



Planning a successful Exchange-2000 deployment in the Enterprise

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## Moving to Exchange 2000 – Phased Approach

### 1. Understand the technology

2. Assess your messaging & collaboration

### environment

- 3. Prepare your network infrastructure
  - 4. Active Directory planning & design
    - 5. Investigate & test complementary software
      - 6. Decide on supported client software/technology
        - 7. Qualify hardware platform
          - 8. Deployment across business units & geographies

## 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 ٠
- Unified Messaging
- Web-based collaboration (OWA, XML) ٠
- Hosted messaging (xSP) ٠

### HP World 2001

### Gather information

- www.microsoft.com/exchange
- www.hp.com/hps/msexchange/learn\_white.htm

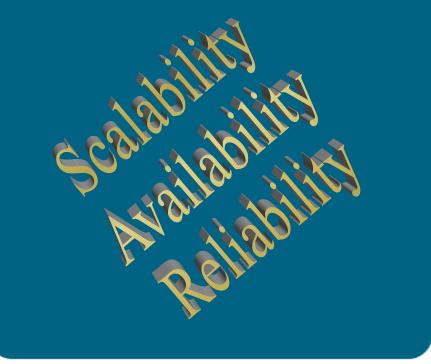
### Educate your staff

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

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

• 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

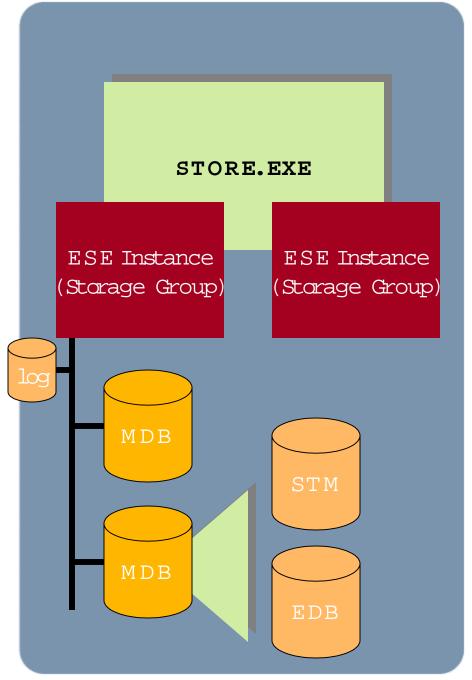
•Up to 4 ESE instance per store process

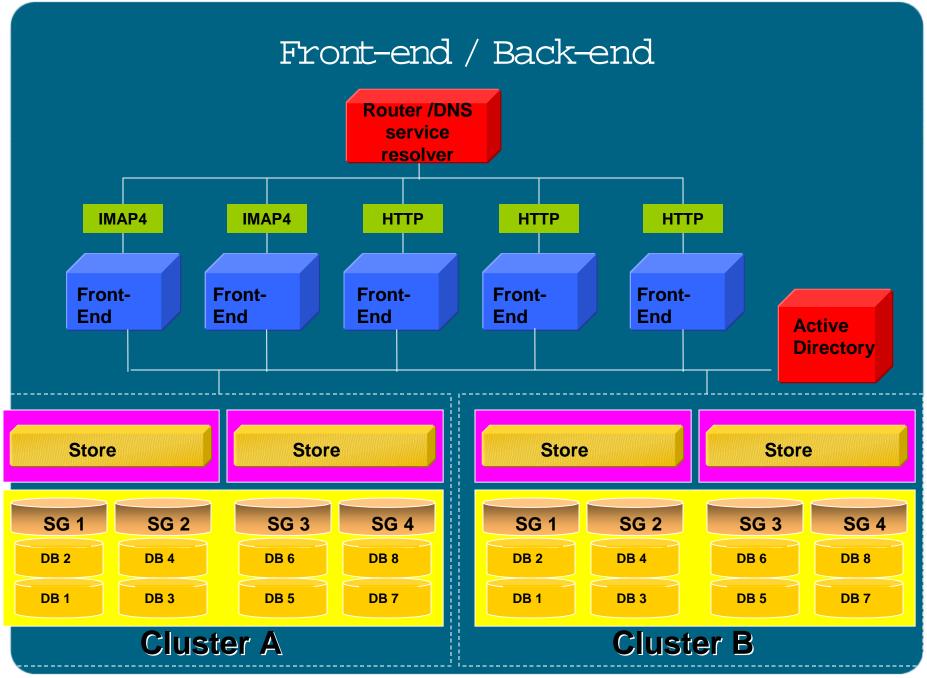
•Shared transaction logs

•Up to 5 MDB per ESE instance

•A MDB consist in a STM and EDB file

- STM: Streaming Internet Content
- EDB: MAPI and Properties





## Exchange 2000 Clustering

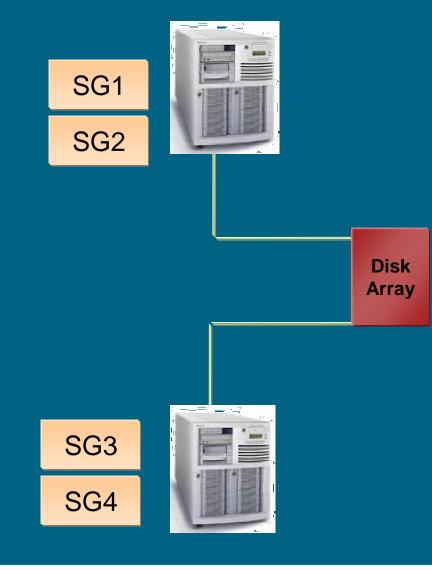
Designed for *n*-node clustering Clustering is Active/Active

EVS (Exchange Virtual Server) is the unit of failover

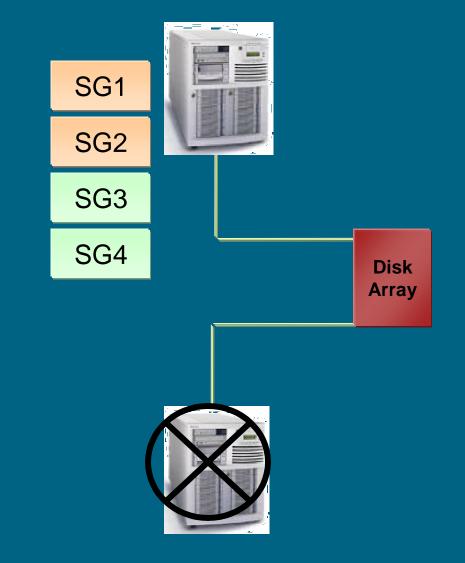
All major components act as cluster resources

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

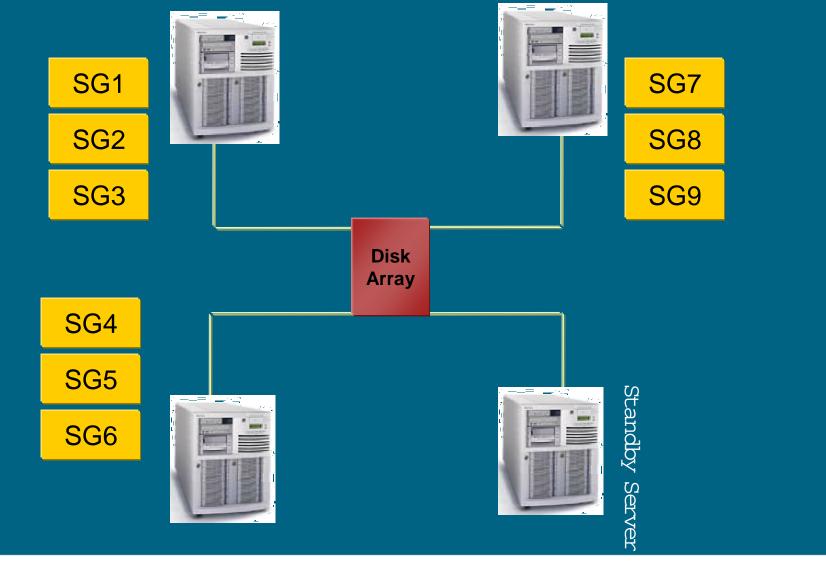
## Clustering and Storage Active/Active (2 node only)



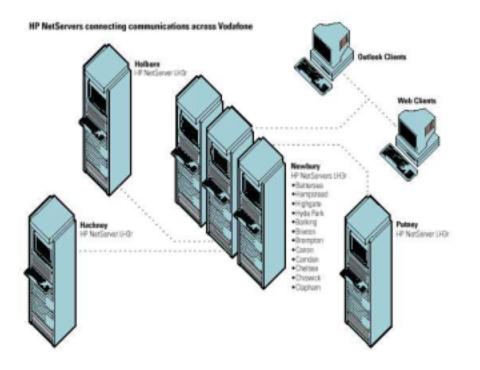
## Clustering and Storage Active/Active (2 node only)



