HP's SAN Strategy

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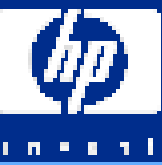
Inventing the future of Storage

Agenda

- The evolution of global networking & its effect on storage
- Enabling storage growth
- Attributes & characteristics of network storage
- Hp's SAN strategy
- HP solutions
- HP SAN foundation software
- Questions

global.networking

1998:
the volume of Email in the US surpassed hand delivered mail!

50M US computers connected to the WEB

The % of Americans online has risen from 14% to 41% in three years

Online Stores: More than 25% of transactions never go through

2002:
the # of computers outside the US will more than triple

2003:
> 1M e-business websites

1998:
Business to business e-commerce = $43 Billion

2002:
$1Trillion in goods & services will be traded on the internet

2003:
Consumer-only e-commerce = $75B

1999:
$24 Billion in e-commerce, with 700K websites

2003:
Business-business e-commerce = $1.3 trillion

hp property

explosive.digital.storage.growth
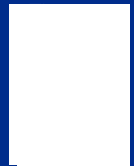
Digital Video

Digital Cameras

MP3

Text-speech

Digital Sources

Digital Supply Chain

0
1
0
1
0

1
1

(7.5 TB Yr)
(4TB Yr)
(TB Yr)
(yr)

hp property

enabling.storage.growth

Digital Video

Digital Cameras

MP3
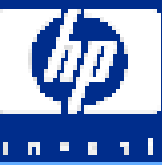
Text-speech

Applications

Web Server

Disc Arrays

Tape Libraries

hp property
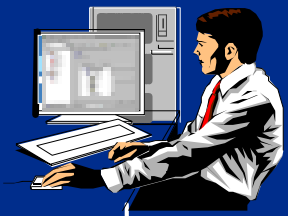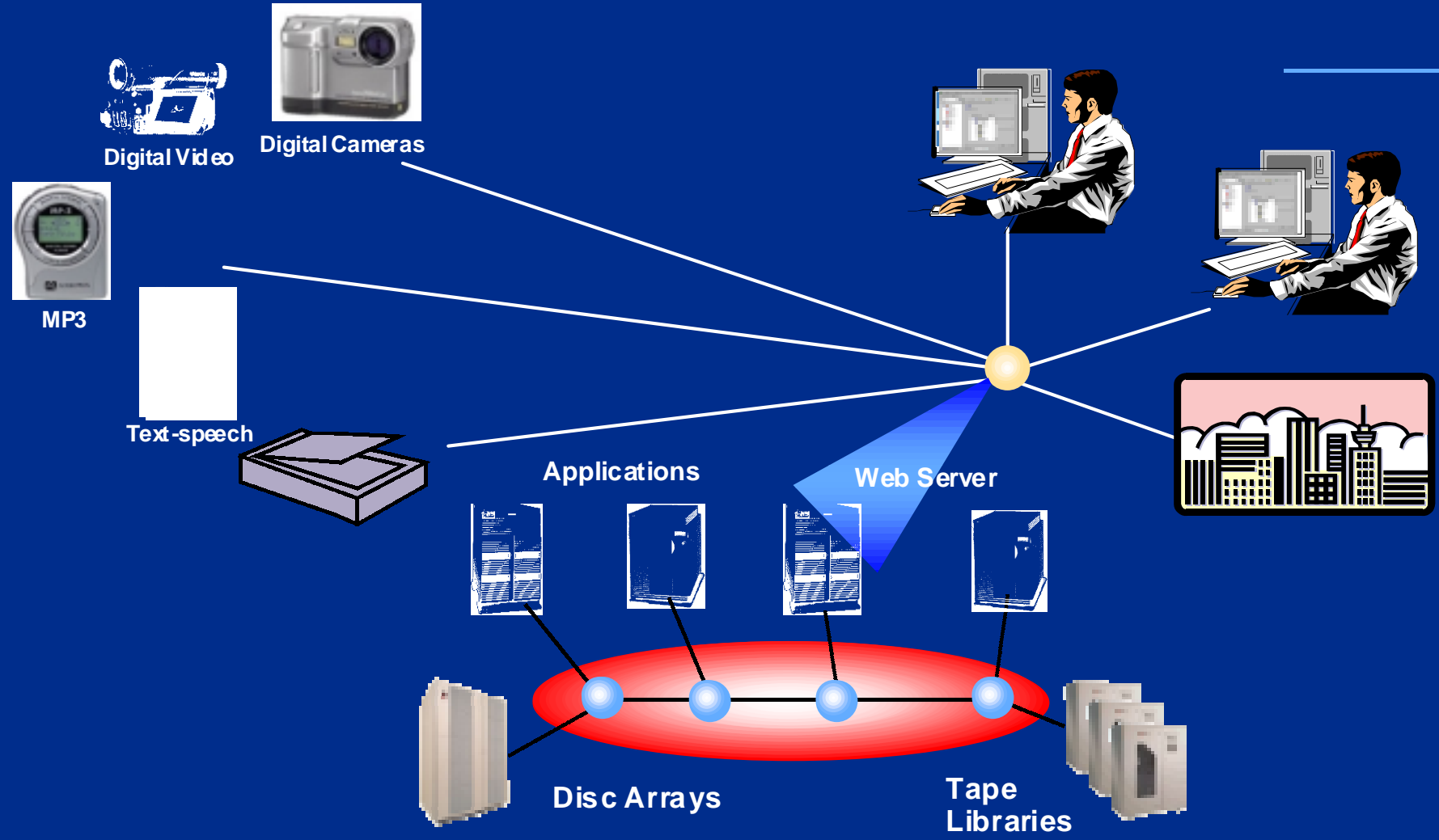
better.managing.the.heap

Will my storage environment scale?

- Planned downtime for reconfiguration
- Storage is private to server

What are the cost drivers?

- Poor management of capacity
  - Spares
  - Copies

Will I have the resources?

