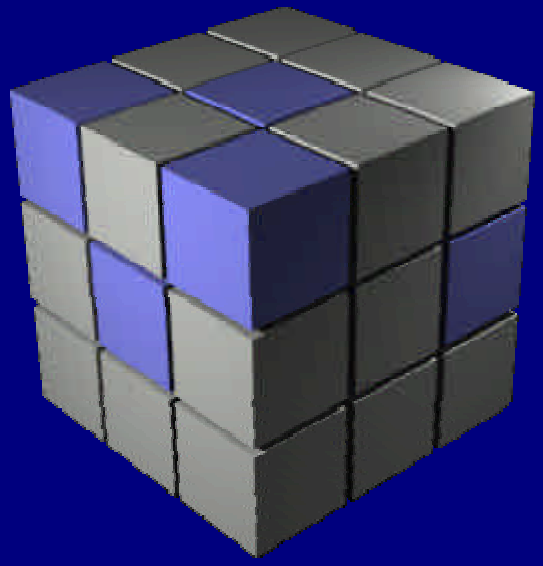
Steffen Bartsch
Technical Integrator

Agenda

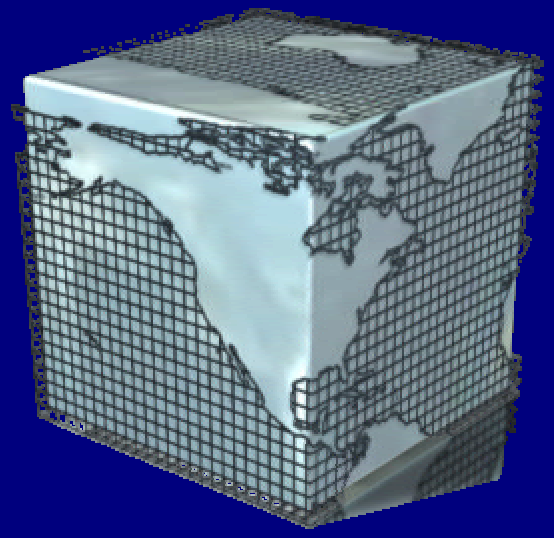
- HDS Corporate Profile
- Hitachi Freedom Storage Solutions
  - Product Family
  - Enterprise <-> Midrange
  - SAN: 1Gbit / 2Gbit ?
  - SAN – NAS – or both?
  - Virtualisation
  - Freedom Storage Thunder 9200
    - Thunder 9200 Features
    - Thunder 9200 Software Offering



Duration: ~ 30 minutes

HDS: Company Data at a Glance

- Founded 1989
- Wholly-owned subsidiary of Hitachi,Ltd. (NYSE:HIT)
- Total Employees - 2,900
- Operations in 48 countries
- Hitachi Freedom Storage™ software, hardware, and services
- Hitachi, Ltd.’s focal point for storage technology

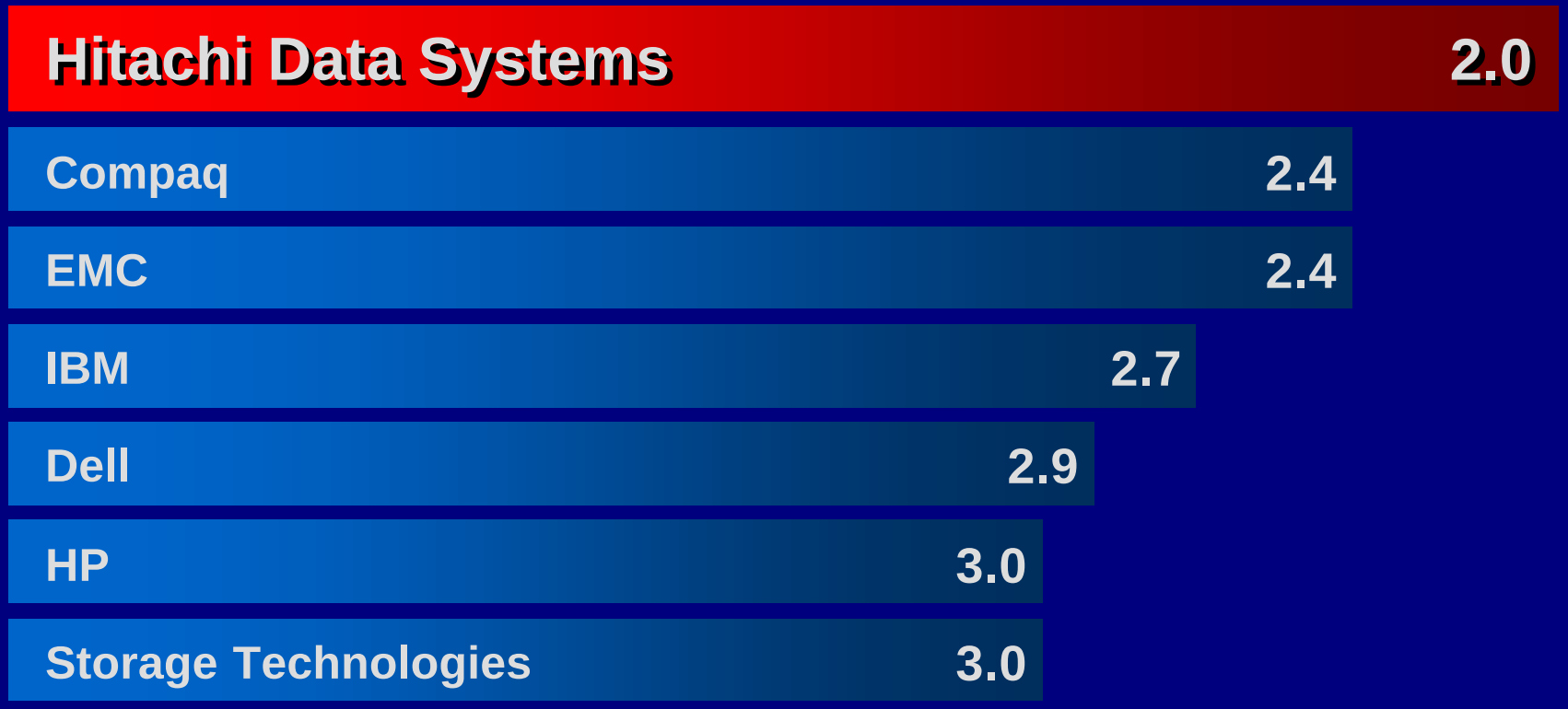


Hitachi Data Systems EMEA

Wit SoundView

How do you rate the following vendors disk storage?

