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# Planning a successful Exchange-2000 deployment in the Enterprise

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# Moving to Exchange 2000 – Phased Approach

# 1. Understand Exchange 2000

## A major technology update

- SMTP backbone architecture, web storage system

## Availability, scalability, reliability

- Partitioned message store, active-active clustering

## Closer Windows 2000 integration

- Active Directory replaces Exchange Directory

## Platform for new types of services

- Instant Messaging, Conferencing
- Unified Messaging
- Web-based collaboration (OWA, XML)
- Hosted messaging (xSP)

## Gather information

- www.microsoft.com/exchange
- www.hp.com/hps/msexchange/learn_white.htm

## Educate your staff

- Microsoft
  - Tech Ed
  - Exchange Conference
- Product trainings
- Industry Analysts
  - Gartner conferences

## Learn from experienced partners

- Organize focused meetings or workshops
  - HP Exchange 2000 Discovery Workshop

## Set up your in-house test environment

- Get support from Microsoft & partners (like HP)

# Exchange-2000


**A new technology generation**

Active Directory replaces the Directory Services

- The GAL is replaced by the GC

SMTP becomes the routing engine

Partitioning the information store

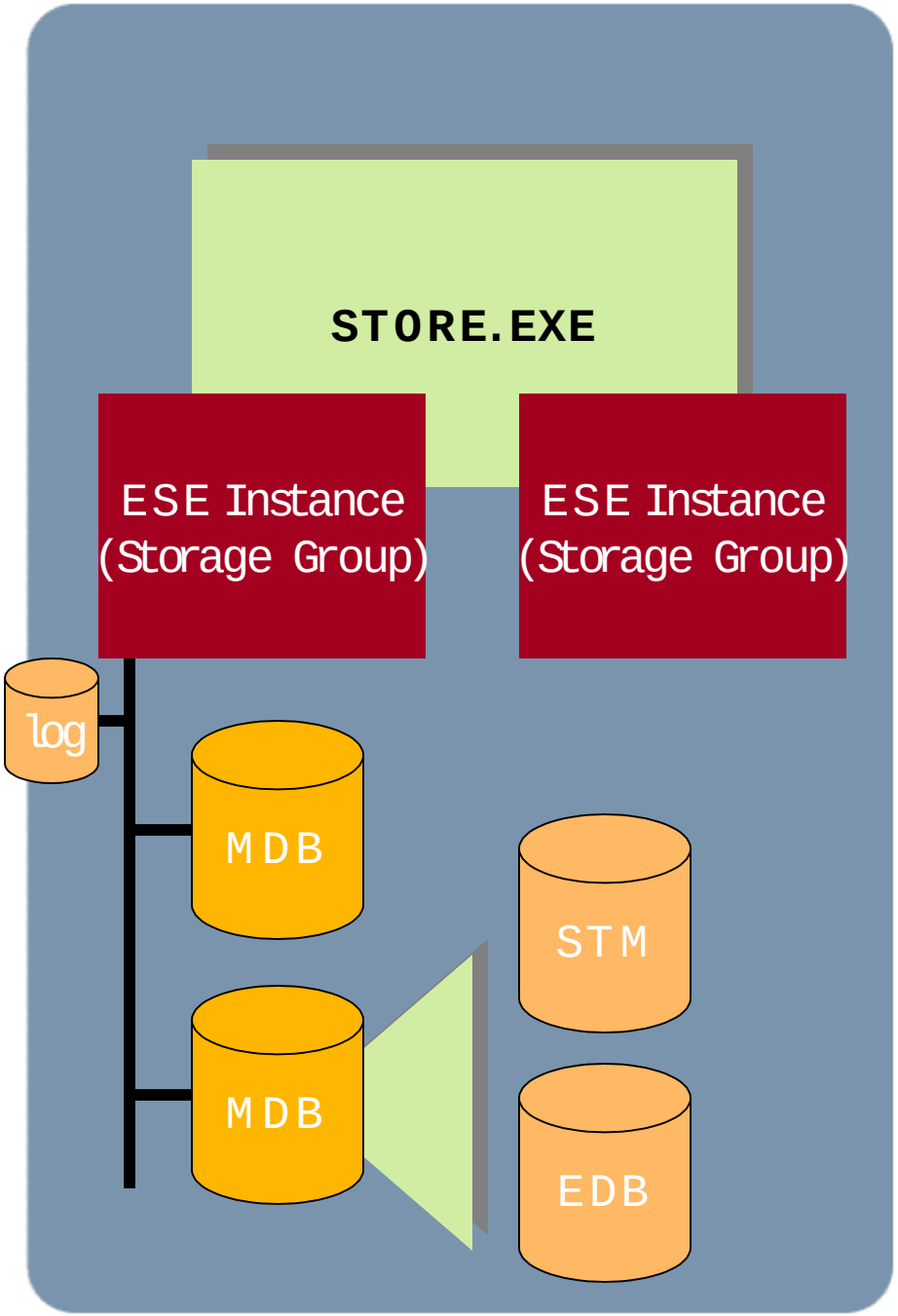
URL everywhere to access the Web Store

Events everywhere

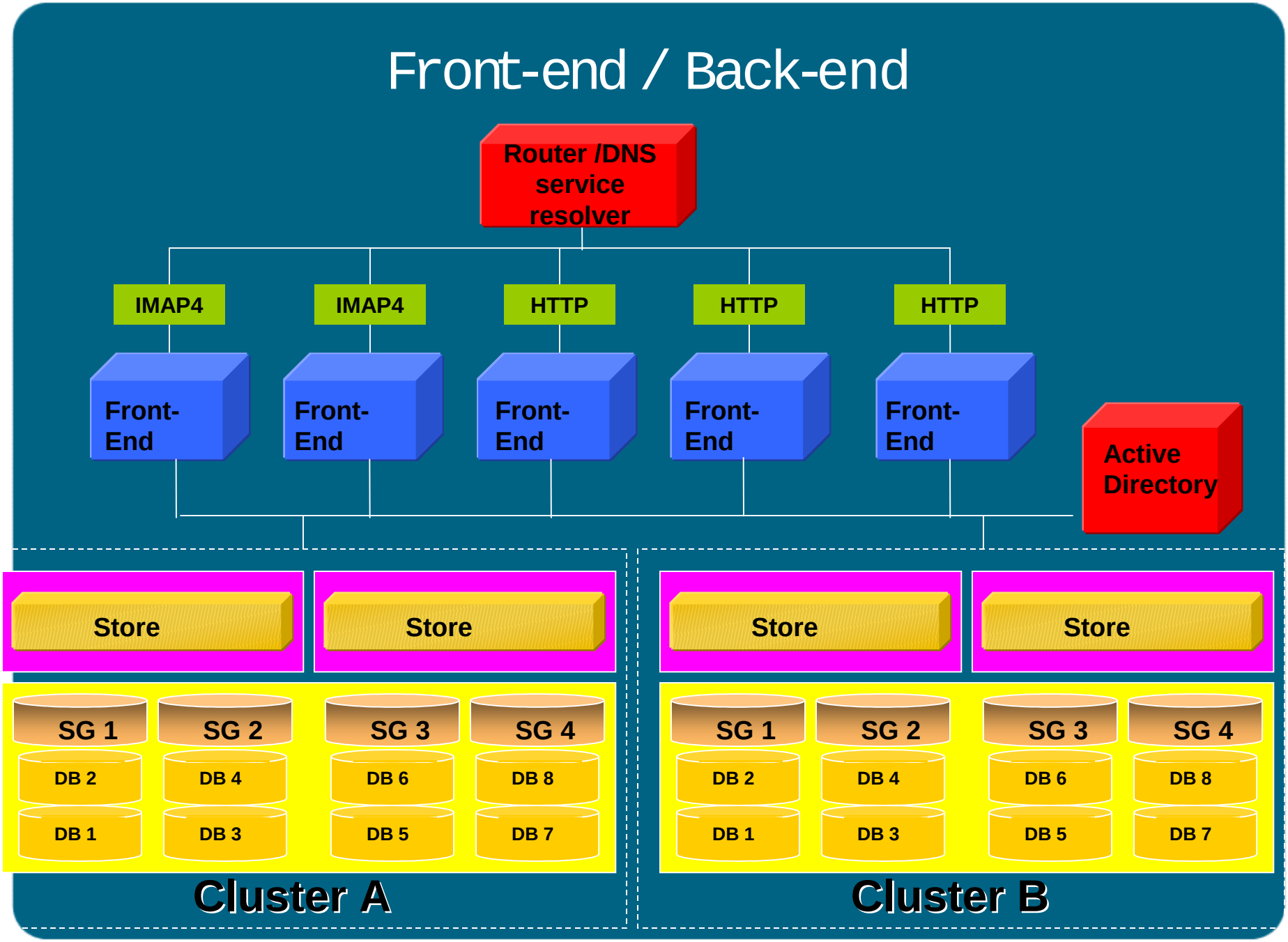
- Transport
- Store

## Exchange-2000 Storage Management

- One Store process per server
- Up to 4 ESE instance per store process
- Shared transaction logs
- Up to 5 MDB per ESE instance
- A MDB consist in a STM and EDB file
  - STM: Streaming Internet Content
  - EDB: MAPI and Properties



# Front-end / Back-end



# Exchange 2000 Clustering

Designed for *n*-node clustering

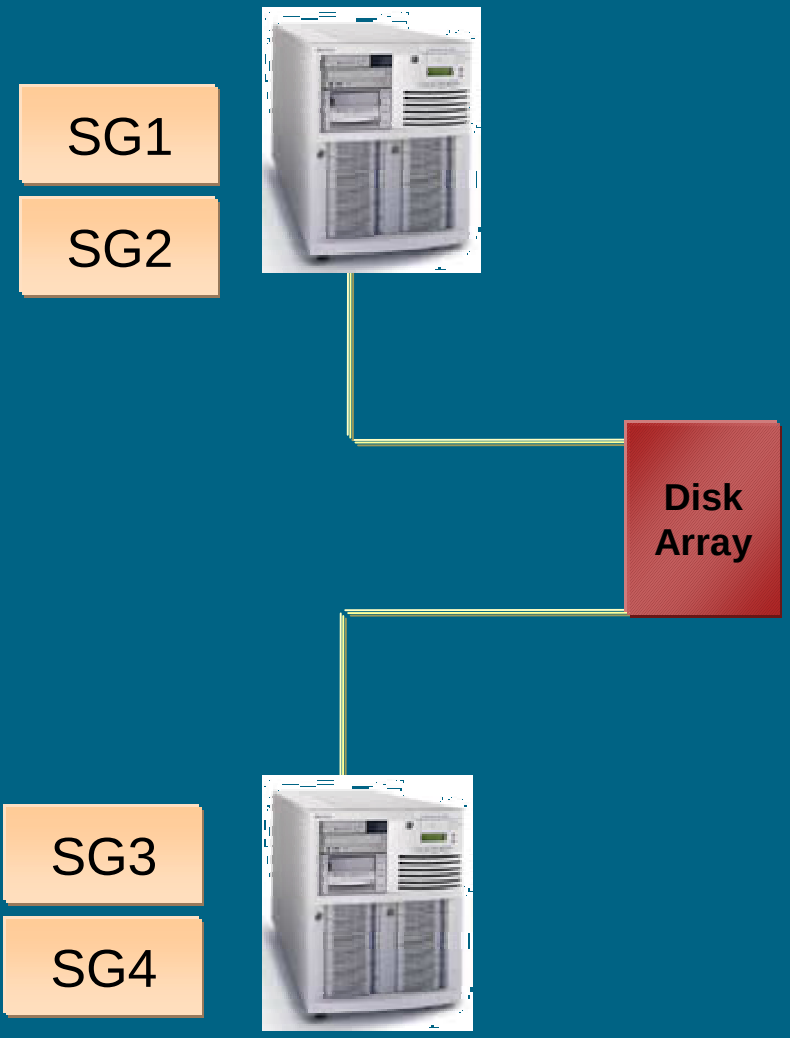
Clustering is Active/Active

EVS (Exchange Virtual Server) is the unit of failover

All major components act as cluster resources

- HTTP, IMAP, SMTP, Storage Group, etc.