- Staff efficiency out of balance with growth & availability of staff

Benefits of SANs

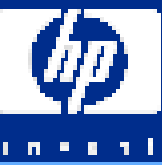- Storage pools
- SAN backup

- Pooled spares
- Shared files

- Order of magnitude improvement in management efficiency

Application	Industry	Avg. Hourly Cost
Brokerage	Finance	$6,450,000
Credit Card Auth.	Finance	$2,600,000
Home Shopping (TV)	Retail	$113,000
Airline Reservations	Transportation	$89,500
Tele-ticket sales	Media	$69,000
Package Shipping	Transportation	$28,000

20-50% Spares
??? Copies

Environment	Efficiency (GB/person/yr)
Highly Distributed	30-100
Centralized.	100-500
SAN	500-1000+

hp property

attributes.of.san.storage

Clients

Local Area Network

Applications **Web Server**

Storage Area Network

Disc Array   **Tape Library**
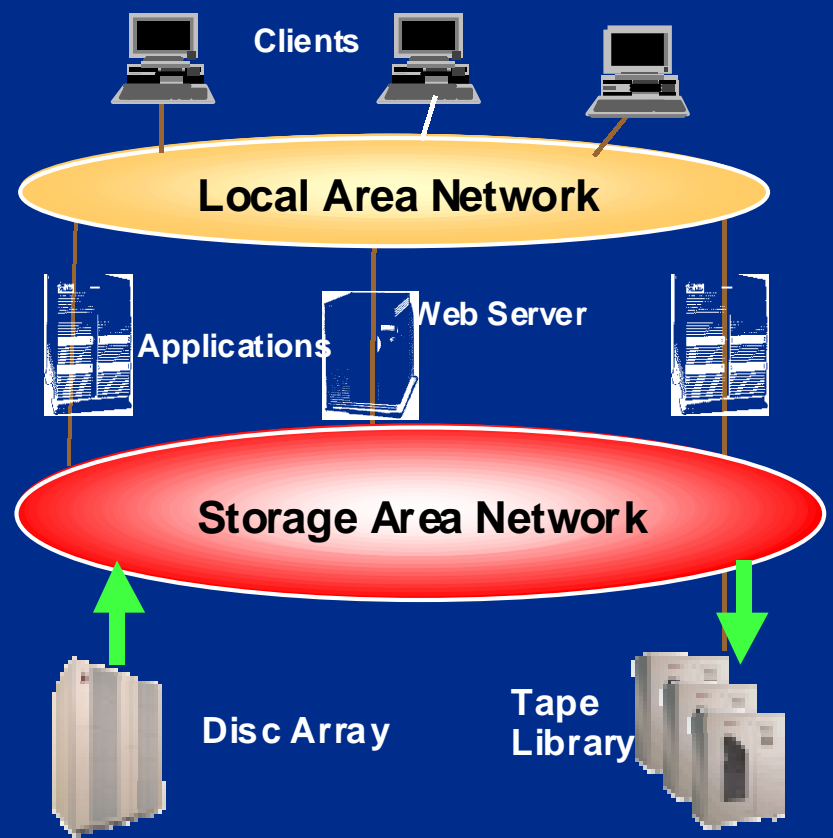
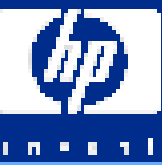| Attribute	Feature	SAN provides
Persistent	Protects itself	Transparent backup
Zero Impedance	Infinite Bandwidth	Multi-path-multi pipe
Elastic	Expands itself	Policy driven volume management
Mobile	Moves itself	Policy driven data movement
Innocuous	Plug-n-play	Hot configuration
Visible	Public	Asset and data sharing, mirroring
Safe	Secure	Secure access methods
Always On	Available & dependable	Hot configuration, redundancy, replication, multi-path and pipe
Economic	Efficient	Maximize pooling, minimize spares & copies
Automated	Labor Free	Policy driven and self-managed

hp property
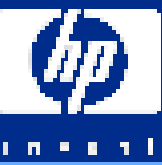
characteristics.of.a.san
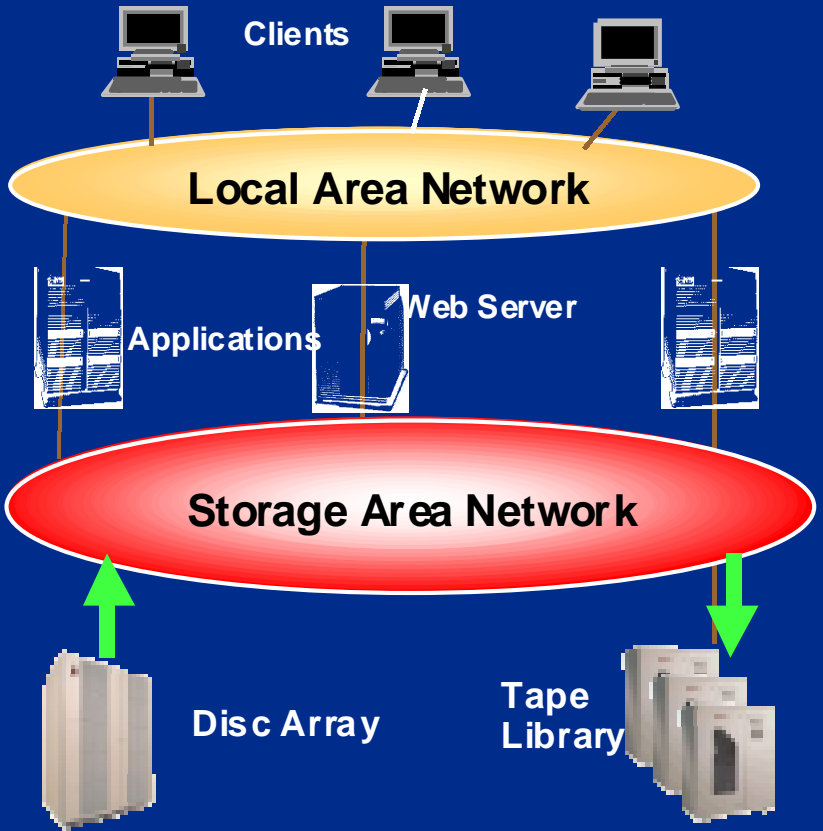
Characteristic	Capability
Open	Multiple-vendor Multiple- product
Interoperable	Multiple-OS Multiple-storage types
Manageable	Well behaved heterogeneity

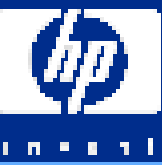**Clients**

Local Area Network

Applications

Web Server

Storage Area Network

Disc Array

Tape Library

the.interoperability.challenge

Applications
Continuum

Openness
Continuum

Business Application	Messaging	Order Entry		Imaging
		Data Bases	Filers	
Storage Application	Backup		Remote management	
Storage Resource Management	Online Volume Management LUN Management	Path Management	Removable Volume Management Device Management	
OS	WIN	Solaris	LINUX	AIX
Host				
HBA				
SAN Fabric				
Storage				

hp's.san.strategy

Clients

Local Area Network

Applications **Web Server**

Storage Area Network

Disk Array

Tape Library

Systems & Network Admin
Compatible with all frameworks & systems

SAN Admin & Data Management
Manage the storage independent of the infrastructure, device and vendor