(on a scale of 1 to 5, with 1 being best)



Source: Wit SoundView survey of Gartner conference attendees (July/01)

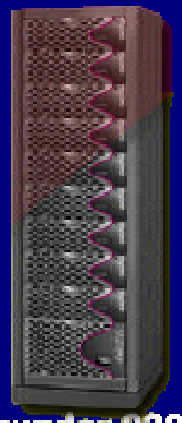
Product Family

Carrier Class

Enterprise

Mid-Range

- 4 - 512 Disk‘s
- Mainframe
- Open-System

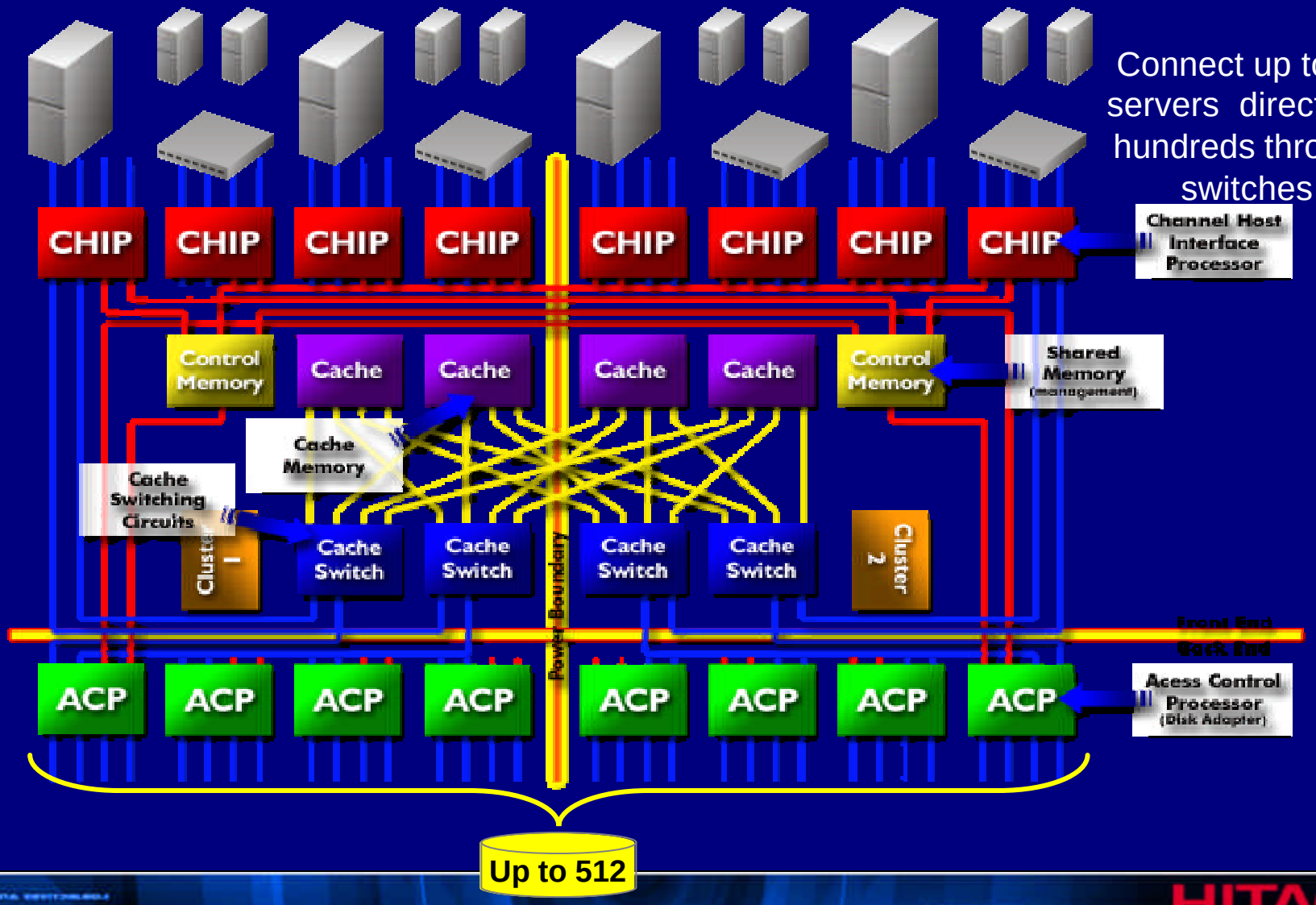


- 4 – 100 Disk‘s
- Open-Systems

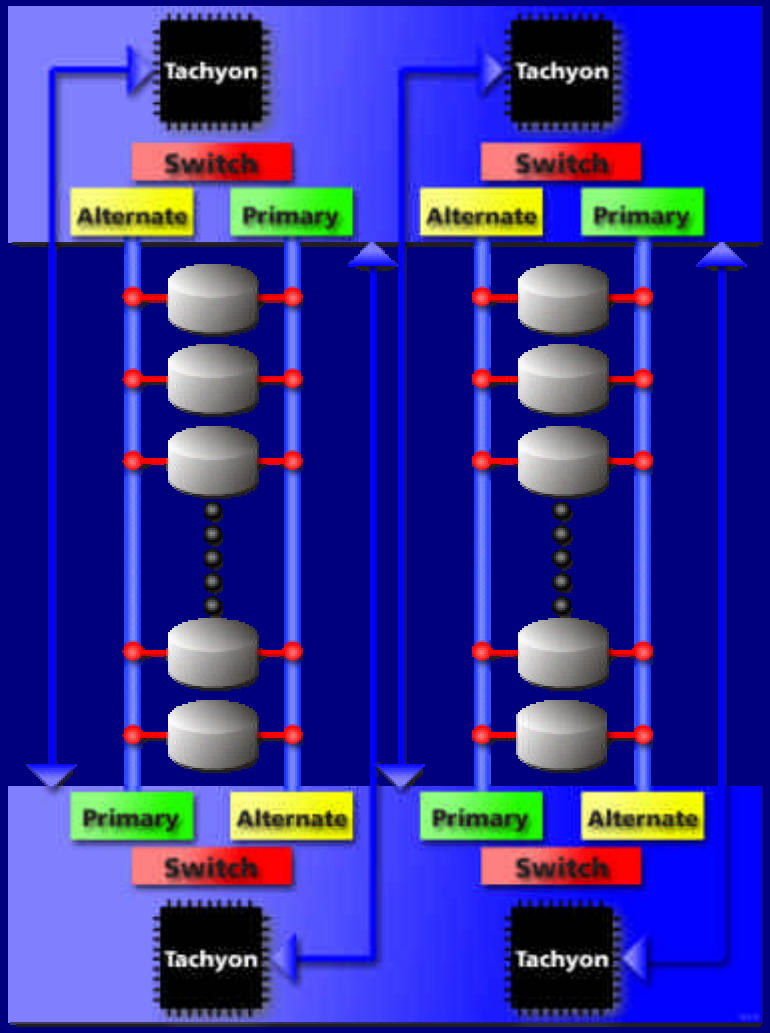
