Upgrading from Microsoft Exchange Server 2003/2007 to Exchange Server 2010

Harold Wong
Microsoft Corporation
blogs.technet.com/b/haroldwong

Session Objectives and Takeaways

- You deploy Exchange 2010 next (side by side) to the older Exchange servers, and then move Mailboxes
- Upgrade (Transition) to Exchange 2010 can be done with minimum user access downtime
- Use the Deployment Assistant!

Session Agenda

- What's New / Different Since Exchange Server 2003 and 2007
- Client Support (Outlook, Web, Mobile) to Exchange 2010
- Exchange 2010 Pre-Reqs and Exchange 2003 Co-Existence
- Preparation Tools (Troubleshooting Asst, LoadGen, Best Practice Analyzer)
- Exchange Transitions and Certificates!
- Exchange CAS 2010 Implication
- SMTP Transport Upgrades
- Unified Messaging Upgrades
- Public Folders and Exchange 2010
- Retiring Exchange 2003 / Exchange 2007

Overview of Demo Environment

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New since Exchange Server 2003

- Granular server roles: Client Access, Mailbox, Hub Transport, Unified Messaging, and Edge Transport
- 64-bit servers requirement
- Active Directory Sites replace Routing Groups
- Automatic configuration of Outlook 2007 and higher clients
- Public Folders no longer required by Outlook 2007 and higher clients
- Improved admin tools: Exchange Management Console (EMC) and Exchange Management Shell (EMS)\ PowerShell 2.0, and Exchange Control Panel (ECP)
- Unified Messaging: Get voice mail in your Inbox
- New Developer API: Exchange Web Services (EWS)
- Vastly improved HA\DR options via Mailbox Database Availability Groups (DAG)
- And many more…

New since Exchange Server 2007

- Run Exchange Server on-premises, in the cloud\Online, or both on a per mailbox basis
- High Availability solution for mailboxes Resiliency - Database Availability Groups (DAG)
  - Provides site resilience and disaster recovery; replaces SCR, LCR, SCC and CCR from Exchange 2007
- Flexibility in storage choices (SATA disks, JBOD configs, RAID, iSCSI, etc all supported)
- Improved management tools: PowerShell 2.0, RemotePowerShell and Exchange Control Panel (ECP)
  - EMC now 64-bit only
- Almost all client connections terminate at the CAS server
  - Public Folder connections being the exception
- Roles-based access control (RBAC)
- Designed for much larger mailboxes, 30GB+
- Personal archive support
- Virtualization fully supported*
- ExOLEDB, WebDAV and CDOEx are gone

Collaborate Effectively

A familiar and rich Outlook experience across clients, devices, and platforms

Desktop

Microsoft® Outlook® 2010

Microsoft® Office Outlook® 2007

Microsoft® Entourage®:mac 2008

Web

Microsoft® Outlook® Web App

Mobile

Microsoft® Office Outlook® Mobile

Windows Mobile

Microsoft® Exchange ActiveSync

DataViz Compatibility Instantly

BBS Big Bang System Corporation

HELIO™

NOKIA

palm.

Remoba

Sony Ericsson

symbian

Outlook 2003 to Exchange 2010 Limitations

- Outlook 2003 by default does not encrypt client to Exchange communications
  - Option 1: Disable encrypted client communications in Exchange 2010
    - Simple PowerShell command
      - Set-rpcClientAccess –server {servername} –encryptionRequired $false
    - Although this reduces client to Exchange 2010 security
  - Option 2: Enable encryption in Outlook 2003
    - Can be done through Group Policy Object (KB Article# 2006508)
- Autodiscover (web based configuration of Outlook) not support
- Exchange Web Services not supported
  - Public Folders required for Free\Busy and Address Book retrieval
- Personal Archive not supported
- MailTips, improved Out of Office rules, and others features not supported

