



NFS: Pushing the Limits

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Smita Thakur
Sr. Product Manager
Sun Microsystems, Inc.



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Agenda

- History of NFS
- NFS On the Move
- NFS in the Real World
- Enterprise Data Center
- Myths Around NFS
- NFS Targets Data Center Challenges
- NFS Has Broad Based Support
- Conclusion



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History of NFS:

Emergence of NFS

- File Transfer through ftp
- File Sharing
 - Data Access in Chunks
 - Data Location Irrelevant
 - Up-to-date Information
 - Local Storage Unnecessary
 - Quick Turn Around



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History of NFS:

Evolution of NFSv2

- First Commercial shipment 1985
- Public Protocol
- 8K Transfer Limit
- 4 GB File Limit
- Synchronous Writes
- Simple to Implement
- Widely Deployed
- Developed by Sun Microsystems, Inc.



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History of NFS:

Enhancements Lead to NFS v3

- NFSv3 Protocol Published in 1993
- 64 bit File Access
- Fast & Safe Write Capability
- No Limits on Transfer Size
- No File Limit



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NFS on the Move - NFSv4

- Developed by IETF
- Internet Friendly
- Open Standard, Open Development Environment
- Strong Security
- Designed for Extensibility
- Cross-Platform Interoperability



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NFS in the Real World

Traditional Markets:

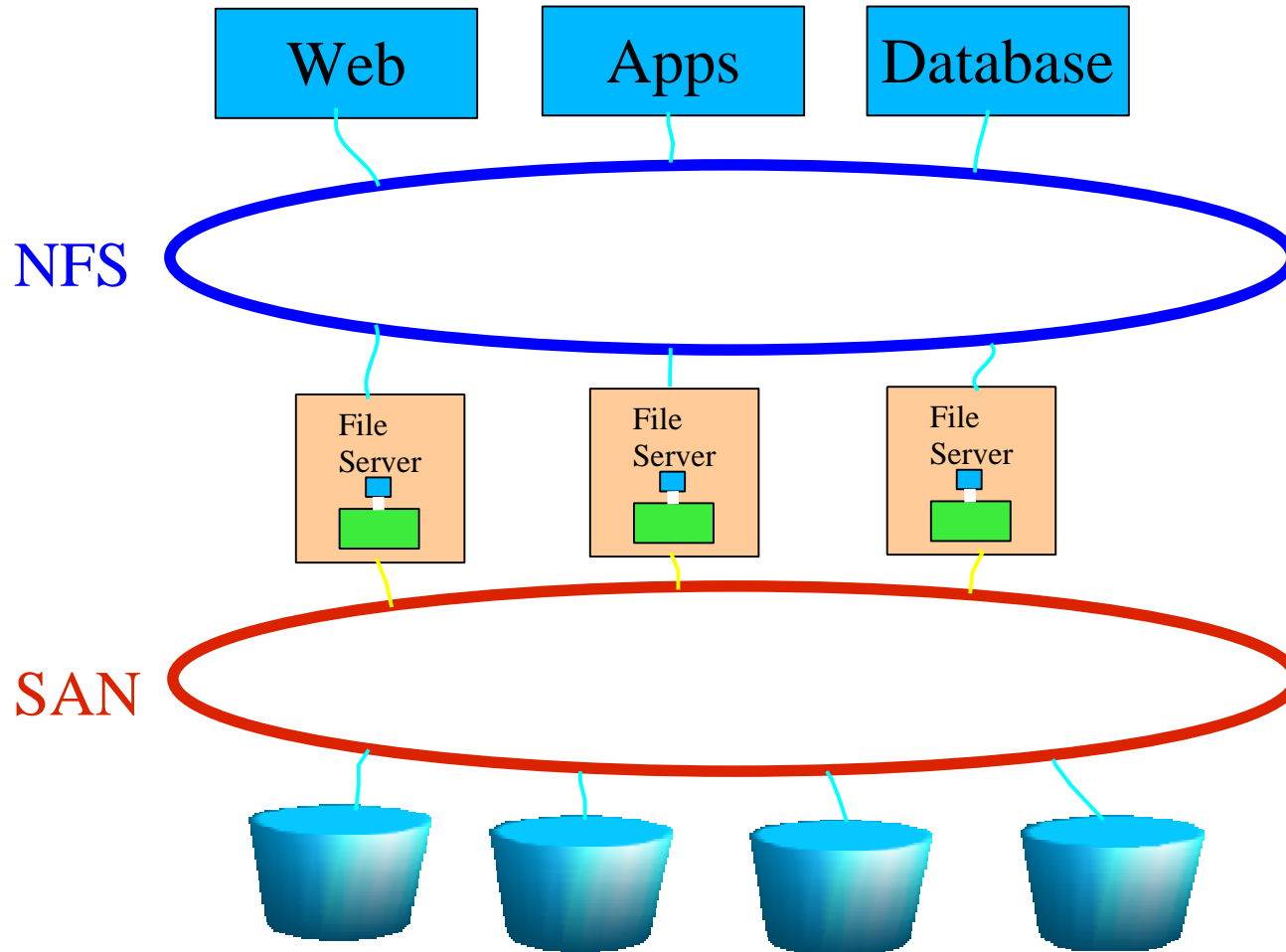
- Workgroup File Access
- Departmental & Small Enterprise
- Physical Security

Enterprise Data Centers: Is NFS Ready?

Enterprise Data Center (EDC)



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Enterprise Data Center (EDC) Requirements

- Uninterrupted Availability
- Data Security and Reliability
- High Performance
- Massive Scalability
- Ease of Manageability
- Distributed Systems
- Heterogeneous Environment
- Interoperability



Myths Around NFS

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NFS is NOT Secure

NFS is NOT Scalable

NFS is NOT Fast

NFS is NOT Modern



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NFS Targets EDC Challenges

Myth #1

NFS is NOT Secure

NFS is SECURE

- RPC-Based Security
 - Kerberos
 - LIPKEY



NFS INDUSTRY CONFERENCE

NFS Targets EDC Challenges

Myth #2

NFS is NOT Scalable

NFS is SCALABLE

- Files Available to Hundreds of Client Machines
 - Large Enterprise Customers
 - Sun Microsystems, Inc.



NFS Targets EDC Challenges

Myth #3

NFS is NOT Fast

NFS is FAST

- NFS is capable of High Performance
- Will be faster with NFS over RDMA
 - High-Speed Interconnects
 - Reduced CPU Overhead



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NFS Targets EDC Challenges

Myth #4

NFS is NOT Modern

NFS is on the FAST TRACK

- As Modern as HTTP, TCP, SCSI
- NFS at 10GB & Beyond
- Adapting to High-Speeds Interconnects
- Move Beyond UNIX: Apple, LINUX & PC
- NFSv4



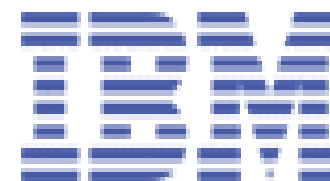
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NFS Has Broad-Based Support

Major Vendor Participation Including:



sgi™



Microsoft



Novell.