# Clustering and Storage
# Active/Active (2 node only)



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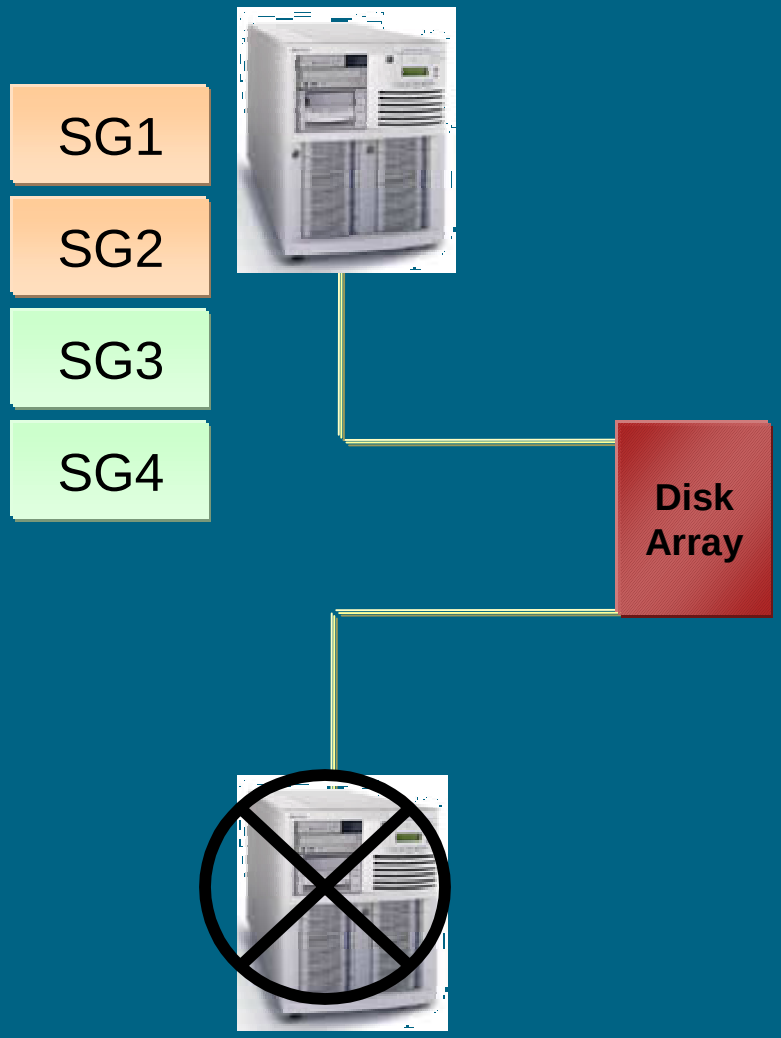
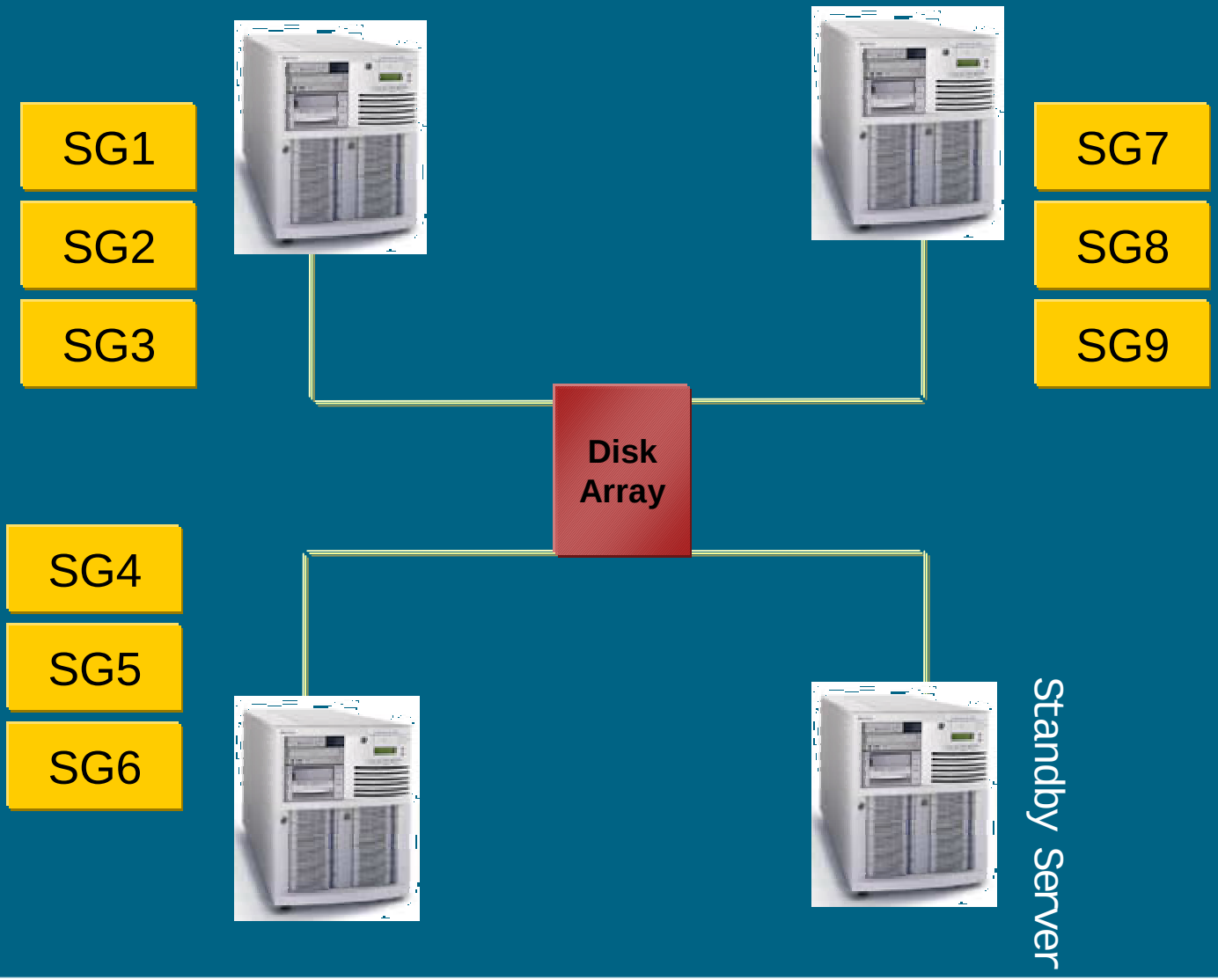
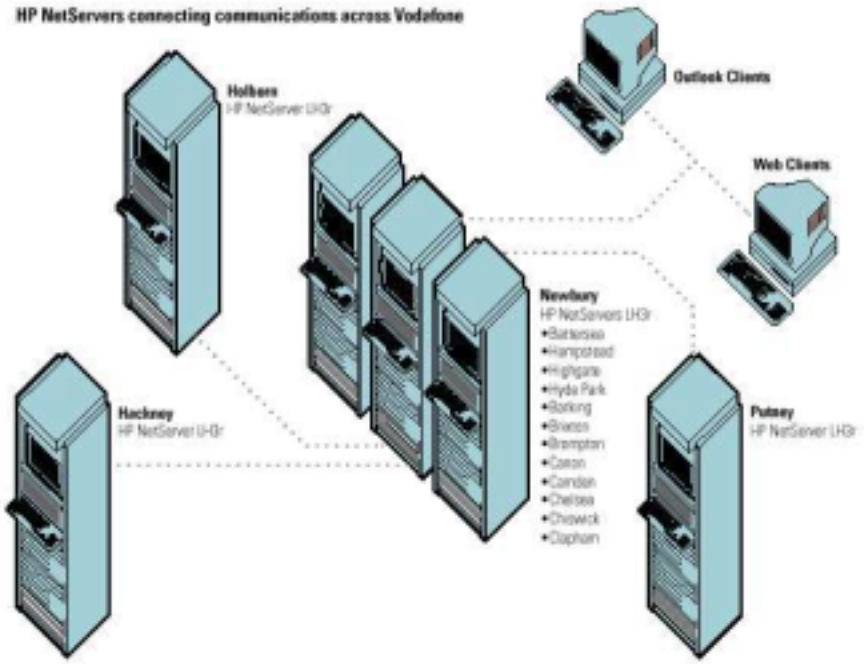
# Active/Active (2 node only)



# Clustering and Storage active/passive (n+1)



# 2. Assess your current messaging environment

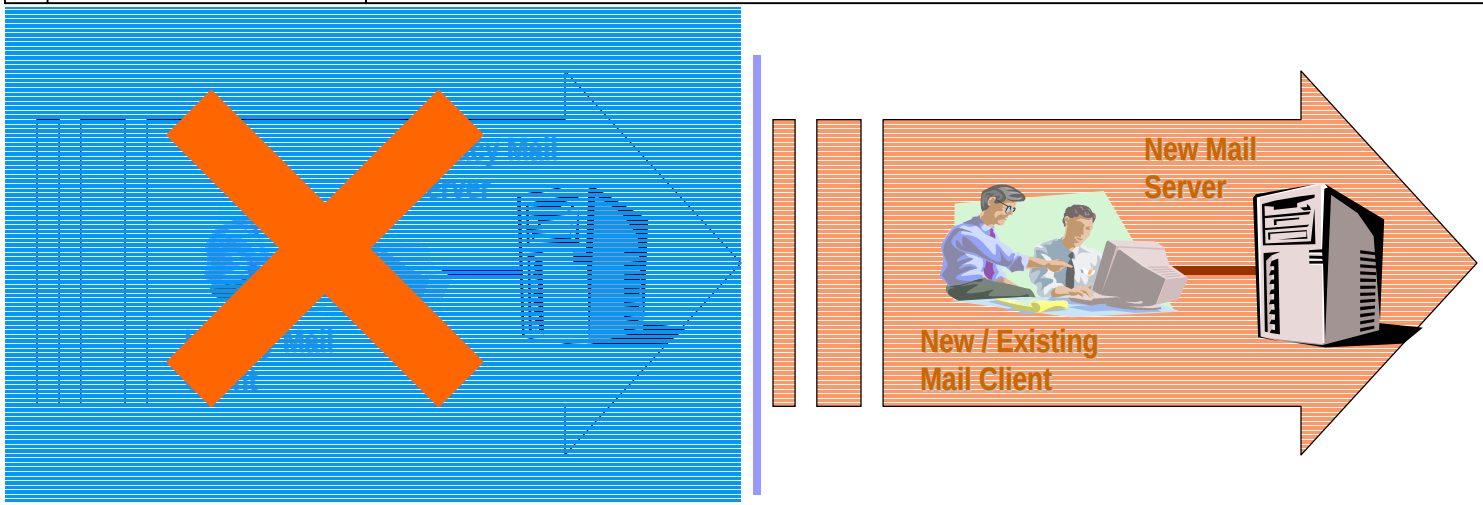



- Server capacity analysis
  - Opportunity for server consolidation?
  - The fewer systems to migrate, the better
  - Exploit advances in network and hardware to consolidate sites and servers
- Determine high availability server and storage requirements
  - Exploit SAN Technology
- Document best practices for management and support
- Plan to roll out Exchange 5.5 SP3, NT 4.0 SP4 (or later) if you haven't done so already
- HP can help with Exchange 2000 migration assessment workshop

# Migrating Mail

# The “Big Bang” Approach

| ID | Task Name | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Old Mail System | | | | | | | | | |
| 2 | New Mail System | | | | | | | | | |




- Occurs in a Culture of Transitional Mail with a Rapid Deletion Practice
- No Mail Transfer between Old and New = Loss of Knowledge Asset
- Negative Affect on Users
  - Users Create Local Disconnected Archives