Exchange Server 2010 Prerequisites

- Active Directory
  - Windows 2003 SP2 global catalog server exist in each Exchange AD site
  - No hard requirement for Windows Server 2008 / 2008 R2 AD
  - Windows Server 2003 forest functional level
- Existing Exchange 2003 or 2007 servers
  - Must be Exchange 2003 SP2 or Exchange 2007 SP2 or higher
  - No Exchange 2000 or older servers
- Exchange 2010
  - Windows Server 2008 SP2 or 2008 R2 64-bit editions
  - Windows Server 2008 (or R2) Enterprise Edition required if DAGs will be used
  - Windows Management Framework
  - NET Framework 3.5 SP1
  - Internet Information Services (IIS)
  - Office System Converter: Microsoft Filter Pack
    - Required on Mailbox & Hub Transport server roles only
  - Windows 2008 (non R2) has addtional requirements

Server Preparation and Initial Setup

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Preparation Tools

Finding and solving problems before users do

Troubleshooting Assistant

Help determine the cause of performance, mail flow, and database issues

Load Generator

Simulate and test how a server responds to e-mail loads

Best Practice Analyzer

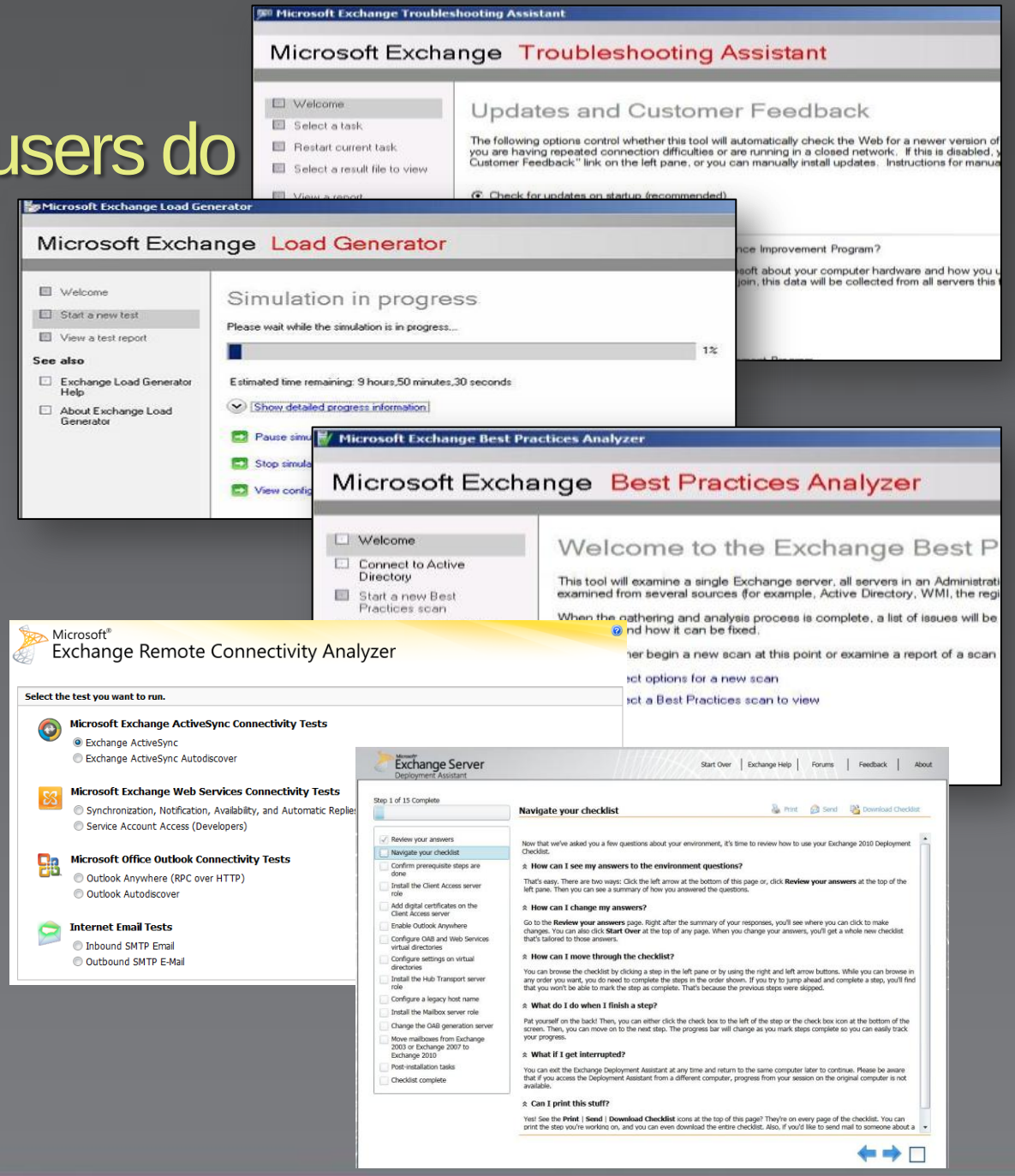
Determine overall health of Exchange system and topology