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



## 2. Assess your current messaging environment

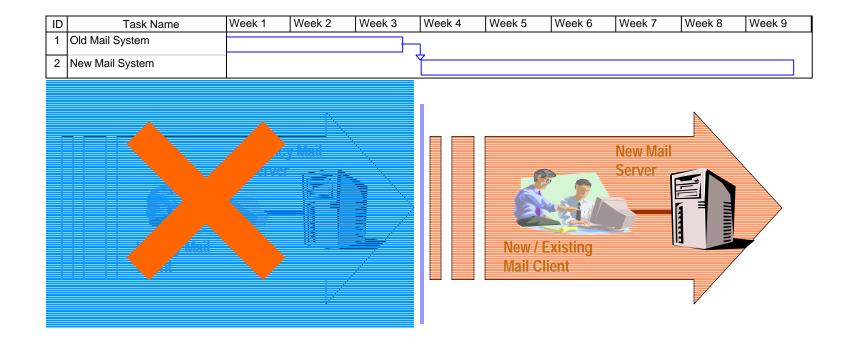


- Server capacity analysis
  - Opportunity for server consolidation?
  - The fewer systems to migrate, the better
  - Exploit advances in network and hardware to consolidate sites and servers
- Determine high availability server and storage requirements
  - Exploit SAN Technology
- Document best practices 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

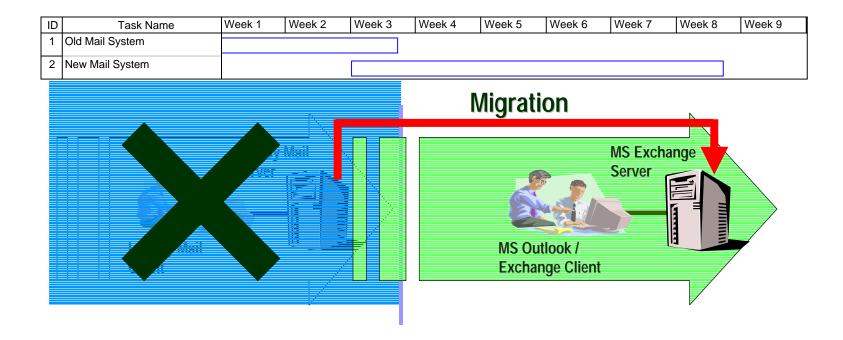


## The "Big Bang" Approach



- 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



- Tools Available to do this
  - 3<sup>rd</sup> 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

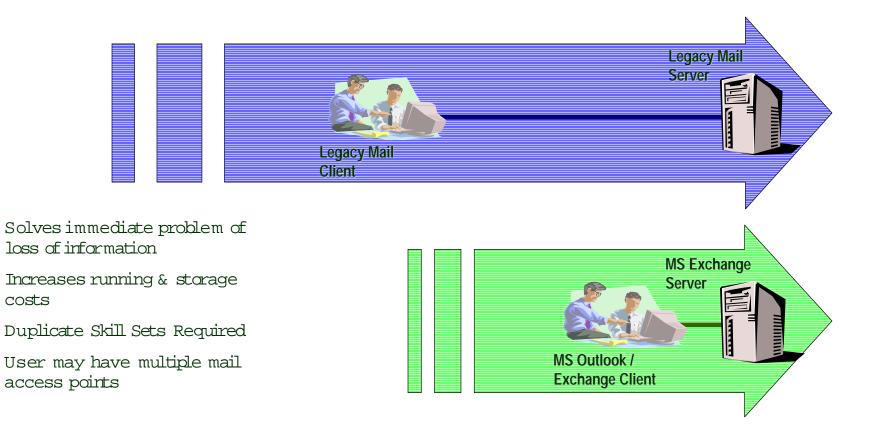
## Direct-TO-1 Interactive Mode User Interface

Direct-TO-1 for Microsoft Exc File View Options Tools Help	hange	
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MAPI Client (OpenMail)	Contents of: EEMA DEMO	
CopenMail Message Store	Message with document	
Deleted Items	Message with active URL references	
EEMA DEMO	🖹 Unsent draft message	
Coloox (Colorador)	Rich text message using an ending file	
Outbox	SMessage with attachment	-
Personal Folders	Re: Reply with original message included (text)	
Public Folders	Re: Reply with original message included (rich text)	
Demonstrations	Rich text message with an attached text copy	
	Rich text message FWD: A forwarded message	
Microsoft Exchange	Contents of: EEMA DEMO	
Mailbox - Steve Martin	Message with document	
	Message with attachment	
Contacts	Durread message	
Deleted Items	Urgent message	
	Carbon copy (CC:) message Blind carbon copy (BCC:) message	
	E Dind Californ Copy (BCC.) message E PWD: A forwarded message	
	En wib. A torwarded message	
Notes -		
Open MAPI Client (OpenMail):		24 Documents