# Mail Migration Possibilities

## Data Migration to MS Exchange

| ID | Task Name | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 |
|---|---|---|---|---|---|---|---|---|---|---|
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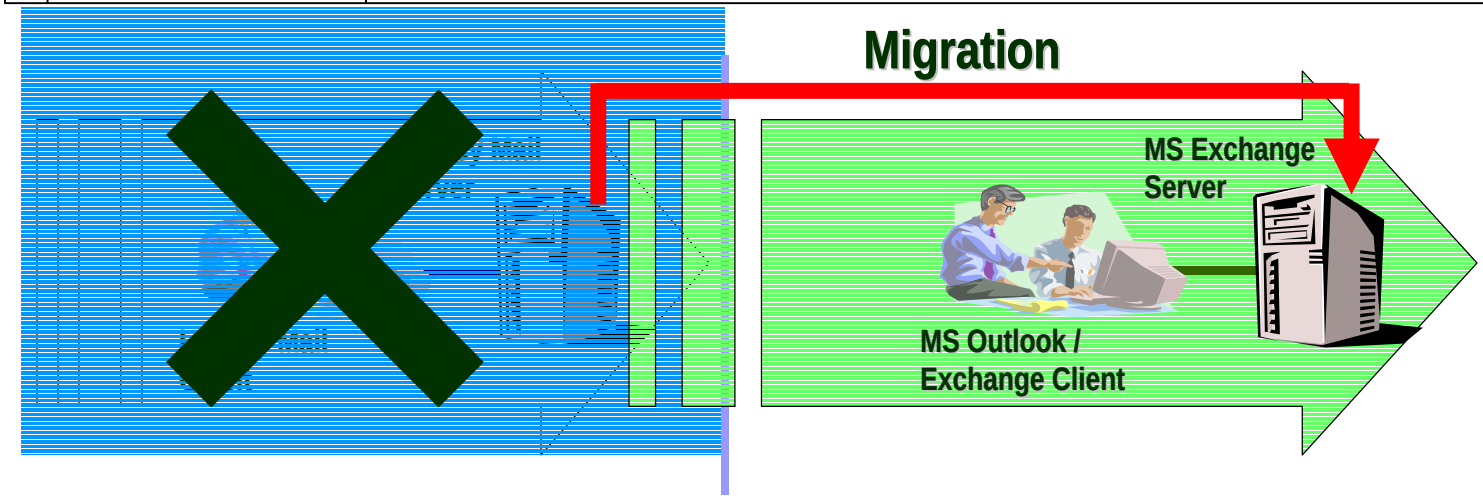
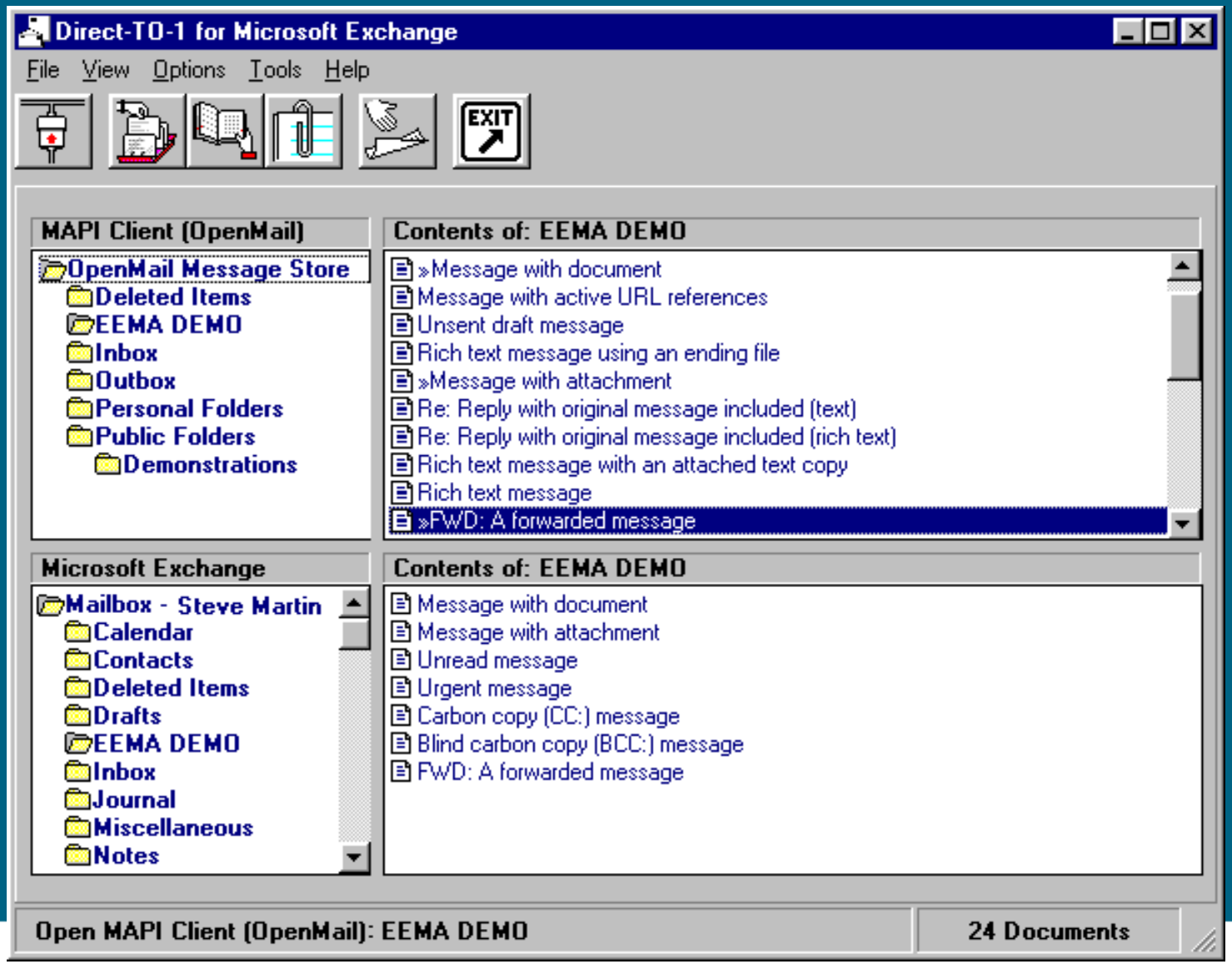



- Tools Available to do this
  - 3rd Party such a Direct-to-1
  - Microsoft migration tools e.g. Lotus Notes to Exchange
- User Housekeeping May be Required

- Problems
  - New System Inherits Legacy of Old System e.g. PST
  - Large Storage Requirement in New Exchange System
  - Migration Processing Capability