Provide Storage & Infrastructure
World class HP storage & partners
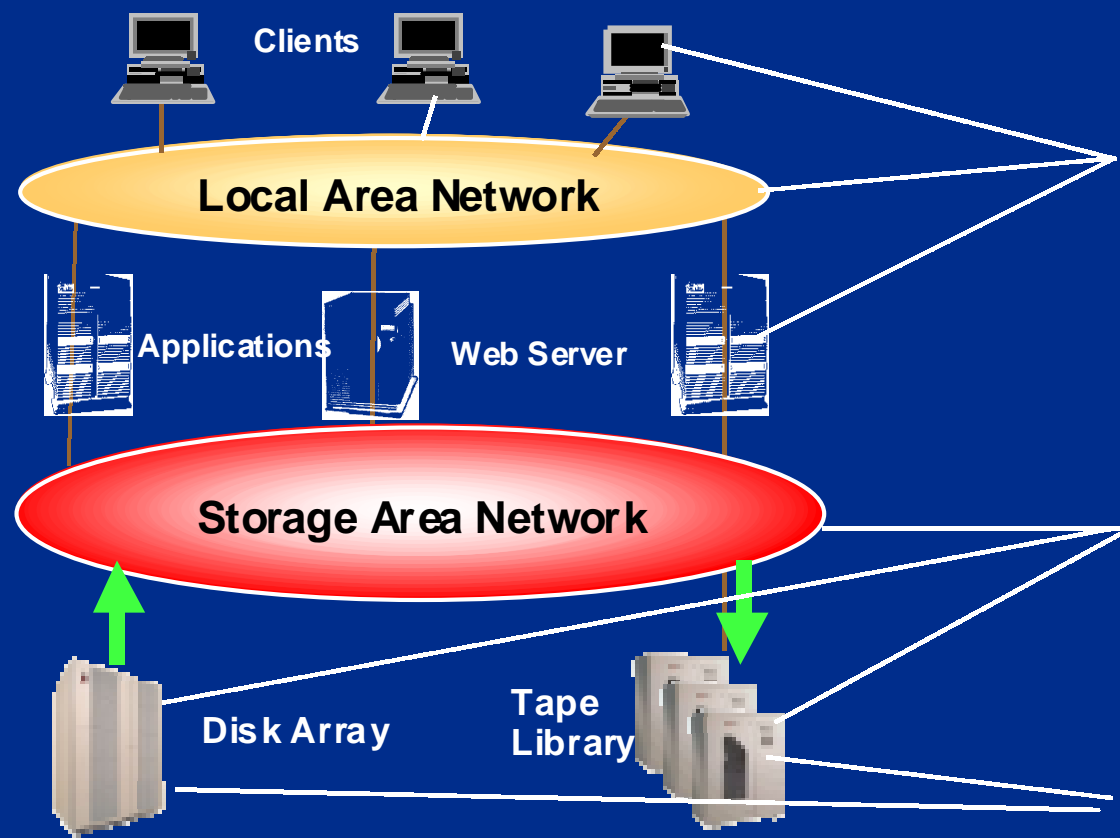
hp property

hp.san.solutions

100 TB per Storage administrator **10000**

1 TB per Storage administrator **1000**

100's GB per Storage administrator **100**

SAN 1

SAN Data Protection

•SAN Backup
  •Less Spare Assets
  •Faster restores
  •Distance

SAN 2

SAN Asset Management

•Hot Scalable Tape & Disk Assets
  •Less Spares
  •Less Downtime
  •Distance

SAN 3

SAN Data Placement

•Data Set Movement & Copy
  • DR, Hot sites
  • Remote & Local Protection
  • Ultra Fast Restores
  • Distance