Performance

Capacity

HiStar Architecture – 9900 Enterprise Class



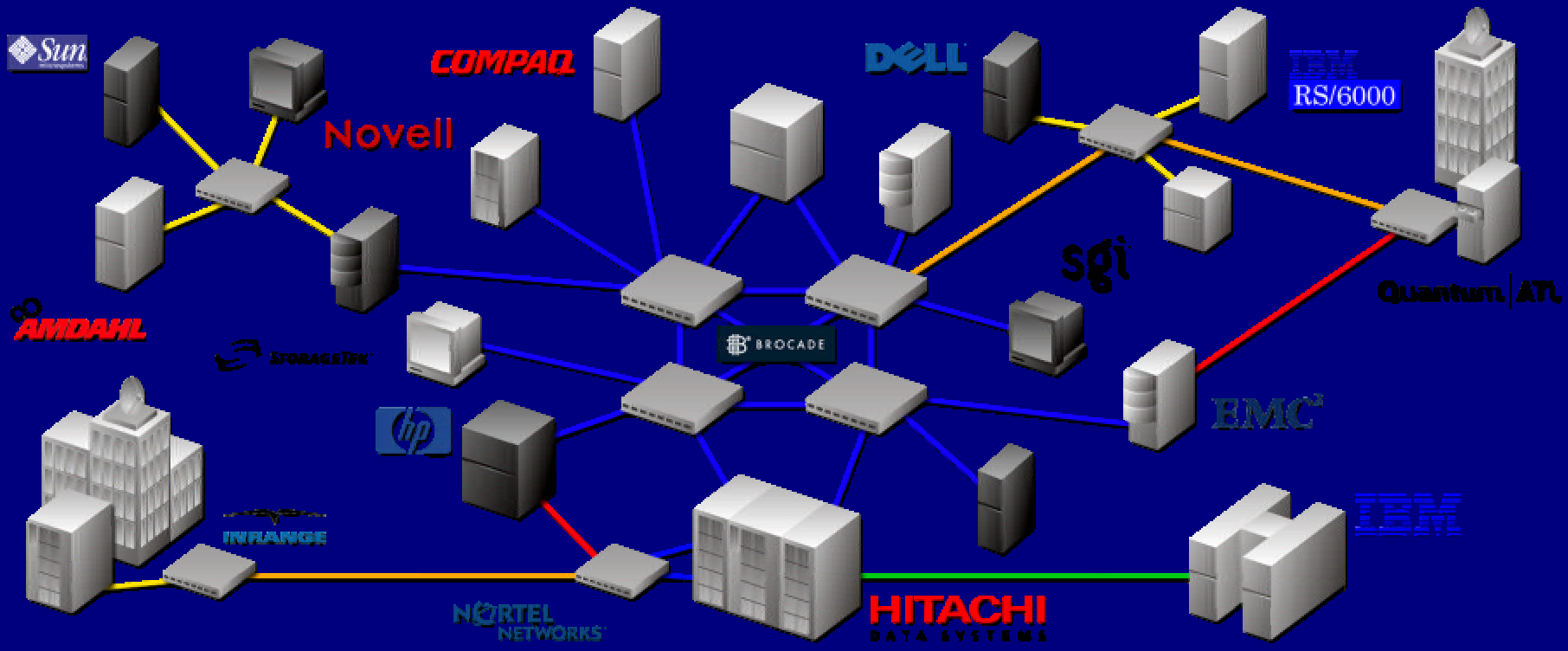
FC Architecture 9200 Midrange Class



- High Speed FC-AL backend
- Quad 100MB/s Full duplex FC loops
- 2 Tachyon chips per controllers
- Loop switching architecture
  - Primary / Alternate
  - Alternate used if Primary is busy or unavailable