# *Direct*-TO-1 Interactive Mode User Interface



# Mail Migration Possibilities

## Parallel Running!

| ID | Task Name | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 |
|---|---|---|---|---|---|---|---|---|---|---|
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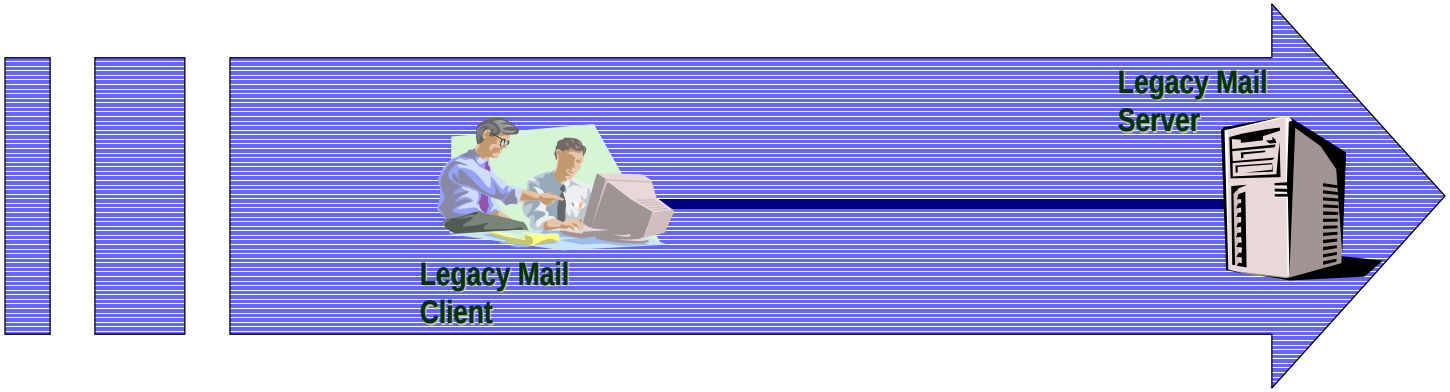
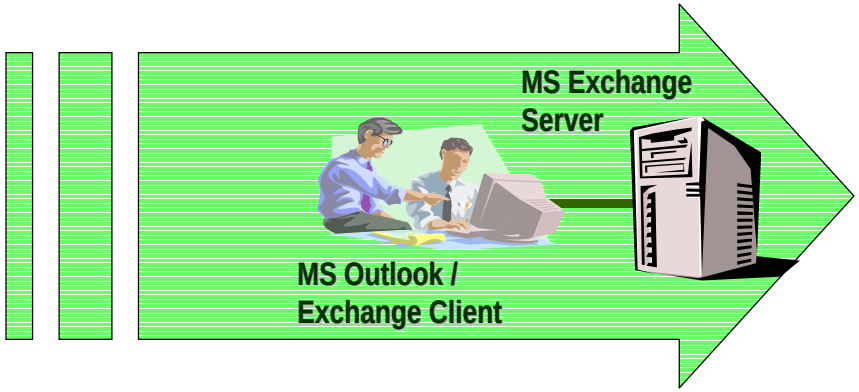
| 2 | New Mail System | | | | | | | | | |



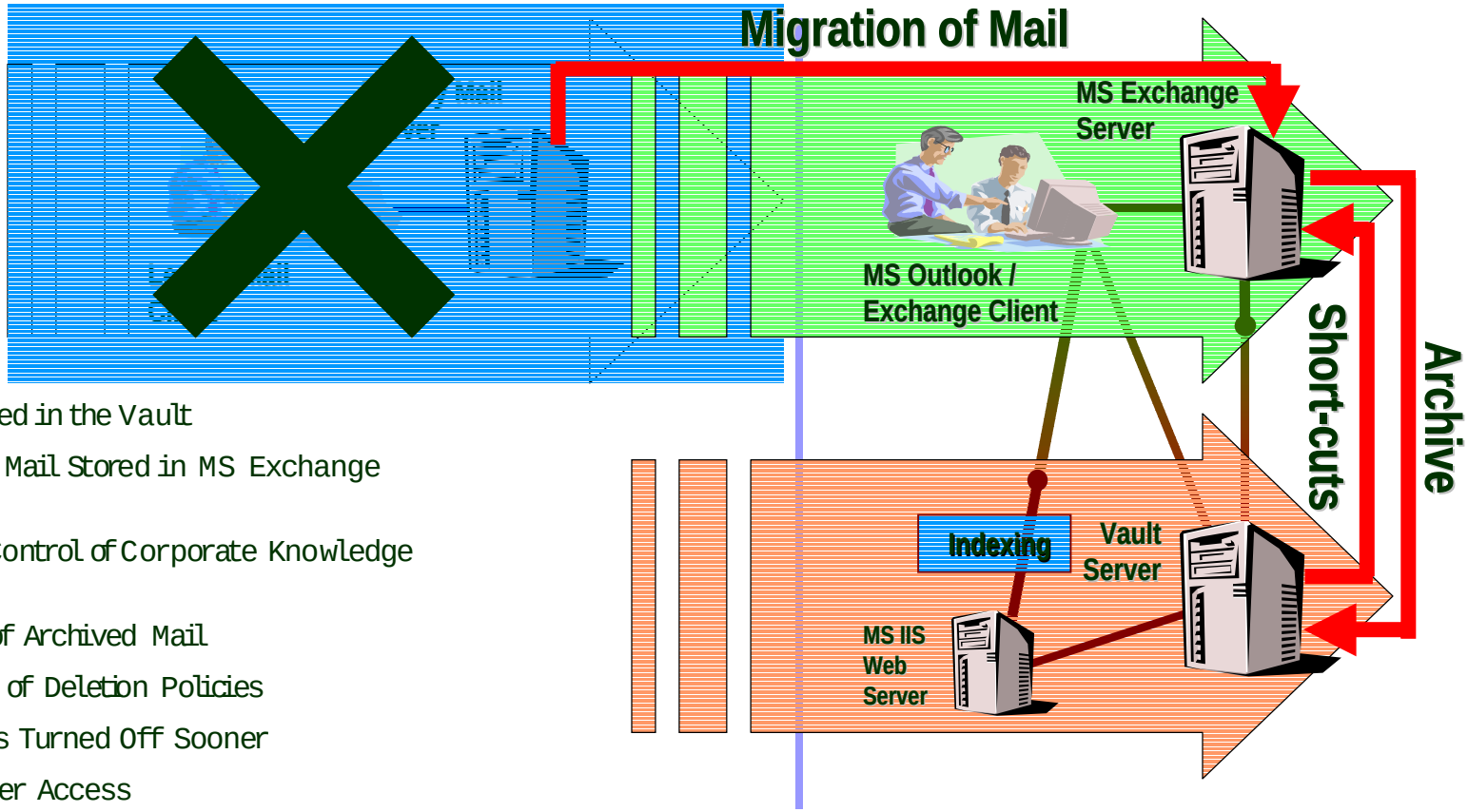

- Solves immediate problem of loss of information
- Increases running & storage costs
- Duplicate Skill Sets Required
- User may have multiple mail access points



# Using Enterprise Vault

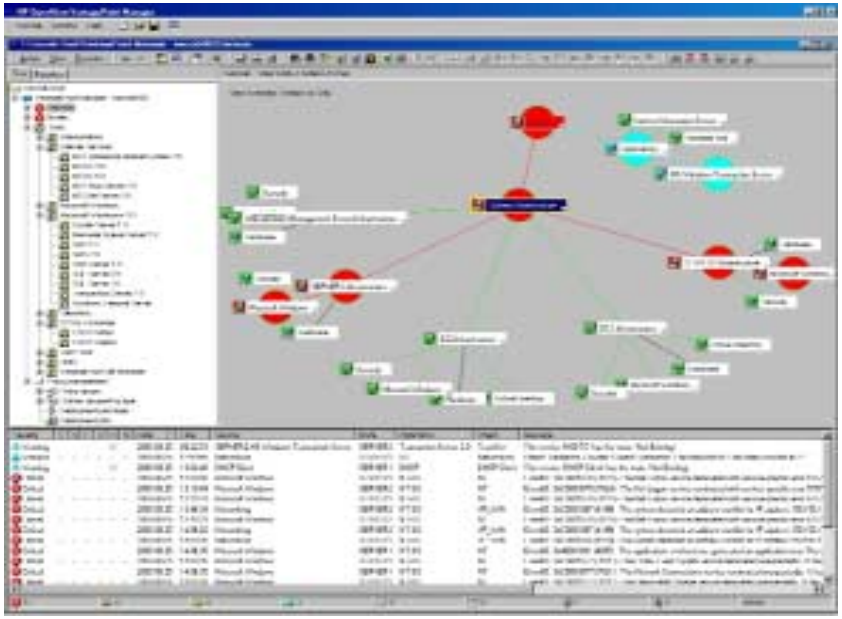
## Managing Mail Migration to MS Exchange

| ID | Task Name | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Old Mail System | | | | | | | | | |
| 2 | New Mail System | | | | | | | | | |
| 3 | Enterprise Vault | | | | | | | | | |