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## 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
1	Old Mail System									
2	New Mail System									



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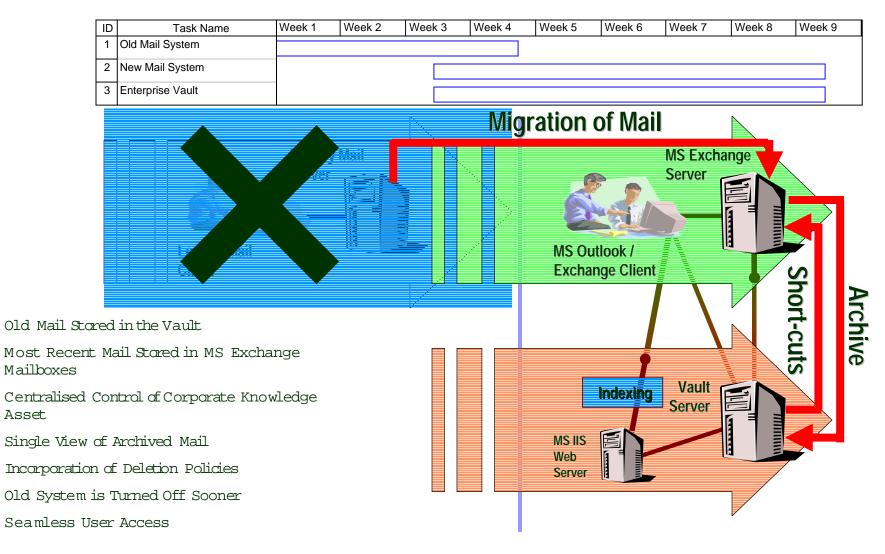
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## Using Enterprise Vault Managing Mail Migration to MS Exchange



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# 3. Prepare your network infrastructure

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### Plan for all important protocols

- TCP/IP
- DNS
- DHCP
- LDAP

### Need for (rapid) pilots?

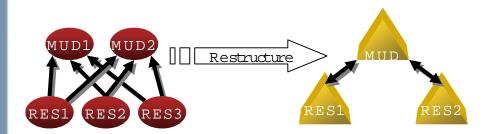
- Directory Services interoperability
- Policy-based management

### Impact on other projects?

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

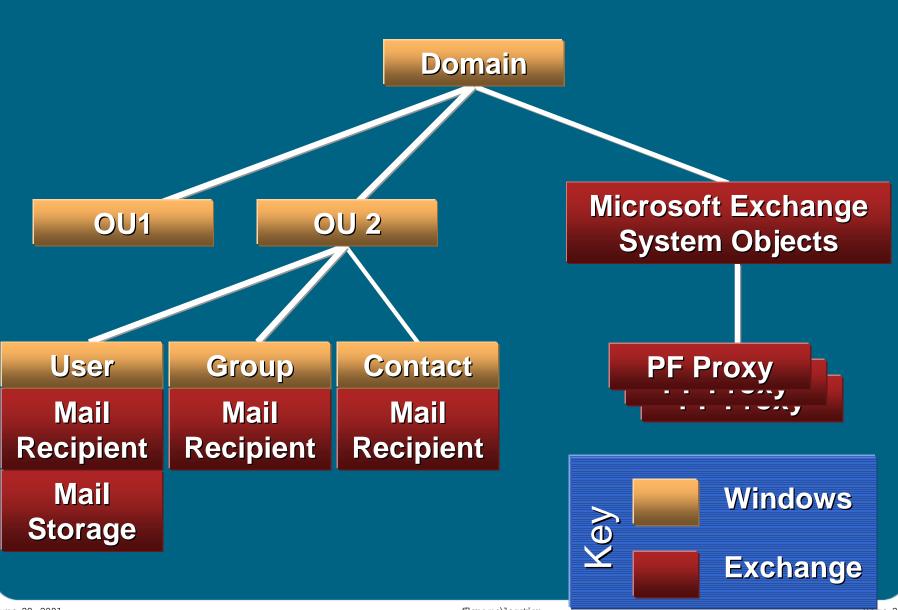
## 4. Windows 2000 and Active Directory

- 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



June 28, 2001

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## 5. Investigate complimentary software



### Determine the installed add-ons

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

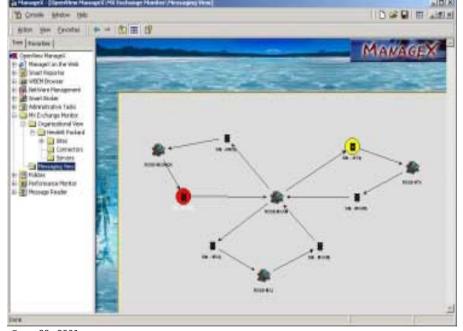
## Are they supported by Windows 2000 and Exchange 2000?