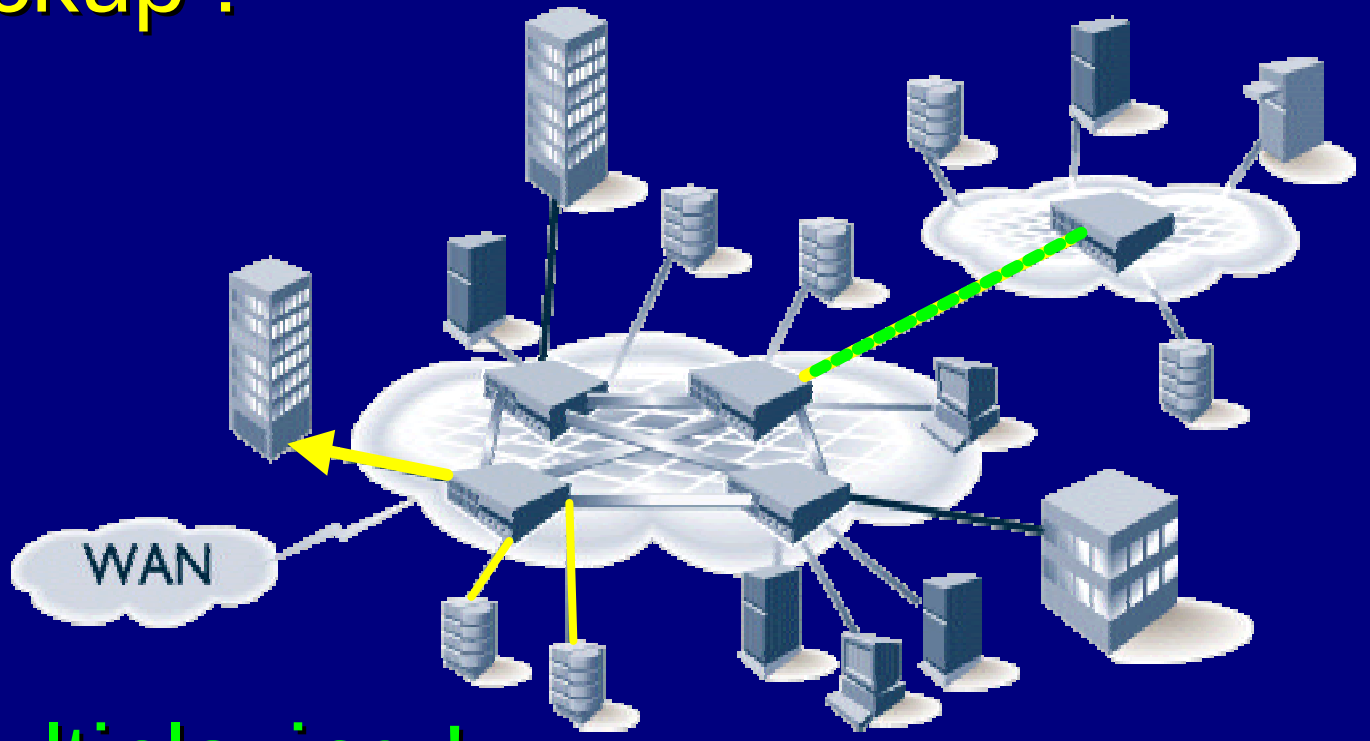
The Hitachi Data Systems Vision

Any Data, Any Computer,
Anytime, Anywhere



1Gbit – 2Gbit ?

Backup !

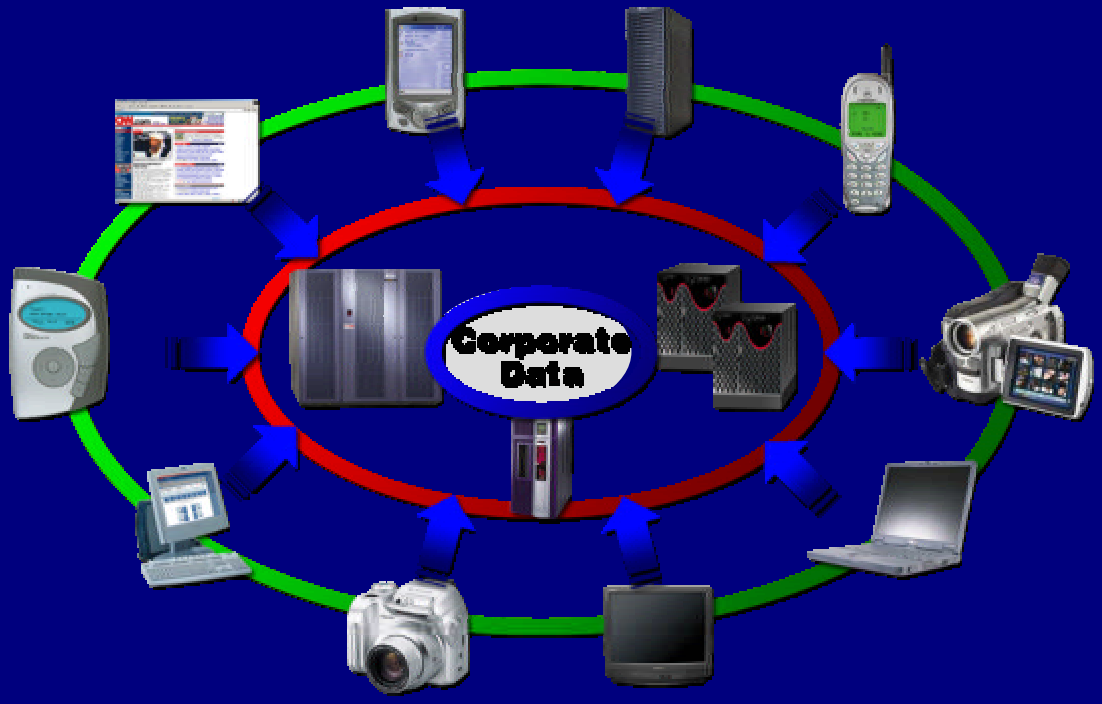


Multiplexing !

Networked Storage for the Networked World

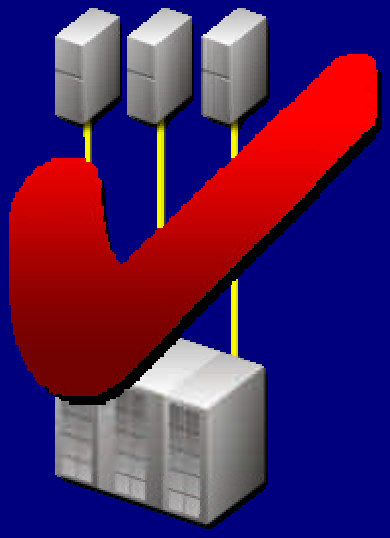
- Concept of storage as "Utility"
- **Connectivity technology is irrelevant:** availability and simplicity are everything!