- Old Mail Stored in the Vault
- Most Recent Mail Stored in MS Exchange Mailboxes
- Centralised Control of Corporate Knowledge Asset
- Single View of Archived Mail
- Incorporation of Deletion Policies
- Old System is Turned Off Sooner
- Seamless User Access

# 3. Prepare your network infrastructure



## Plan for all important protocols

- TCP/IP
- DNS
- DHCP
- LDAP

## Need for (rapid) pilots?

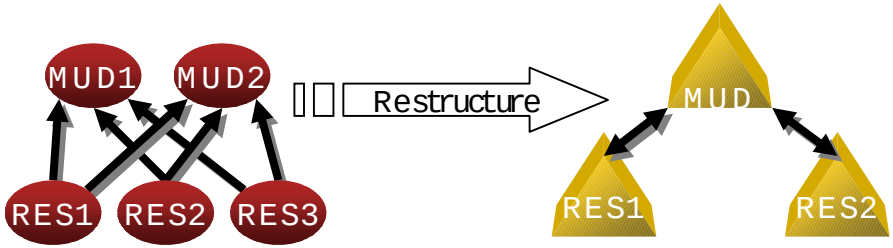
- Directory Services interoperability
- Policy-based management

## Impact on other projects?

- Voice-over-IP
- Video Conferencing
- Remote & mobile access

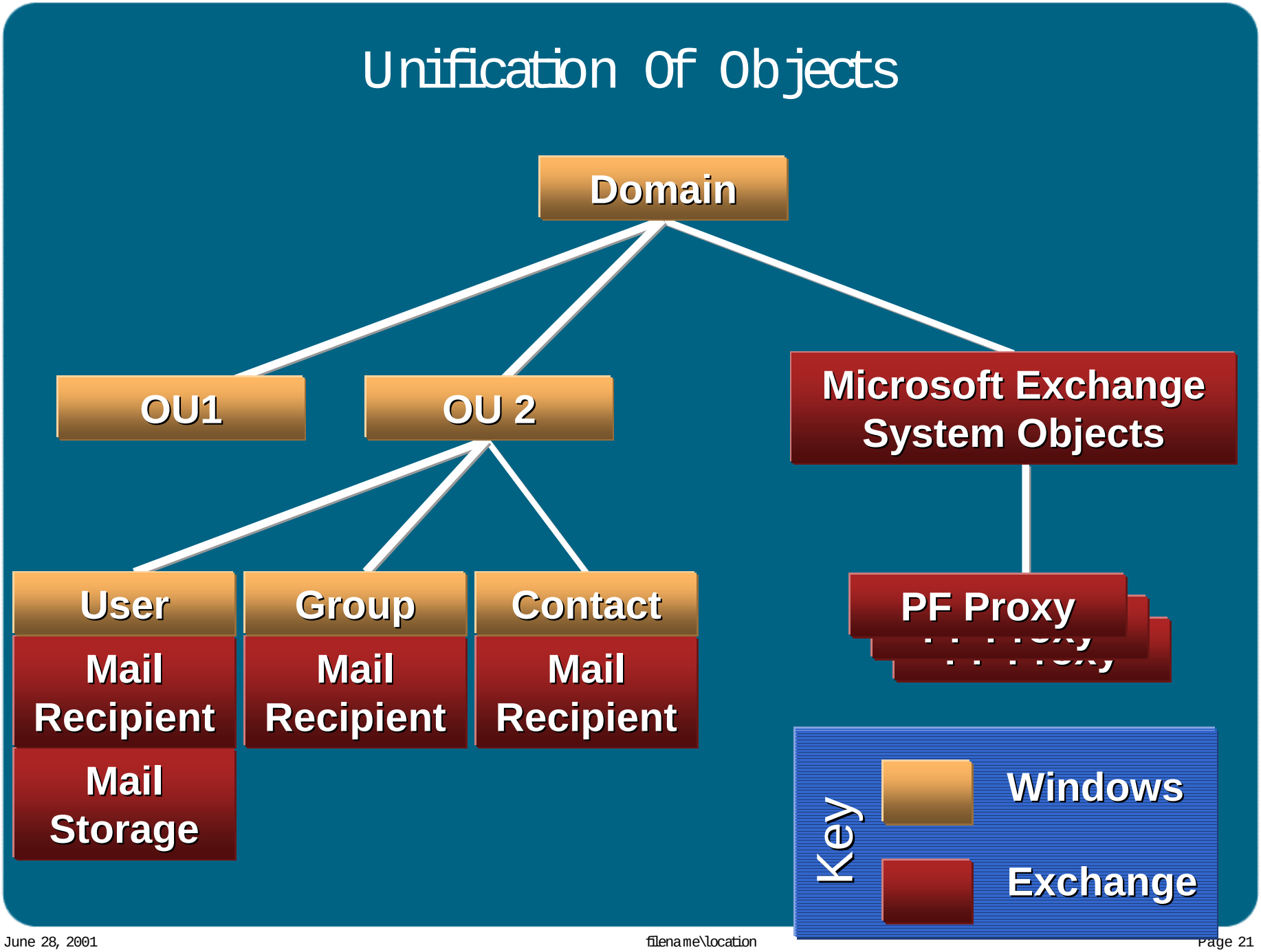
# 4. Windows 2000 and Active Directory

- Are you satisfied with your present Windows NT (domain) design?
- Do you already have initial design for Windows 2000 File and Print Services?
- Active Directory forests, trees, and domains
- Plan the upgrade of PDCs (primary domain controllers) and BDCs (backup domain controllers) to Active Directory
- Opportunity to reduce number of domains, domain controllers

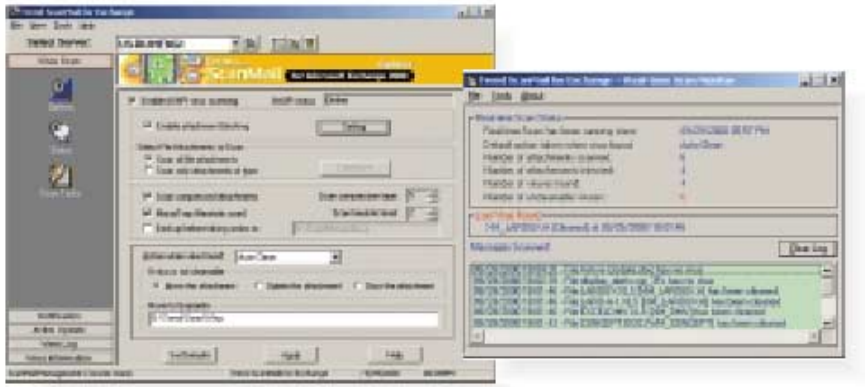



- Understand Active Directory replication
- Plan Windows 2000 domains and sites
- Populate Active Directory with Exchange Directory content
- Synchronize Active Directory with organizational directory sources
- Use the ADC (Active Directory Connector) to link AD to Exch 5.5 Directory Service
- Understand Site Replication Services

# Unification Of Objects



# 5. Investigate complimentary software



Determine the installed add-ons

- Back-up and restore
- Security, Virus checkers
- Workflow/document management
- FAX, other gateways

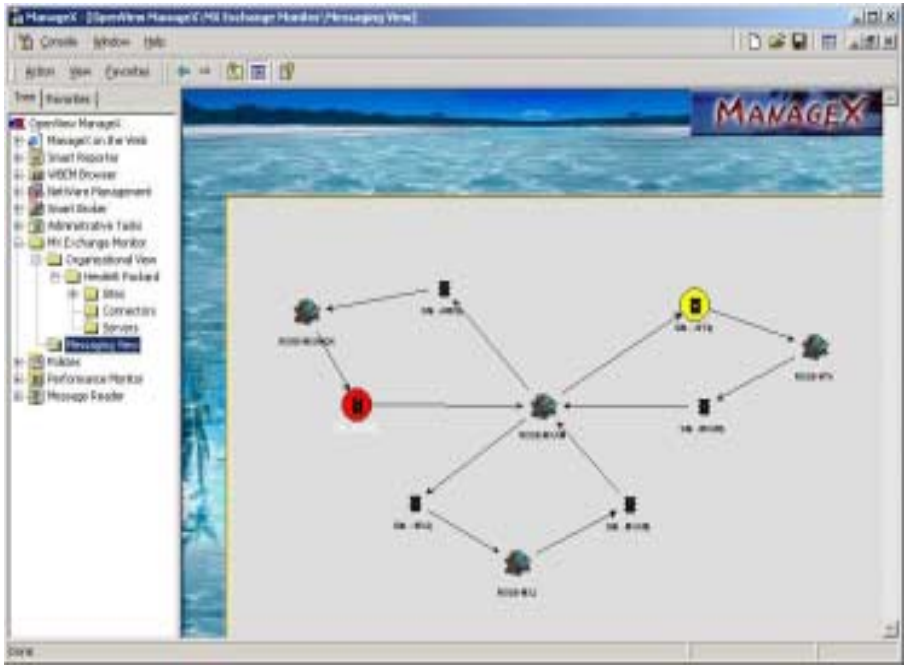
Are they supported by Windows 2000 and Exchange 2000?