- 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

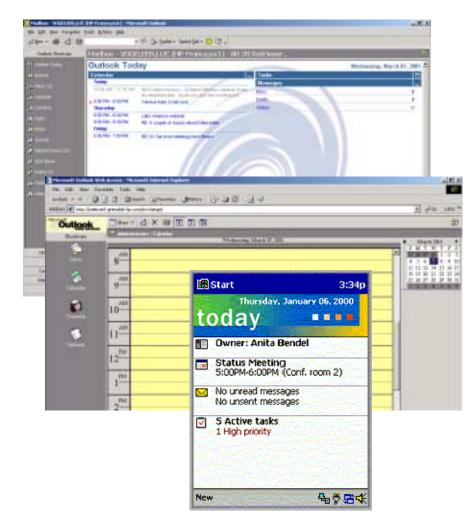


### Case Study: Orange County Schools

- 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

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## 6. Select Clients



### MAPI based clients

- Outlook 98
- Outlook 2000

### Internet based clients

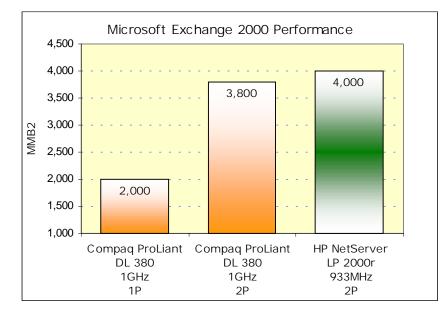
- Outlook Web Access
  - Now a fully functional & scalable alternative
  - Mail, calendar, contacts ...
- IMAP/POP3
  - Unix workstations
  - Mail only, but allows for local folders
  - Directory access via LDAP

### Mobile clients

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

## 7. Qualify hardware





### L 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.)



### IL 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)

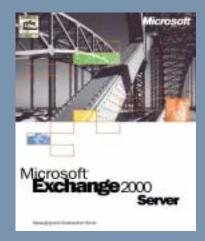
### Backup/Restore

• 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

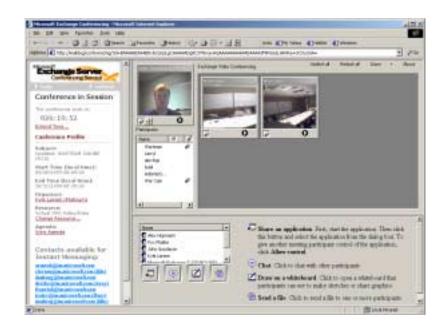
### Leapfrog upgrade

 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 looselystructured 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 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 mailplatform in 1 year (initial Open Mail 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

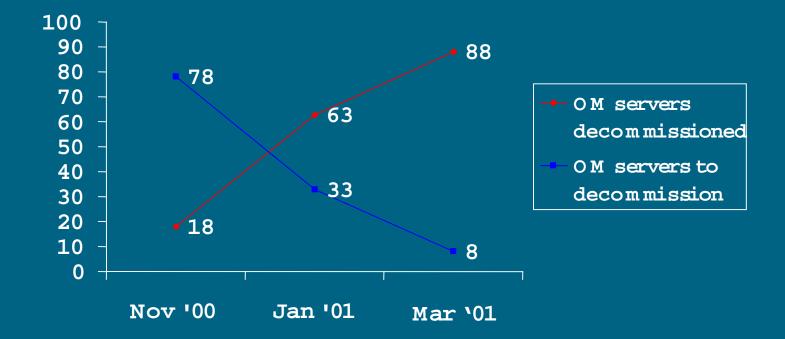
- Quick, early, worldwide decisions
- Strong management of change
  - business management sponsorship, support and partnership
  - structured communication
  - flexibility in schedules and methods
- Close linkages with other initiatives
- Good understanding of impacts and dependencies on current systems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

## Open Mail 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 Open Mail, and DRP machines (4).