Where is all the data coming from?

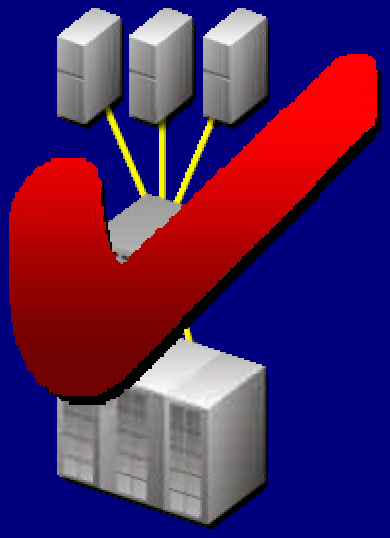


SAN or NAS?

Direct Connect



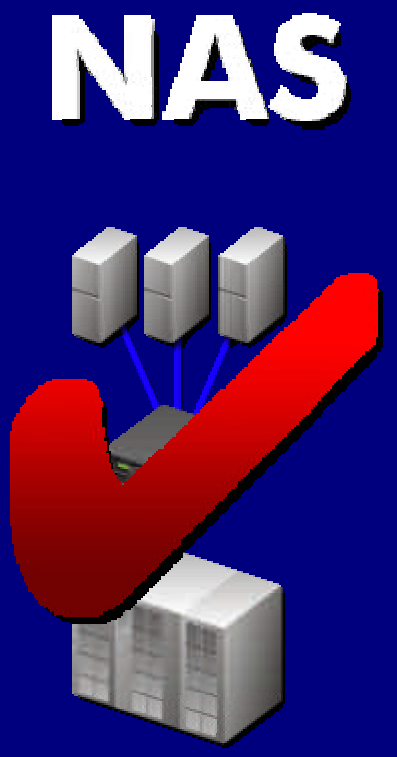
SAN



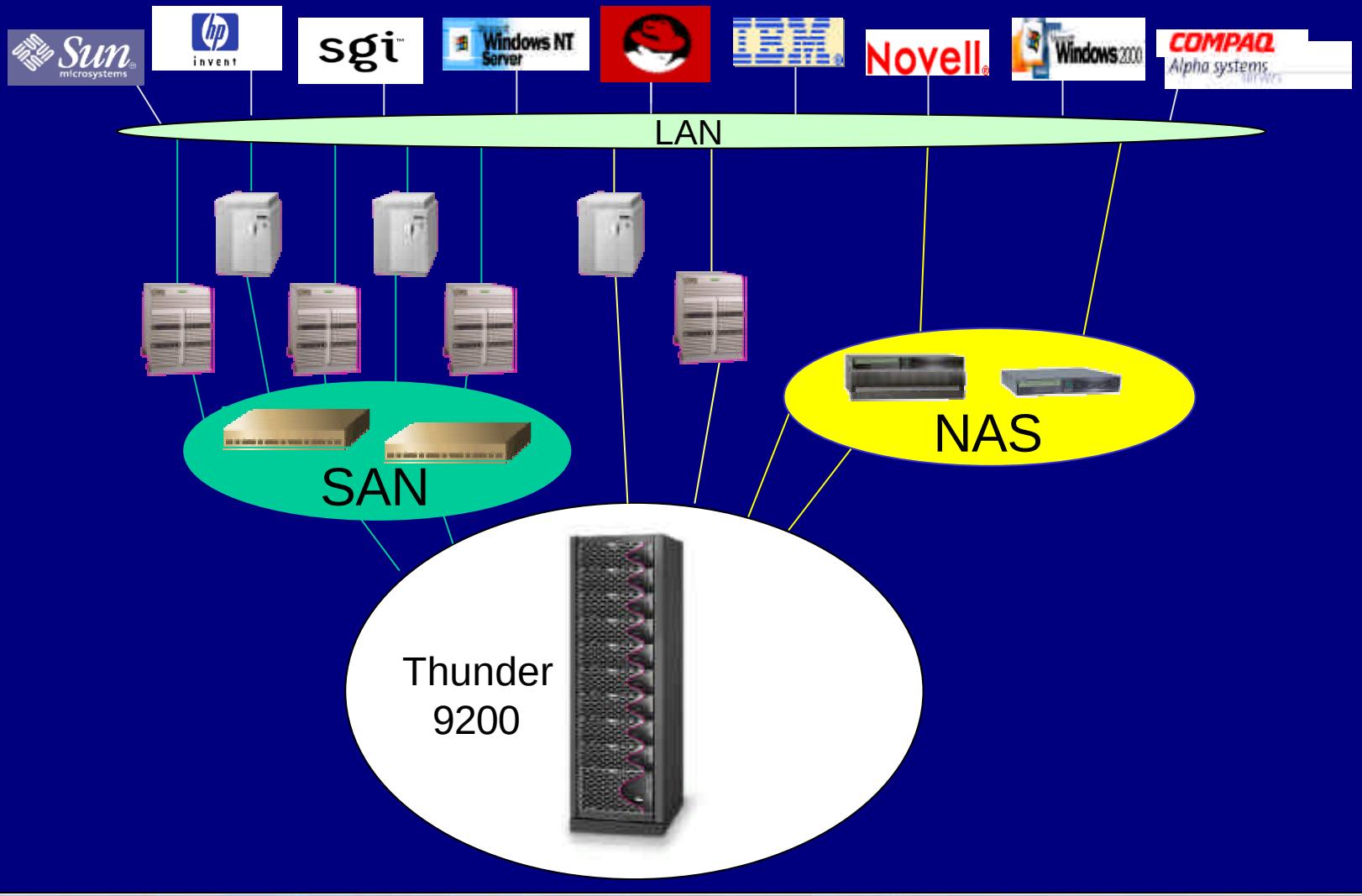
NAS

Where Does NAS Fit ?