SAN 4

SAN Storage Utilities

•Total Storage Network Management
  •Capacity
  •Fault
  •Resource

SAN 5

SAN Data Sharing

•Fewer Copies
•Distance

hp property
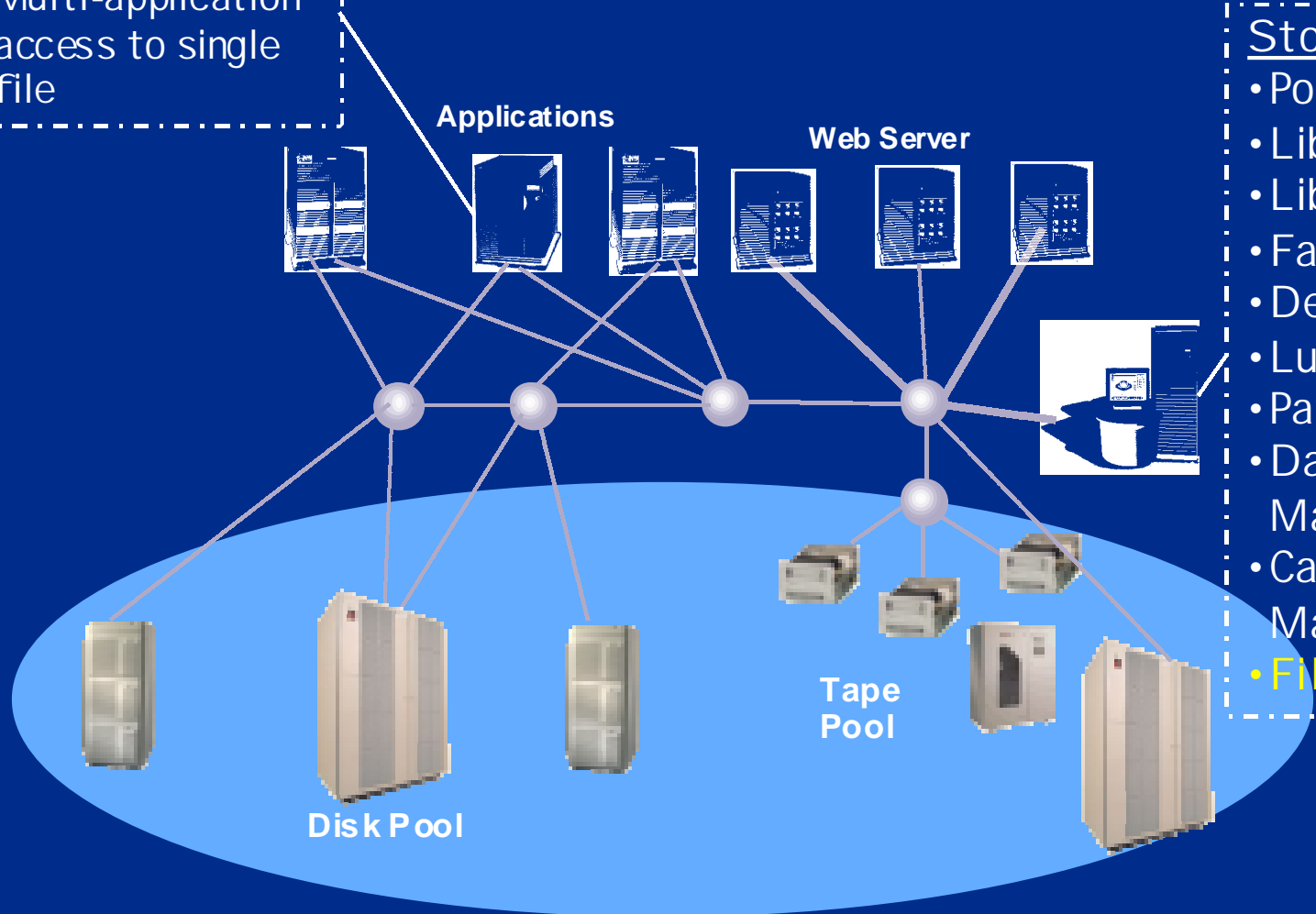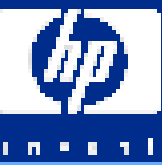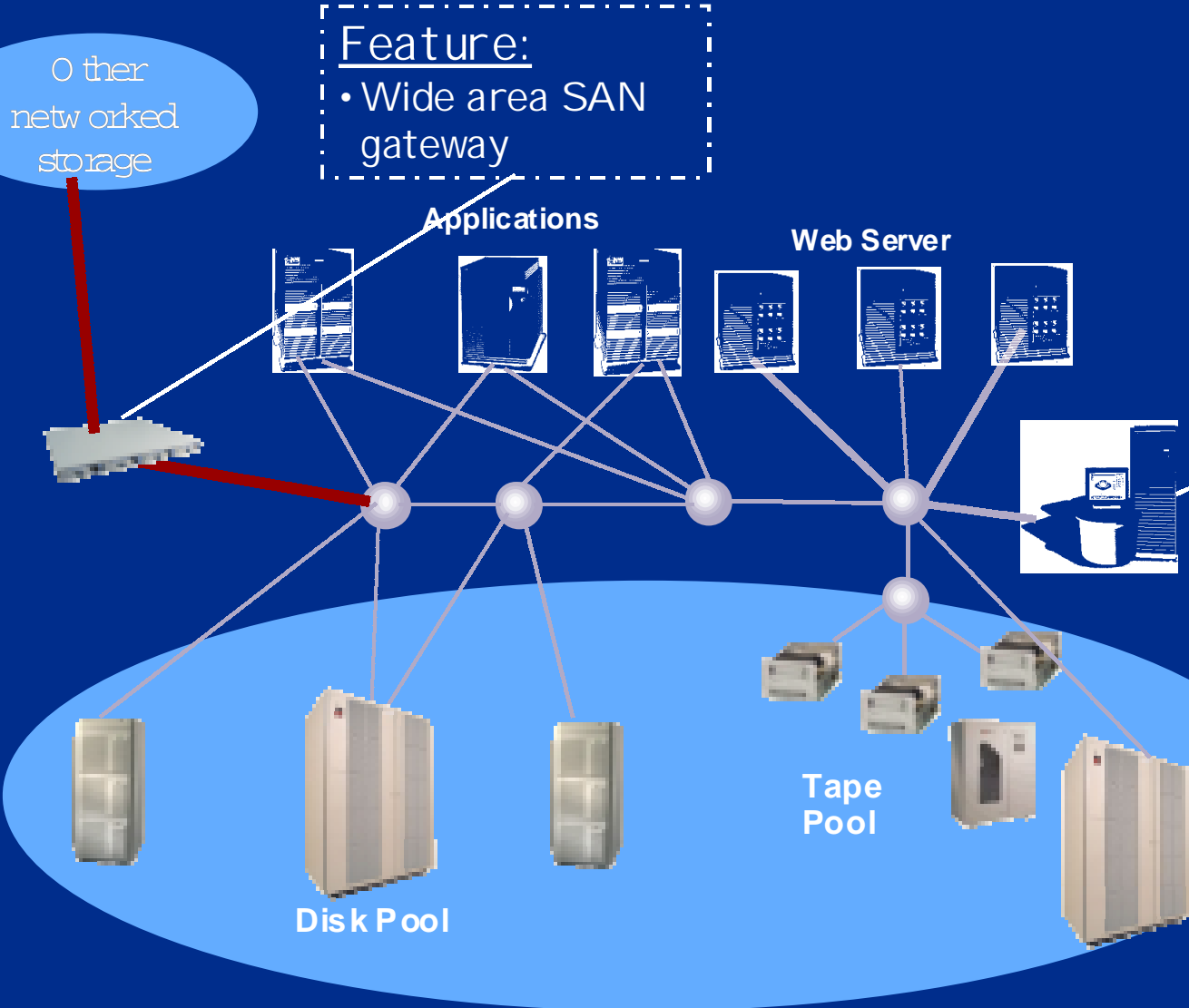
SAN 1: Data Protection Blueprint
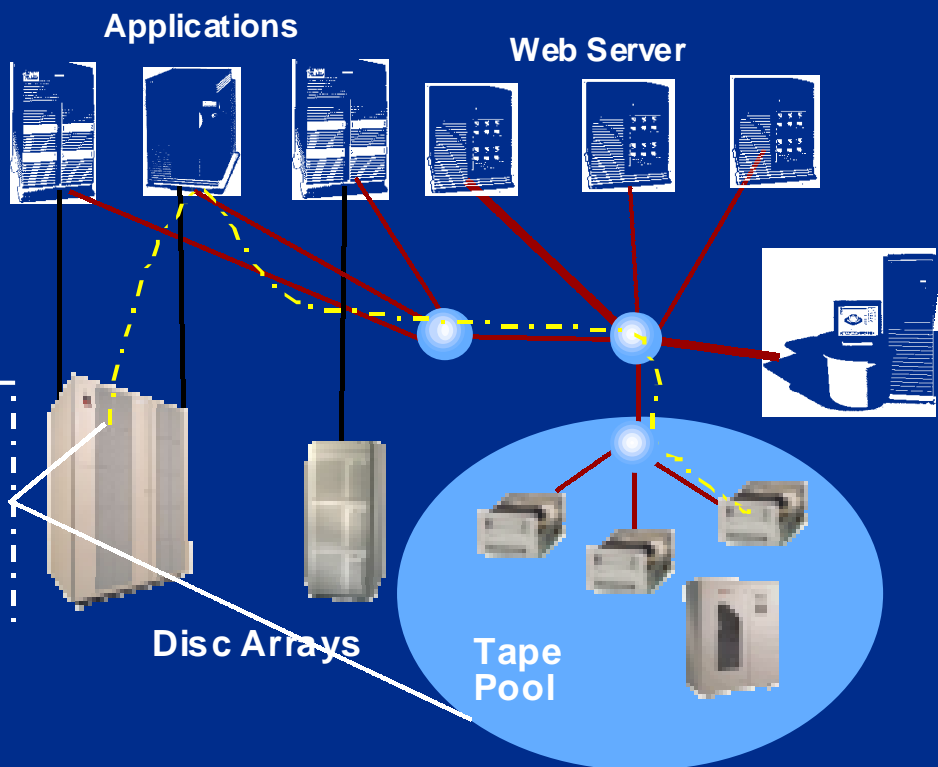
Applications

