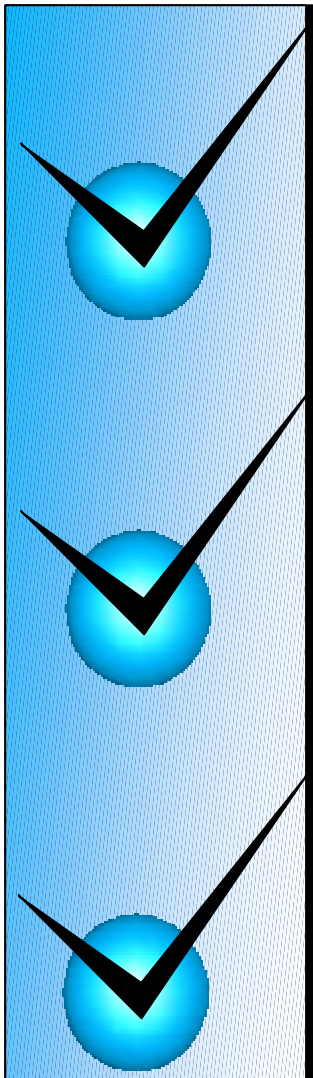


NFS In the Microsoft World

Danny Masci

Product Manager Network Connectivity

Hummingbird Ltd.

danny.masci@hummingbird.com

Is the Future NFS?

- Windows does not support NFS Out Of The Box.
- Does LINUX play a role?
- What about Legacy equipment?

Windows

- More Windows based PC's on corporate desktops
  - Corporate trend to use Microsoft based applications
  - Data requires cross platform collaboration

Linux

- Linux systems sharing desktop space with Windows and UNIX workstations
  - Linux based workstations are becoming more prevalent requiring access to corporate information
- Linux Systems becoming stable solutions to non business critical servers.
  - More companies are relying on Linux systems for File and Print servers as well as WEB and Mail servers

Legacy

- Large corporate investment in legacy storage systems
  - Corporations have large investments in UNIX and VMS based systems and require the ability to utilize these systems

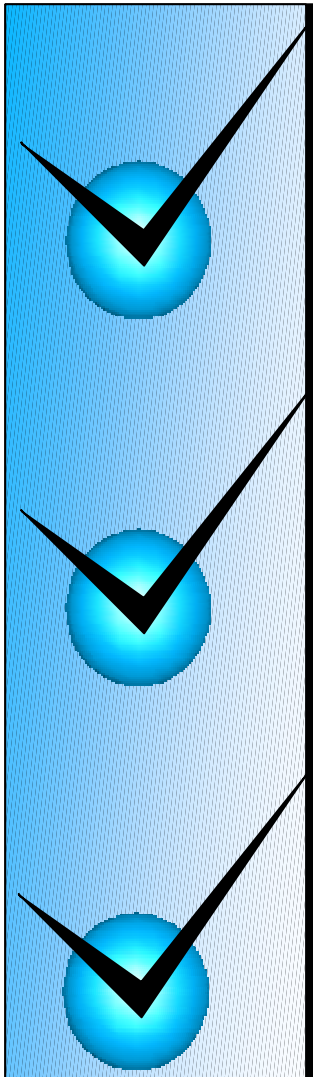
Mass Storage

- NAS (Network Accessible Storage) media
  - More and more organizations are investing in NAS systems that allow for a single file repository for databases and documents

Diverse Operating System Environment

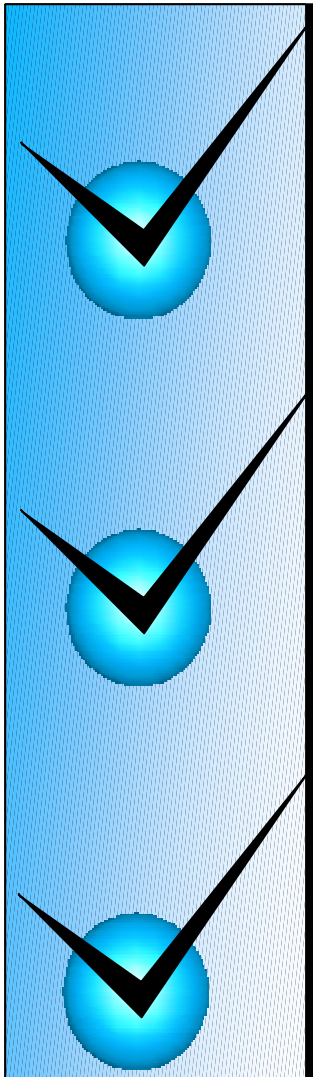
- Need to share information in heterogeneous environments
  - As corporate structures become more diverse, a standard way to share information and resources is required
  - NFS Clients and Servers are available for all Operating System configurations from MAC to Windows
  - Applications that run on differing operating systems use the same file formats

Solutions



Microsoft CIFS (Common Internet File System)