- IT Departments
  - Consolidation of hosts with small storage requirements
  - NT storage consolidation
- Enterprise data centers
  - Storage pooling with NAS and SAN
  - Offload file services from general purpose processors
- Internet Data Centers
  - Web hosting front-ends
  - Streaming media applications



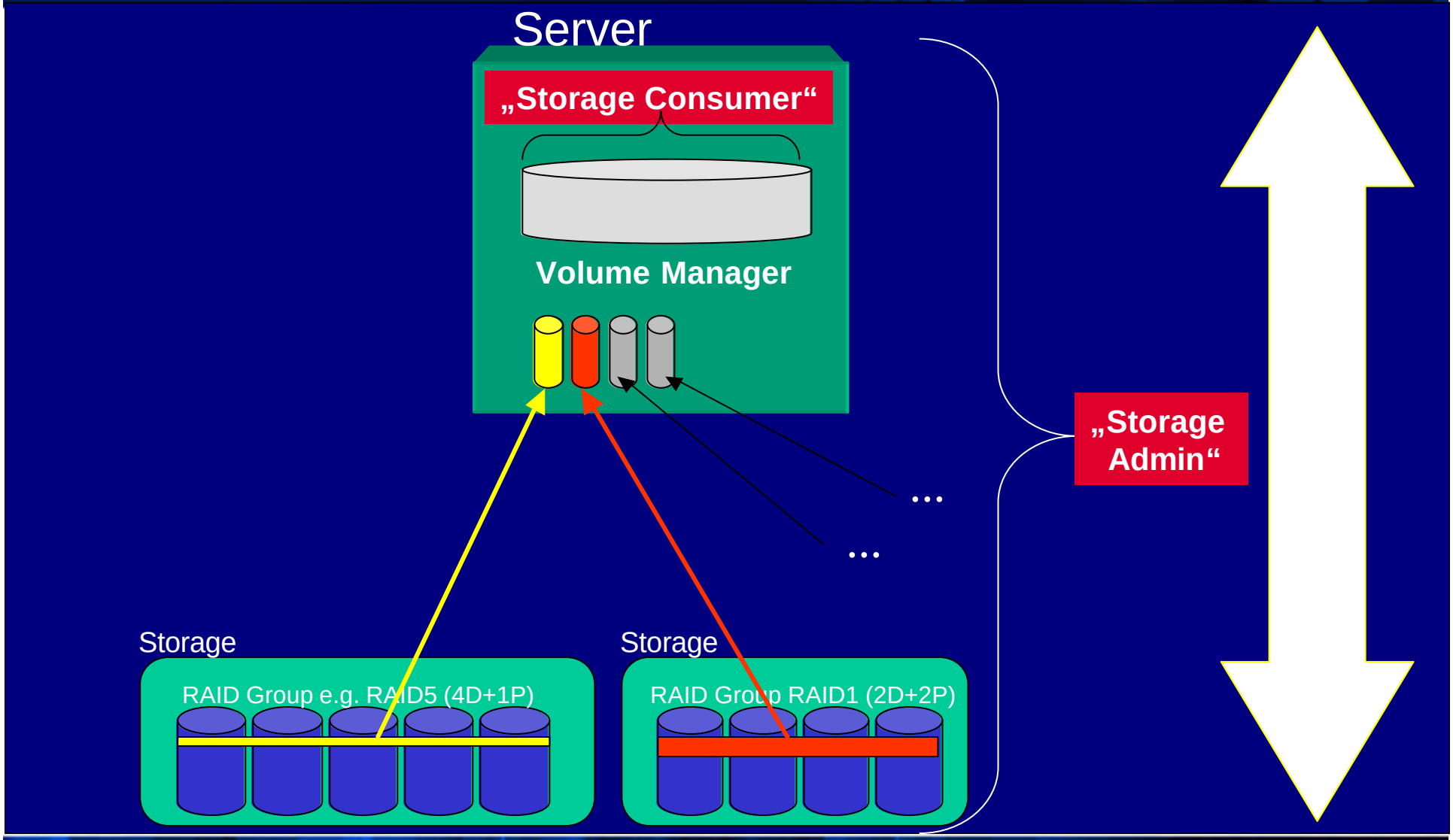
SAN + NAS : Freedom !



Virtualisation Strategy

- We already have virtualisation integrated in our storage solutions!! (but failed to call it that way…)
- Partnering with ISV's for truly open virtualisation solutions
  - Investment in Datacore (SAN Symphony)
  - Potential partnership with other vendors
  - Involved with the development of Veritas' virtualisation solution with Brocade