Web Server

Storage Applications:
- Popular backup apps.
- Library Server
- Library Management
- Fabric Management
- Device Management

Feature:
- SAN data movement
- Tape drive Pooling

Disc Arrays

Tape Pool
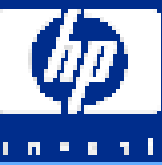
SAN 2: Asset Management Blueprint
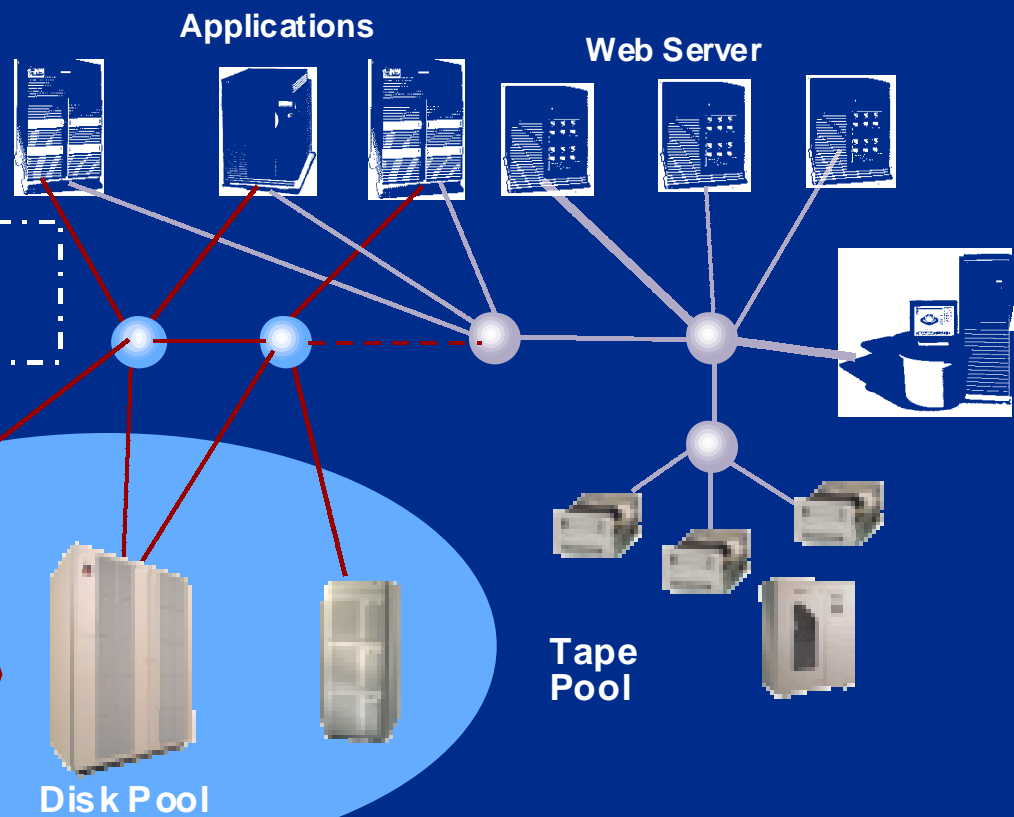
Applications

Web Server

Storage Applications:
- Popular backup apps.
- Library Server
- Library Management
- Fabric Management
- Device Management
- Lun Management
- Path Management

Feature:
- Hot disk pooling

Disk Pool

Tape Pool

SAN 3: Data Placement Blueprint
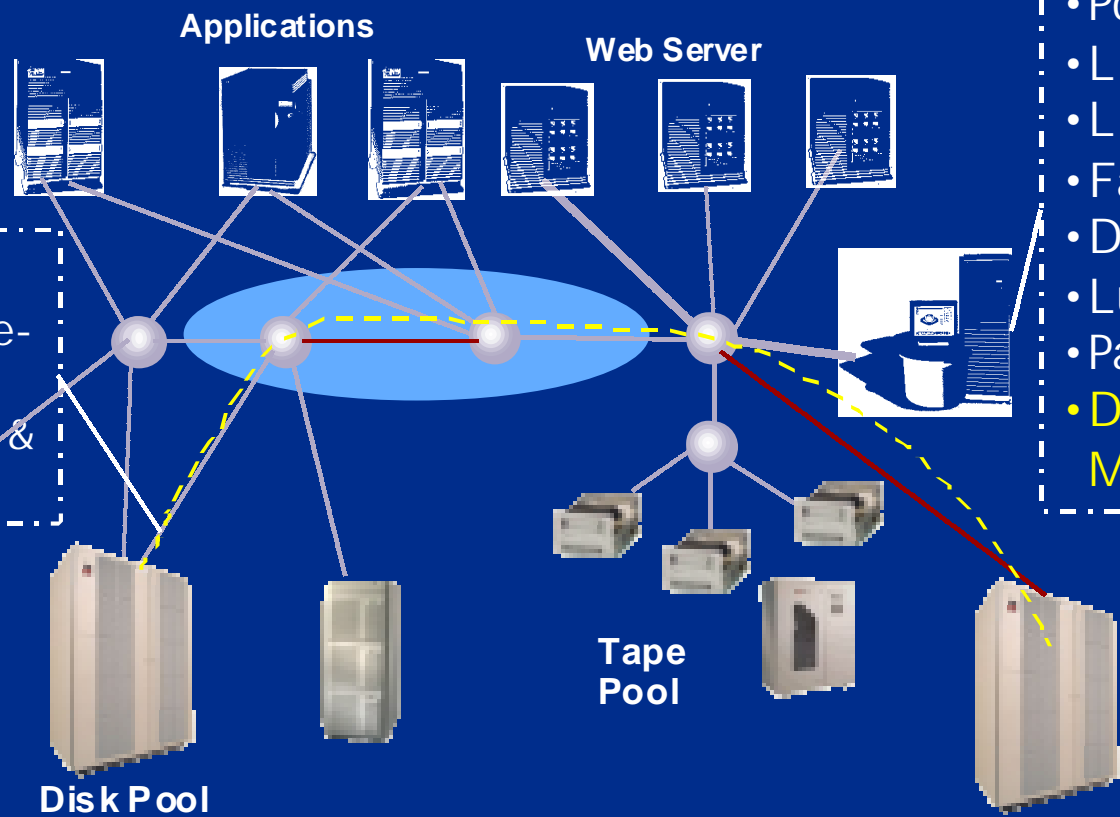
Applications