- Will they support new functionality?
- Do you need additional testing?

# 5. Investigate complimentary software (cont.)

Management solutions from HP

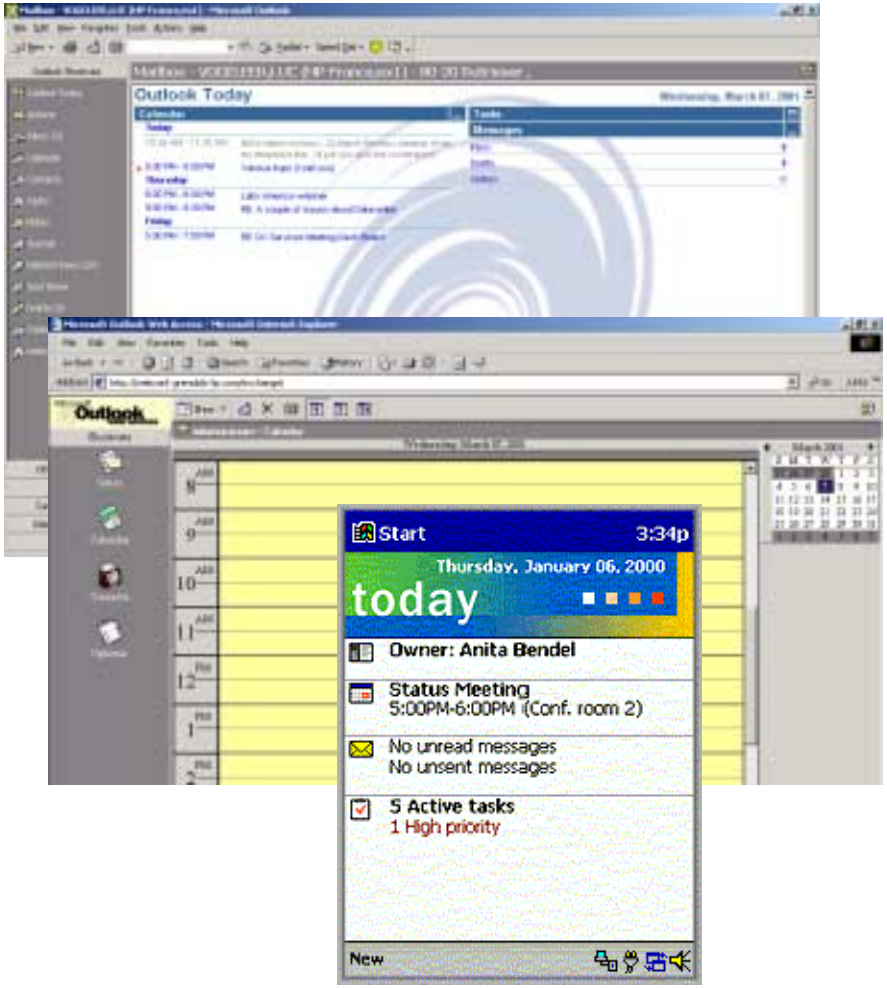
HP OpenView VantagePoint
HP OpenView Express/ManageX




Case Study: Orange County Schools

- 80 Windows 2000 servers
- 180 routers
- OpenView ManageX for critical servers (IIS, Exchange, SQL)
- Alerts send to phone/pager
- Network Node Manager for routers
- OmniBack II for centralized Backup/Restore

# 6. Select Clients




## MAPI based clients

- Outlook 98
- Outlook 2000

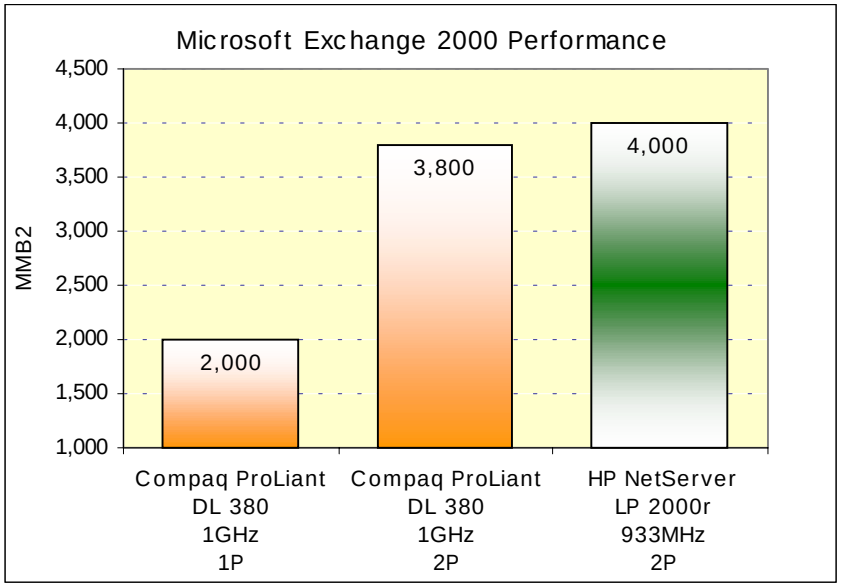
## Internet based clients

- Outlook Web Access
  - Now a fully functional & scalable alternative
  - Mail, calendar, contacts…
- IMAP/POP3
  - Unix workstations
  - Mail only, but allows for local folders
  - Directory access via LDAP

## Mobile clients

  - RIM Blackberry
  - PDA (Pocket PC or others)
  - Smart phones (WAP)
  - Voice (UM – access from any phone)

# 7. Qualify hardware




## I. Server

Windows 2000 domain controllers are not the same as Windows NT domain controllers

- The Active Directory is a transactional database
- The server will have a much greater load
  - Authentication
  - Replication
  - Requests from Exchange 2000

Exchange 2000 servers can exploit new hardware

- Scales well to 8-way servers
- Storage Area Networks
- Clusters (active/active)
- Front-end/Back-end configurations

# 7. Qualify hardware (cont.)

## II. Storage

### Storage Area Networks

- Share storage among servers

### Front-end/back-end configurations

- Clustered Storage Server as back-end

### Active/Active Clusters

- 2-node clusters with Advanced Server
- 4-node clustering supported with Windows 2000 Datacenter
  - Exchange 2000 SP1 required
  - 3 active, 1 passive (tbd)

### Backup/Restore

- Tape drives/arrays

### Achiving

- Optical Jukeboxes

# 8. Deploy Exchange 2000


## How can you get to a "native" Exchange 2000 organization?

- What does "mixed mode" mean for your environment?
- How quickly does it need to happen?
- Do you have the necessary resources for a rapid migration?