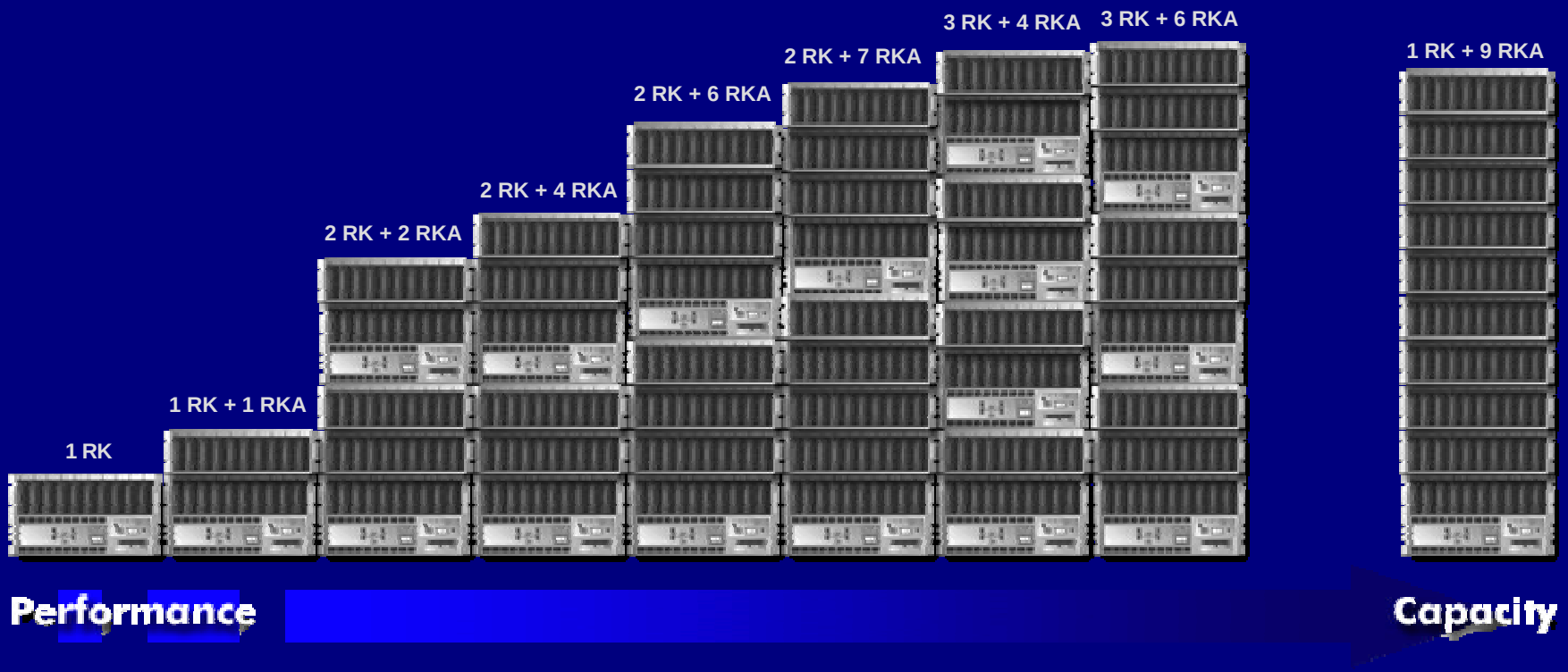
Virtualisation: So what?



Freedom Storage Thunder 9200

- Full Fibre Architecture
- Modular, building-block design for flexible configurations
- Rackmount and Deskside
- From 18GB to 18TB RAW capacity
- High speed18GB*, 36GB*, 72GB and 180GB disk drives (*15.000RPM)
- Up to 5 global dynamic hot spares
- RAID 0, 1, 0+1, 3*, 5 intermixed
- Up to 4GB cache
- Fibre or SCSI host connectivity
- Redundant, hot-swappable components
- Online microcode upgrade, LUN expansion, LUN mapping
- Extensive software offering
- NT/2000, Netware, AIX, Solaris, HP-UX