Web Server

Feature:
- Integrated Tape-disk San
- Peer-peer move & copy

Tape Pool

Disk Pool

SAN 4: Storage Utilities

Applications

Web Server
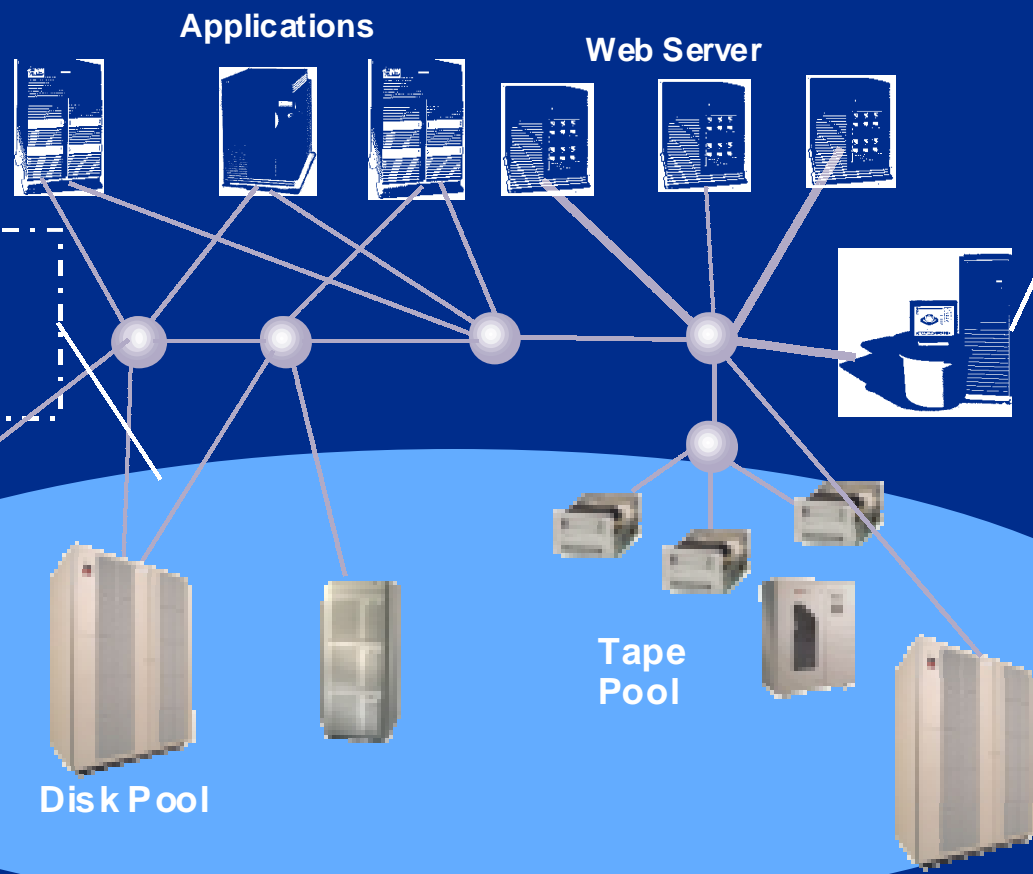
Feature:
- Policy based elastic storage

Tape Pool

Disk Pool

hp property

SAN 5: File Sharing

Feature:
- Multi-application access to single file

Storage Applications:
- Popular backup apps.
- Library Server
- Library Management
- Fabric Management
- Device Management
- Lun Management
- Path Management
- Data Movement Management
- Capacity Management
- File Sharing

Applications

Web Server

Disk Pool

Tape Pool

hp property

SAN n: Extended Range

Other networked storage

Feature:
• Wide area SAN gateway

Applications

Web Server
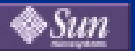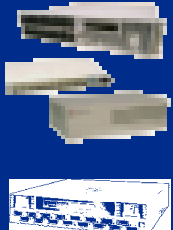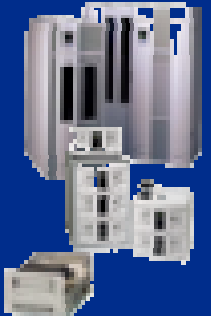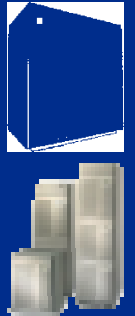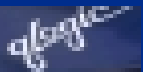
Storage Applications:
• Popular backup apps.
• Library Server
• Library Management
• Fabric Management
• Device Management
• Lun Management
• Path Management
• Data Movement Management
• Capacity Management
• File Sharing
• Remote Access Mgr.

Tape Pool

Disk Pool

open.means.choice

Host	HBA	Fabric	Automation	Disk	Software
HP-UX					
Solaris					Openview
NT					SAN ManagerDM
AIX					SAN ManagerLM
Linux					Omniback
Partners & Compatibility	jni, EMULEX, Agilent, qlogic	ANCOR, BROCADE	STORAGETEK	HITACHI, EMC, Sun	VERITAS, LEGATO, Tivoli