- CIFS is an enhanced version of SMB (Server Message Block)
- Allows the ability to natively share UNIX resources to Microsoft Windows based systems
- Requires proprietary software to be installed on UNIX and Linux systems



CIFS - Pros and Cons

Pros

- No administration requirements on End User PC
- No additional training for End Users

Cons

- Non standard software installation on File and Print servers
- Proprietary software requirements from Operating System Vendors
- Increased support and administration costs

SAMBA

- Adds SMB capabilities to your UNIX or Linux systems
- Allows the ability to natively share UNIX resources to Microsoft Windows based systems

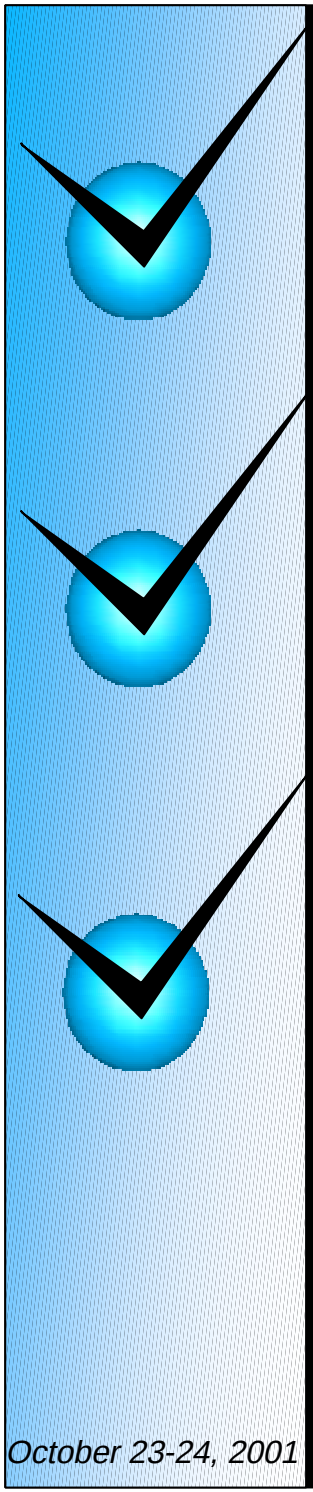
SAMBA – Pros and Cons

Pros

- No administration requirements on End User PC
- No additional training for End Users

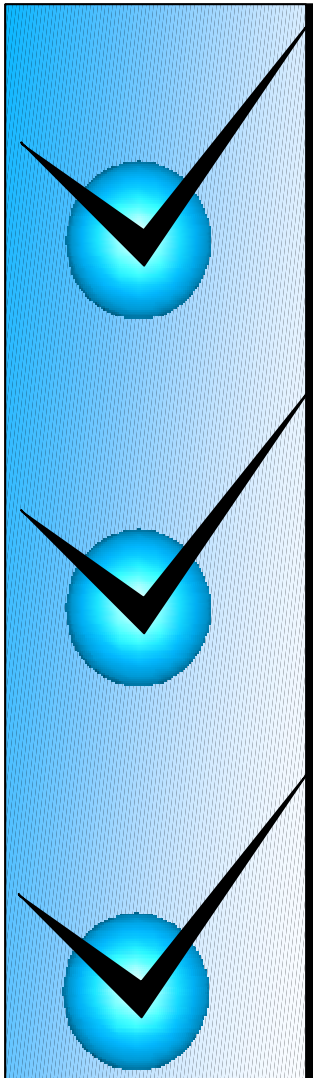
Cons

- Non standard software installation on File and Print servers
- Shareware solution with no mainstream support
- Increased support and administration costs



NFS (Network File Systems)

- Native Industry Standard file sharing technology for decades
- Tuned for use over today's complex networks
- PCNFSD is the only thing required for platform independent file and printer access on UNIX and Linux systems



NFS – Pros and Cons

Pros

- Industry Standard File and Printer sharing protocol
- No additional administration to UNIX or Linux back office equipment
- Microsoft Clients require no additional End User training
- Fully support by software vendors

Cons

- Requires additional software installations on End User PC’s

Hummingbird Ltd.

Hummingbird is a software solutions vendor that tries to fill corporate information needs.

Hummingbird offers a wide range of Microsoft Windows network connectivity solutions that include PC Xserver, Telnet client and NFS client and server solutions.

Hummingbird is an industry leader in these areas.