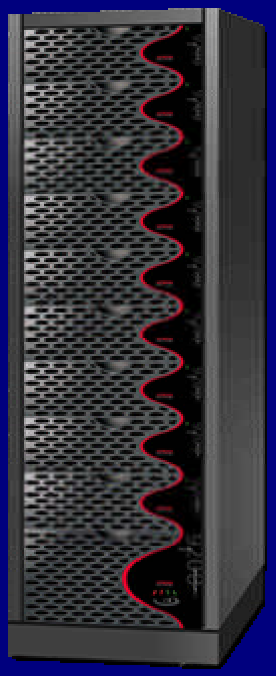
Performance vs. Capacity



Multi platform support

Microsoft Windows

hp-ux



Sun microsystems

AIX

NCR

IBM Dynix/ptx

turbolinux

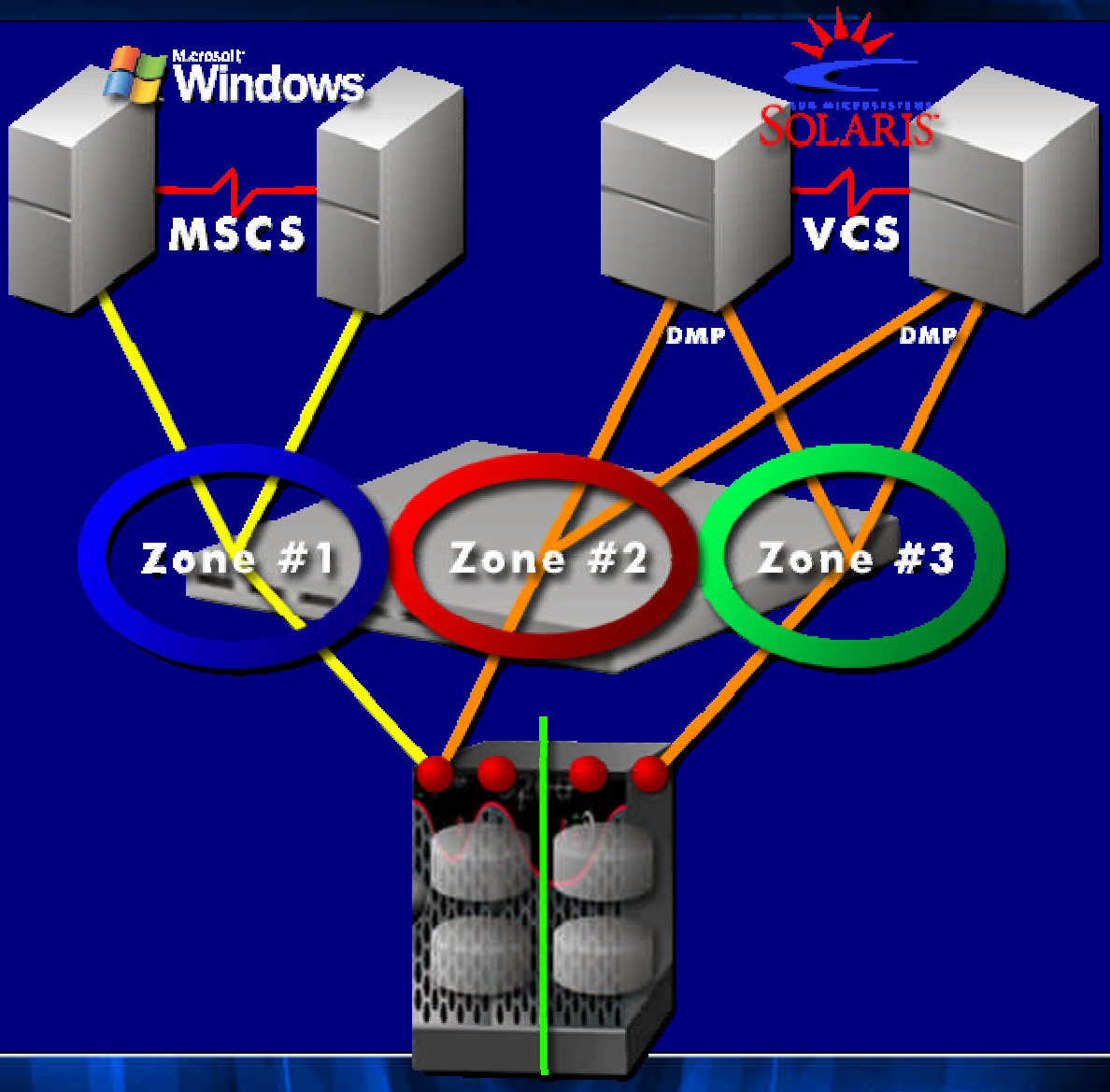
redhat

sgi

NetWare

Compaq Tru64 UNIX

Heterogeneous Connectivity



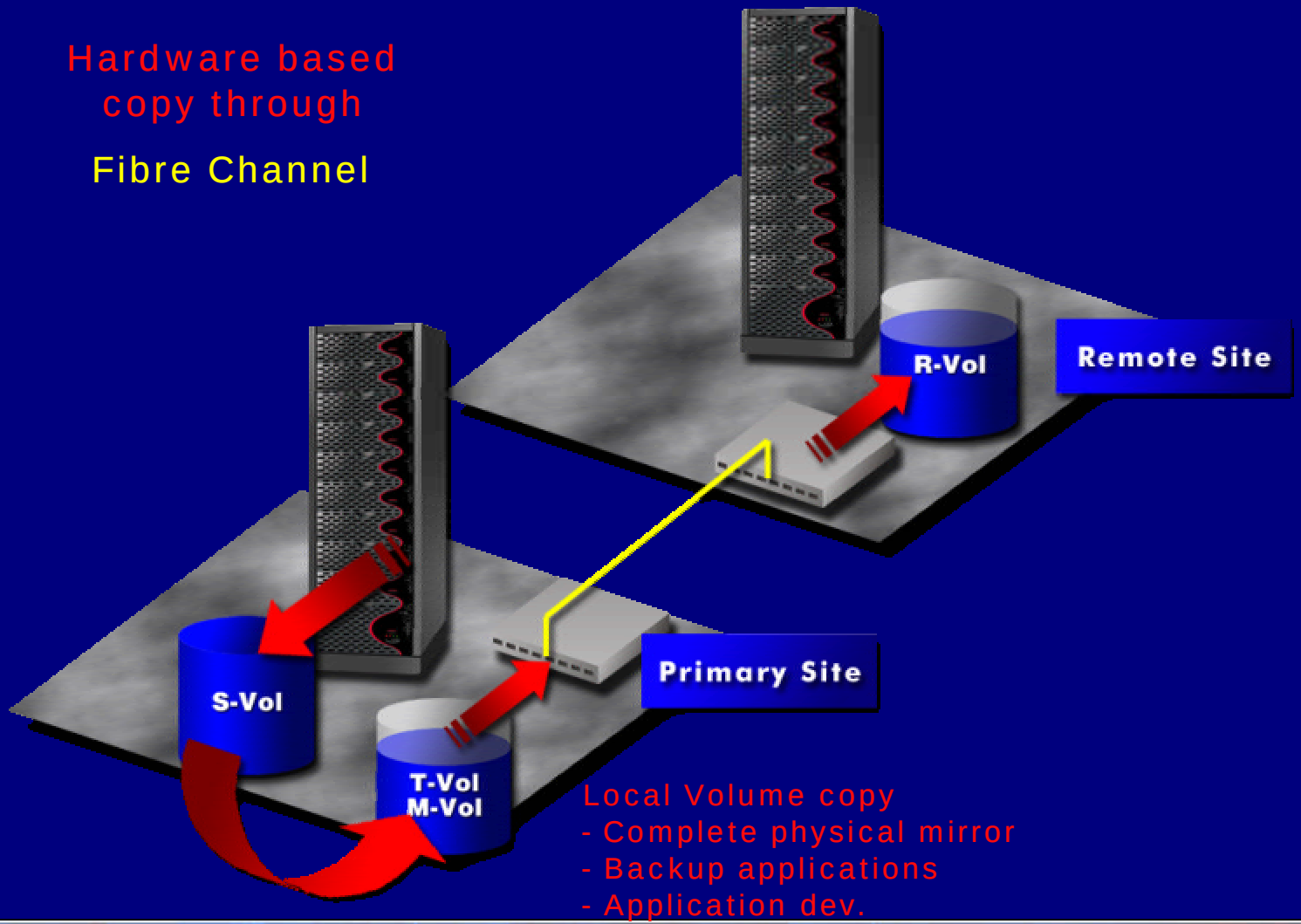
Thunder 9200 Management

- Easy to use Java based GUI:
  - Resource Manager 9200
    - Supports multiple 9200 units
    - Supports Windows, Solaris, Irix, HP/UX
- Web enabled monitoring of critical components
- Internet based Hi-Track call home
- Remote Management via LAN / RS-232 port
- SNMP Compliant
  - Integration in CA Unicenter, HP Openview, Tivoli, etc.

Enterprise Copy Functions

Hardware based copy through

Fibre Channel



Local Volume copy
- Complete physical mirror
- Backup applications
- Application dev.

HITACHI
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DATA SYSTEMS