

The background features a dark, textured surface with a glowing blue sphere in the center. The sphere has a white Apple logo on its top. A purple ribbon is wrapped around the sphere. In the background, there are faint images of a typewriter and a pen holder with several pens. The text "Worldwide" is written in a golden, serif font with a slight shadow effect.

Worldwide

Developers

Conference



Apple's Server Product Plans

Brinton Baker

**Senior Director
Product Marketing**

Agenda

Server Product Plans

- Year in Review
- Server Directions
- Rhapsody for Servers
- Feedback / Q&A



Year in Review

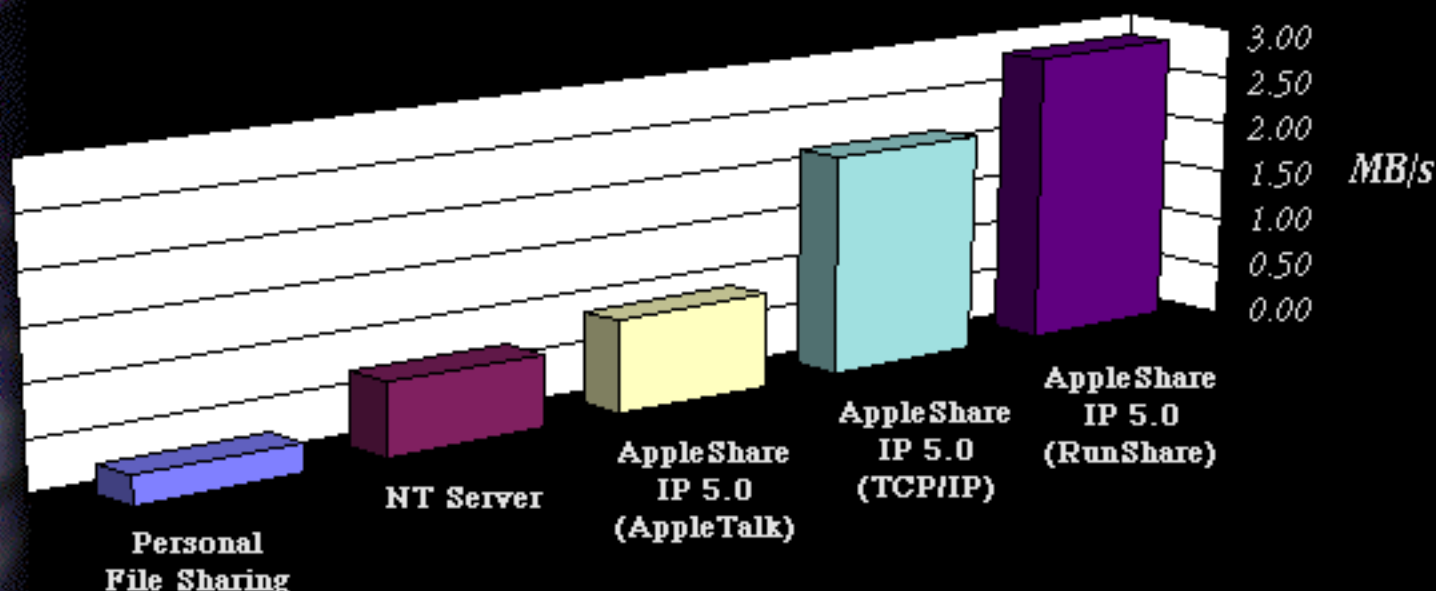
Continuous technology improvements

- Processor Speeds
 - 132MHz 604 → 233 MHz 604e
- SCSI Speeds
 - Fast SCSI-2 (10MB/sec) → UW SCSI-3 (40MB/sec)
- Disk Capacity
 - 2GB Drive → Dual 4GB UW Drives
- Default RAM
 - 24MB → 64MB



Workgroup Server Performance

Preliminary results



Tests performed with 8500/200
over Fast Ethernet reading
10MB files from the servers



Server Focus

Increase client connect rate

- **Focus on client/server selling to customers with Mac clients**
 - Build the best servers for Mac clients
 - Build good PC servers
 - Integrate into heterogeneous networks
 - Leverage/integrate the Web



Server Directions

Simplify—Integrate—Focus—Partner—Execute

- Simplify and integrate Server Product Line and provide Common System Logic to increase compatibility and reduce product costs
- Prioritize and focus on key Server growth segments of Learning/Education and Graphics/Publishing
- Provide technological leadership for Apple system platforms
- Execute concurrent Server and Desktop product intros



Server Directions

Simplify—Integrate—Focus—Partner—Execute

- Develop/partner to create Leadership Solution Category ownership in core Apple strongholds of Internet and File/Print
- Incorporate features compatible with corporate DSUVs to leverage Apple's brand strengths
 - AppleShare and Internet Software Bundles
 - Web-based Remote Administration
 - Service Processor Card
 - Standard NT file services for Windows clients, better connectivity to Macs



Hardware Directions

Continued investment in Workgroup Servers

- Offer dual price points with increasing power
- Enhance product line twice/year
- Lead Apple with PowerPC chip incorporation
- Continue optimal I/O integration
 - Disk / SCSI / L2 / Networking
- Introduce 2-way Multiprocessing
- Introduce Service Processor Card
- Introduce 4-way R.A.S. Server
- Introduce Internet Server Appliances



OS Directions

Dual OS Strategy

- **Continued support for Mac OS**
 - Incorporation of Mac OS enhancements
 - Mac OS bundled with all servers
 - AppleShare and Internet Services enhanced
- **Ramp-up for Rhapsody**
 - Includes enhancements for Servers
 - Focus on services





Rhapsody for Servers

Dave Payne

**Rhapsody Server OS
Engineering Manager**

Rhapsody for Servers

- **Same code base as core Rhapsody**
- **Additional features installed or enabled for servers**
 - Performance
 - Scalability
 - Reliability and availability
 - Security
 - Server administration
 - Integrated network services



High Performance

- **Pre-emptible kernel**
- **SMP with fine-grained locks in kernel**
- **Multi-threaded drivers**
- **Multiple fast network cards**
- **Multiple wide ultra-SCSI cards**



Scalability

- **Volume management**
 - Large volumes through disk spanning
 - Striping and mirroring
- **I/O optimized for servers**



High Reliability and Availability

- **Meta-data logging file system**
- **Error logging / reporting**
- **Failure prediction**
- **Clustering / automatic failover**



Enablement of Hardware Features

- **Up to 4 way SMP**
- **Large I/O expansion capabilities**
- **Environmental sensors**
 - Temperature, fan, power supply
- **Hardware RAID**
- **Service processor card**



Server Administration

- **Integrated client/server administration**
- **Interaction of NetInfo, NIS, etc., in heterogeneous environments**
- **Browser-based remote admin**
- **Headless operation**
- **Performance monitoring and tuning**



Integrated Network Services

- **Macintosh file / print**
- **PC file / print**
- **Internet services**
- **WebObjects**
- **Backup**





Feedback and

Q&A

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Worldwide

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Developers

The background features a dark, textured surface with a glowing blue and purple sphere in the center. The sphere has a white Apple logo on its top. A magnifying glass is positioned over the sphere, and a pen is visible on the right side. The text "Conference" is written in a golden, serif font across the bottom.

Conference