san.management.foundation

Clients

Local Area Network

Applications

Web Server

Storage Area Network

Disc Array

Tape Library

Systems & Network Admin

▷ OV Network Node Manager

Storage Admin
HP SureStore E
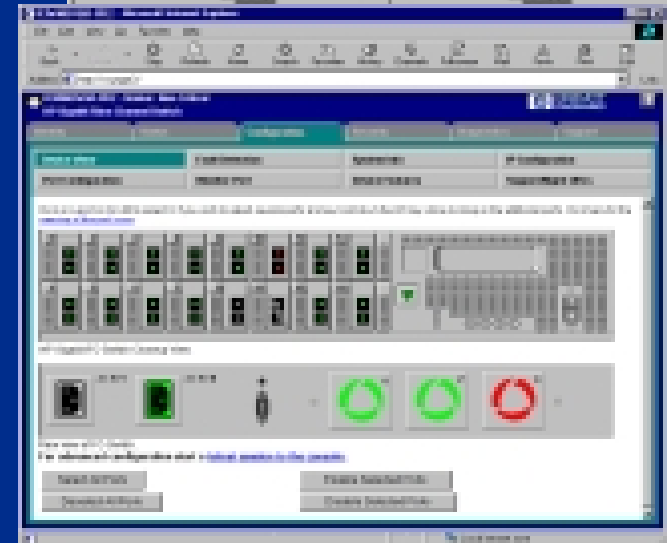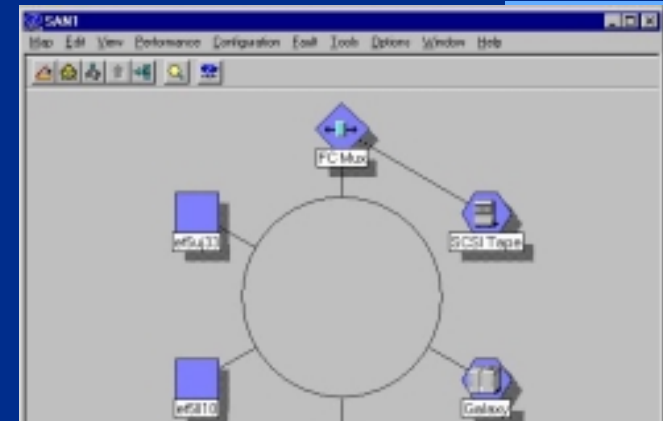▷ SAN Manager Device Mgmt
▷ SAN Manager LUN Mgmt
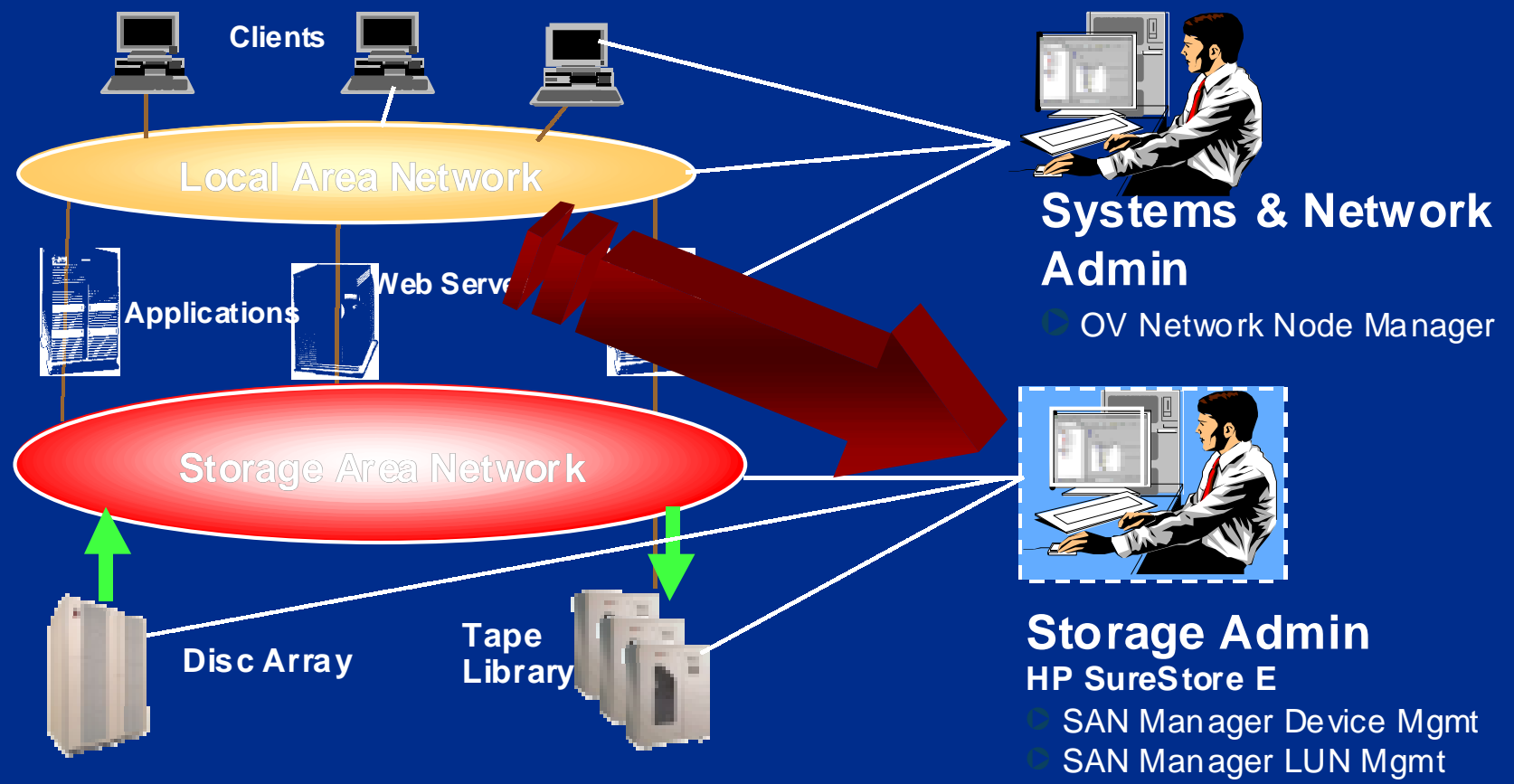
HP SAN Manager Device Mgmt.