Hummingbird NFS Maestro Client™ NFS Maestro Solo™

- NFS Maestro Client for DOS/Windows based PC's.
  - Support Operating Systems Today:
    - DOS/Windows 3.x
    - Windows 95/98/ME
    - Windows NT 4.0 and 2000
- Complete access to any NFS resource on your network.
- Supported security methods:
  - System/UNIX (Auth_UNIX)
  - DES (AUTH_DES)
  - GSS (RPCSEC_GSS)
  - Kerberos V5 form MIT or Windows 2000

Hummingbird NFS Maestro Server™

- NFS Maestro Server allows for the seamless sharing of Windows NT/2000 file and printer resources to ANY NFS client
- Gives corporations the ability to add lower cost fileservers into their back office to support all corporate workstations
- POSIX support gives full Case Sensitive names to the Windows NT File System (NTFS)

Hummingbird NFS Maestro Gateway™

- NFS Maestro Gateway allows Windows based PC's access to NFS file and printer resources without the need of an NFS client
- This solution is resource intensive on the Windows NT/2000 Server and is advisable to have a dedicated PC for this purpose
- This is intended for occasional NFS requirements

Where do we go from here?

- NFS Needs to become more flexible in order to integrate into the ever expanding security schemes used.
- Tighter integration into the WEB world to allow easier access to file systems via HTTP and HTTPS.
- Better usage of communication protocols to allow for better WAN access

NFS Version 4 – Bringing in the future

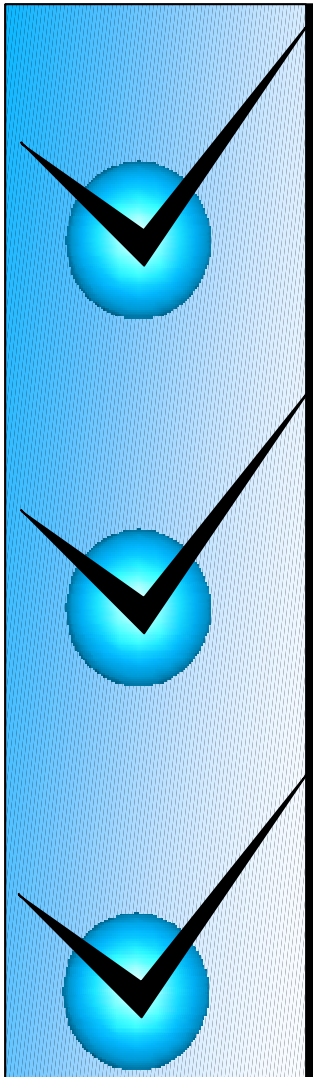
- Security
  - Uses strong security based on cryptography.
  - No longer requires the mount protocol.
  - Supports Windows NT Style Access Control Lists (ACL)

NFS Version 4 – Bringing in the future

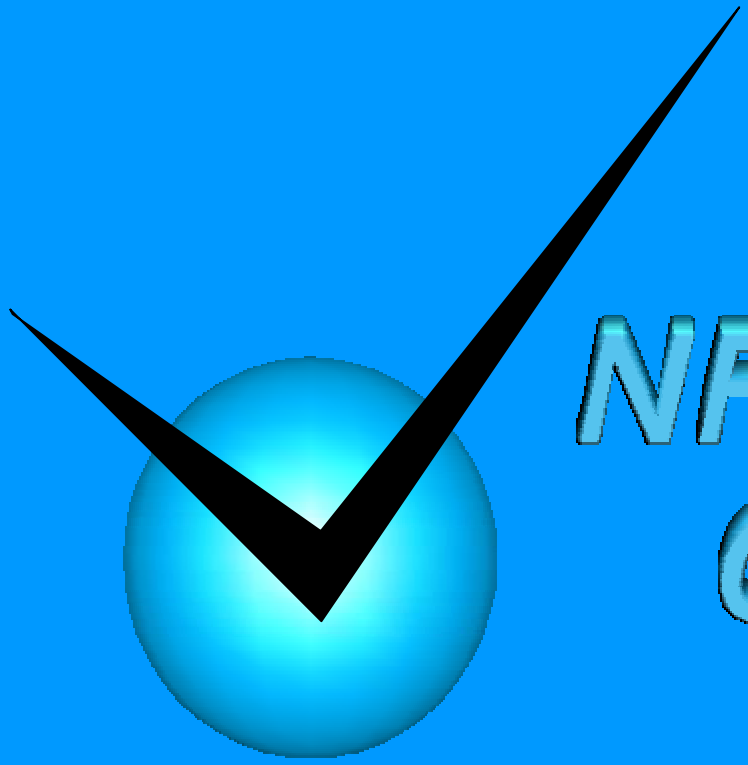
- The WEB
  - Mandatory use of TCP
  - Global user name space
  - LIPKEY for mandatory security
  - Removal of mount daemon and forcing the NFS Server to use port 2049 allows for firewall transversal
  - Stateless connection allows NFS to be used as a faster alternative to FTP or HTTP downloads

NFS Version 4 – Bringing in the future

- The WAN
  - The sophisticated caching implemented in NFS V4 coupled with High Speed DSL modems allows for better access to remote file systems
  - Allows the ability to actively share files over the Internet
  - Ability to hide non exported file systems from the same parent structure



Network File System's IS the Future



NFS Vendors Conference