## Which upgrade strategy is best?

### In-place upgrade

- In-place upgrades existing systems
- But, you need a back-out plan

### Replacement (move mailbox)

- Replacement means new hardware, but it's easier

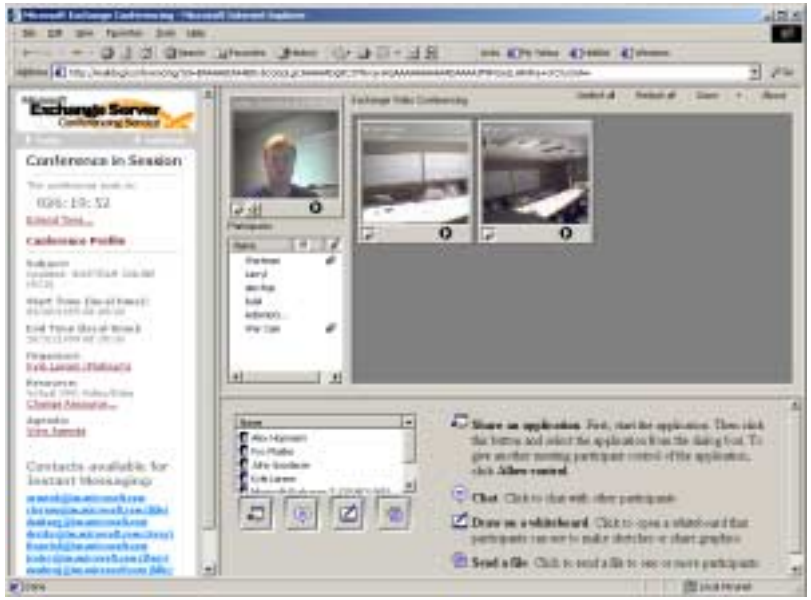
### Leapfrog upgrade

- Similar to Move Mailbox method, but "recycles" the hardware to create the next Exchange 2000 server

# Upgrade methods (comparison)

| Factors to Consider | Move Mailbox Upgrade | In-Place Upgrade | Leapfrog Upgrade |
|---|---|---|---|
| Impact to user | Least impact | Most impact | Least impact |
| Hardware | Requires new hardware | Uses existing hardware, but hardware must support Windows 2000/Exchange 2000 | Requires one or two new hardware parts |
| Existing Exchange version | Exchange 4.0, 5.0, 5.5 will work | Requires Exchange 5.5 Service Pack 3 | Exchange 4.0, 5.0, 5.5 will work. |
| Contingency Plan | Original server available | Backups | Original server available |
| Migration Length | Accommodates gradual | One-time upgrade | Accommodates gradual |
| Other manual steps | Connectors and other components that cannot be moved must be implemented manually | Automatic | Connectors and other components that cannot be moved must be implemented manually |

# Moving ahead …




## How can you take advantage of new functionality offered by Exchange 2000?

- New APIs (e.g. folder events)
- Web Store as a repository for loosely-structured information, web-based collaboration
  - Every item in the Web Store has a URL
  - Public folders, messages
  - Web storage system also part of SharePoint Portal Server ("Tahoe")
- Real-time collaboration
  - Conferencing Server
  - Instant Messaging (IM)
- Unified Messaging
  - Voice access to messages, calendar, contacts etc. for your mobile workers?

## New types of clients

  - Cell phones, wireless access for PDAs

# Case Study: HP's own migration from OpenMail to Exchange

## Final phase:

- started March 1st, 2000
- Target completion date: November 2000 (end FY00)
- Total no. of mailboxes in HP and Agilent: >120,000
- 33,000 mailboxes were already on Exchange, rest were still on OpenMail
- Some pockets of Notes/Domino

## Goals:

- Move to single messaging backbone
- Move 80,000+ mailboxes in 5 months (both HP & Agilent)

## Financial Motivation:

- Anticipated operating costs savings by moving to a single e-mail backbone
  - $4 million in in the first year
  - $11 million annual costs savings in subsequent years
- These savings are in the areas of
  - training
  - head count
  - integration and support
  - directory services
  - software purchases
  - deployment and operations

## Results:

- Rapid migration of servers and mailboxes
- Moved the company to new mail platform in 1 year (initial OpenMail rollout took 5 yrs).
- Only minor delays due to network upgrades and changes in disaster recovery strategy
- Financial targets on track

# Case Study: HP's own migration from OpenMail to Exchange (cont.)

## Planning Principles

- Quick, early, worldwide decisions
- Strong management of change
  - business management sponsorship, support and partnership
  - structured communication
  - flexibility in schedules and methods
- Close linkages with other initiatives
- Good understanding of impacts and dependencies on current systems
  - integration and exception planning

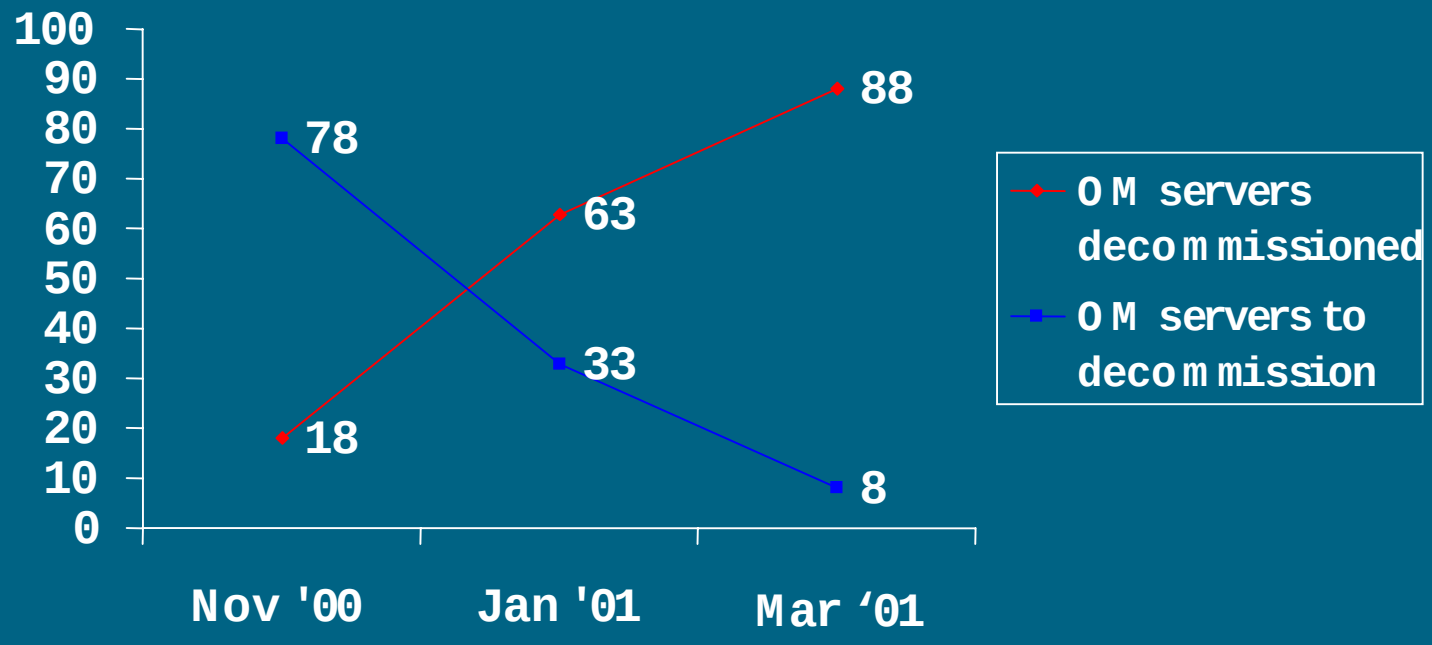
# Critical Success Factors

## Top 10 List:

1. Sponsorship (formal sign-off)
2. Communication (web site is not enough)
3. Focus on End-User Experience
4. Finalize scope upfront (don't revisit)
5. Effective resource planning
6. Empower those closest to the action
7. Ensure global consistency for critical tasks (worldwide templates)
8. Time-Box Decisions (timely decisions)
9. Encourage and setup structure for information sharing
10. Test end-to-end processes thoroughly

# OpenMail Server Migration

*(World Wide Mailbox Server Status)*




The remaining 8 systems are the 'lights-out' user servers (4), for Biz partner mailboxes or Applications still dependent on OpenMail, and DRP machines (4).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