Benefits

- **Reduces the complexity** of managing high availability data resources.
- **Improves availability** by centrally managing and monitoring critical data resources.
- **Reduces IT resource costs** by providing consistency in the management of data center storage devices

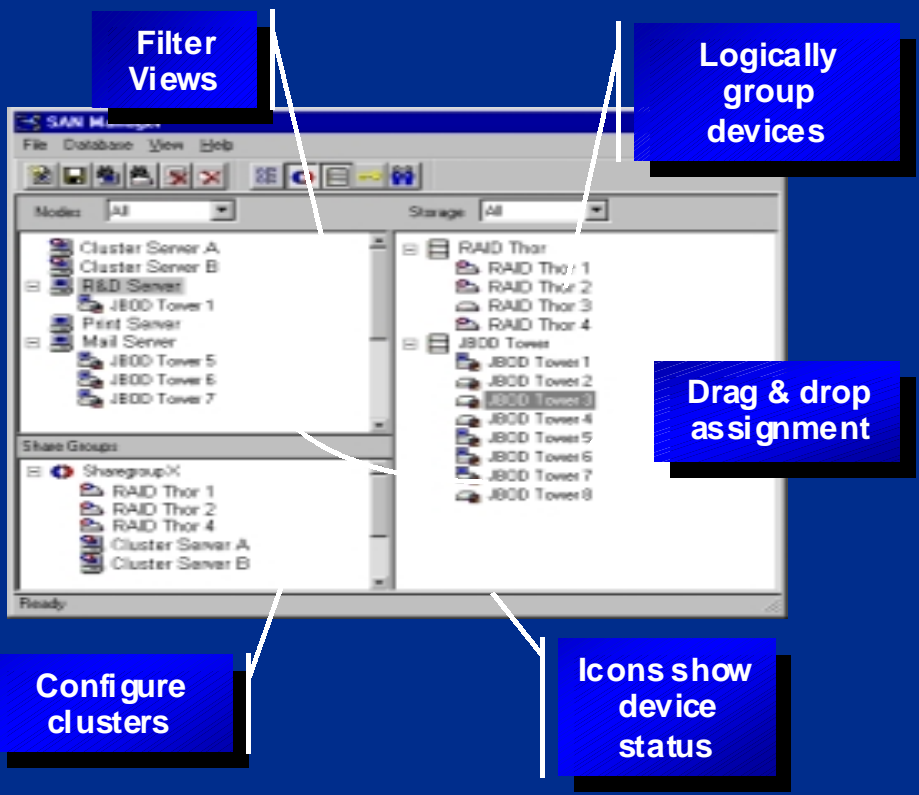Features

- **Discover, map** and create a topology for the connected storage devices
- **Monitoring and online configuration** of SAN devices through web browser technology
- Based on market-leading **HP OpenView Network Node Manager** technology
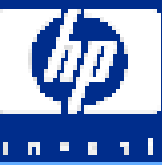
HP SAN Manager LUN Mgmt.

Filter Views

Logically group devices

Drag & drop assignment

Configure clusters

Icons show device status

Features

Hardware independent, Open system, Centralized SAN management solution, with an Intuitive Drag & Drop GUI, and Storage configuration without reboots
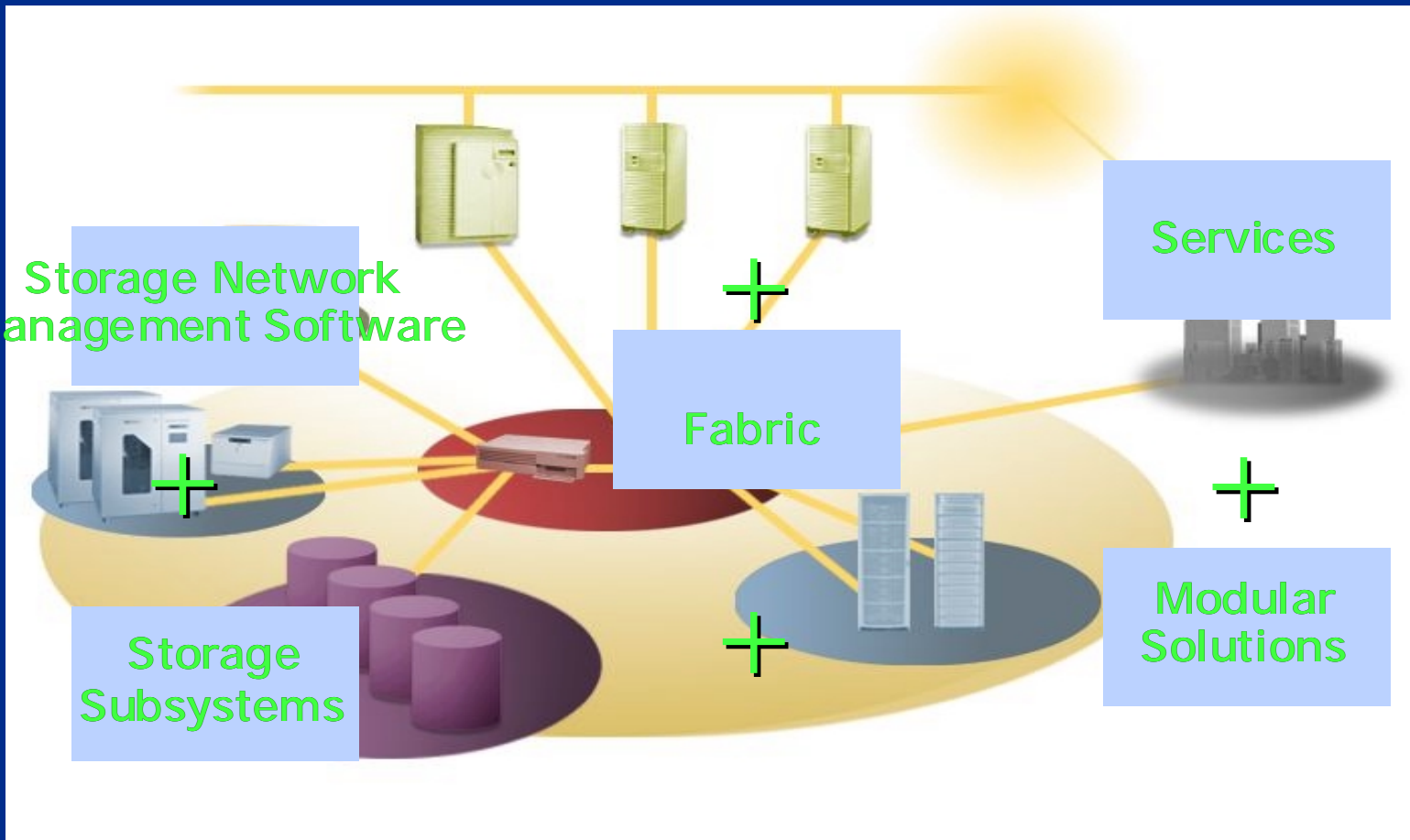
Benefits

Secures SAN storage assets, Increases system availability and Dramatically decreases overall storage management cost

Equation is our vision for......

A Simpler, Better Behaved, Scalable Network Storage Environment

Storage Network Management Software

Services

Fabric

Storage Subsystems

Modular Solutions

Inventing the future of storage!