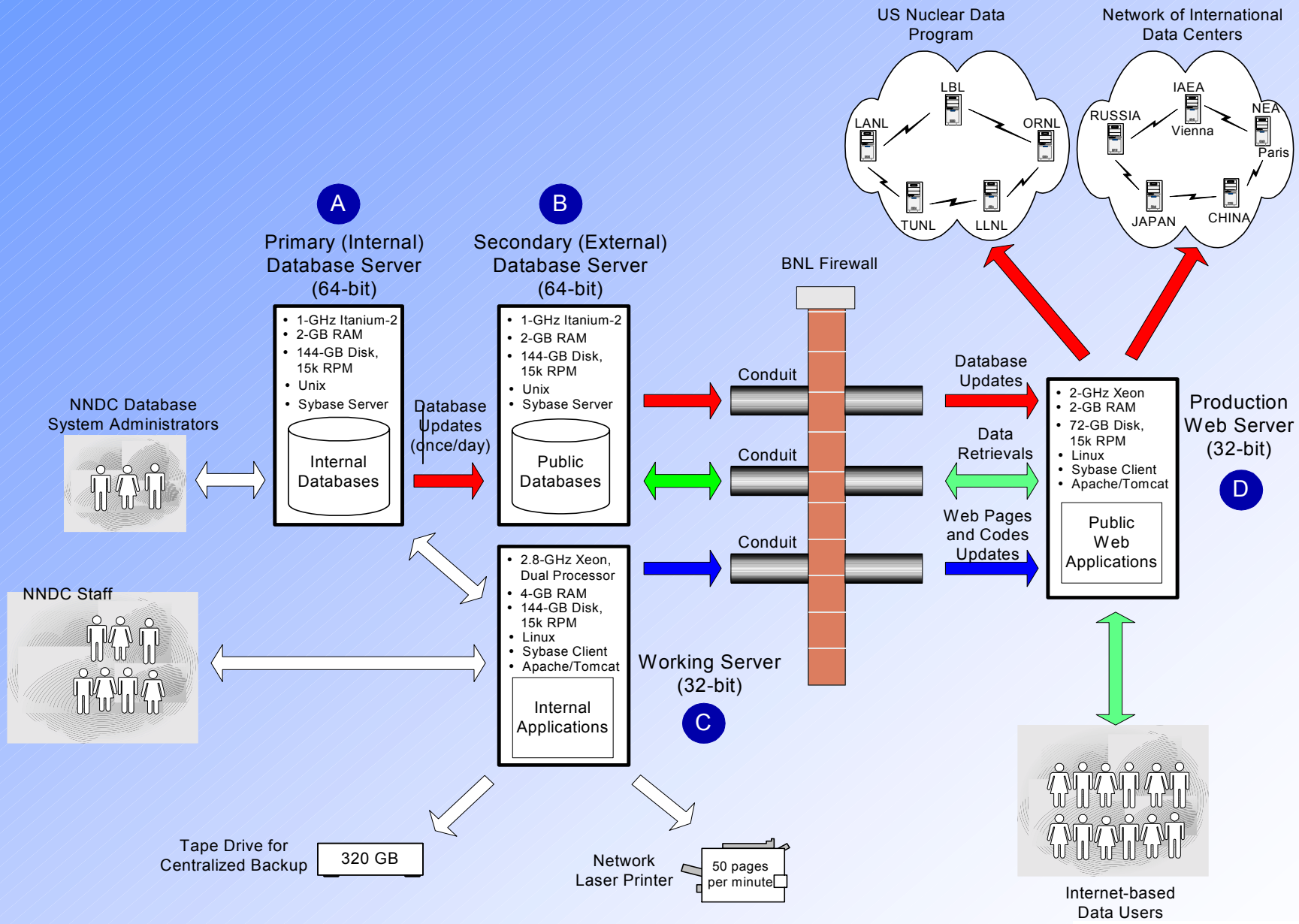
Final Hardware Configuration



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Software choices

- Relational Database Management System (RDBMS)
  - Sybase Adaptive Server Enterprise (ASE)
    - Relatively easy to move between different RDB systems (*e.g.*, MySQL, MS SQL-Server, or MS Access).
  - Structured Query Language (SQL)
  - Administrative tools (*e.g.*, loading or updating database or reports) written in Java
- Linux or UNIX platforms
  - Red Hat Linux for development machines and Web servers
  - Red Hat Linux or HPUX for database servers

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Software choices (cont.)

- Web
  - Apache Server with Tomcat
  - Java server pages (jsp) or Java servlets and perl/cgi
  - Full functionality of the current Web and TELNET services
  - After thorough testing of the interfaces and databases, the TELNET and anonymous FTP services will be terminated.

- Legacy FORTRAN Codes
  - Database related – Write Java replacements or replace current DBMS/TEXT library routines with ones using a C/ODBC interface to the new databases
  - Other codes – Port to Linux (Lahey-Fujitsu)

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Future (> 2005)

- Future exchanges between dissemination centers (*e.g.*, NNDC and NEADB) may be done using replication technology or XML.
- Replacement of old Fortran legacy codes
- Improvement of user interfaces

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Schedule

- New hardware
  - Funding received
  - Now being purchased in 3 phases
  - First two phases completed
- Nuclear structure migration to be completed this year
  - NNDC effort
  - NSR, ENSDF and NuDat in final testing stage
- Nuclear Reaction migration to be completed in 2004
  - Joint effort of IAEA and NNDC
  - CINDA and EXFOR nearing completion
  - ENDF still to be started this year