Remote Connectivity Analyzer

Test external connectivity to Exchange messaging communications resources

Deployment Assistant

Provides high level guidance (checklist based) for Exchange deployments



Remote Connectivity Analyzer

https://www.testexchangeconnectivity.com/

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Deployment Assistant

http://technet.microsoft.com/exdeploy2010

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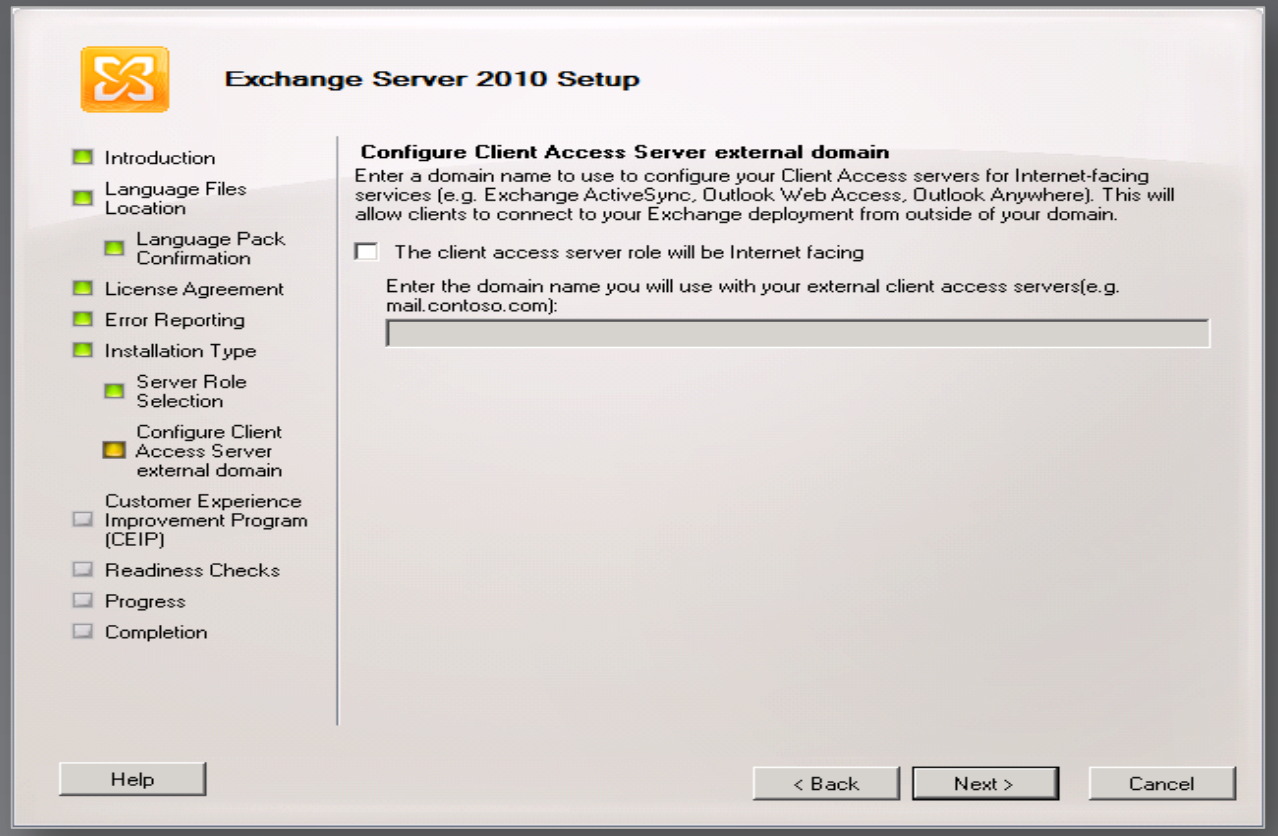
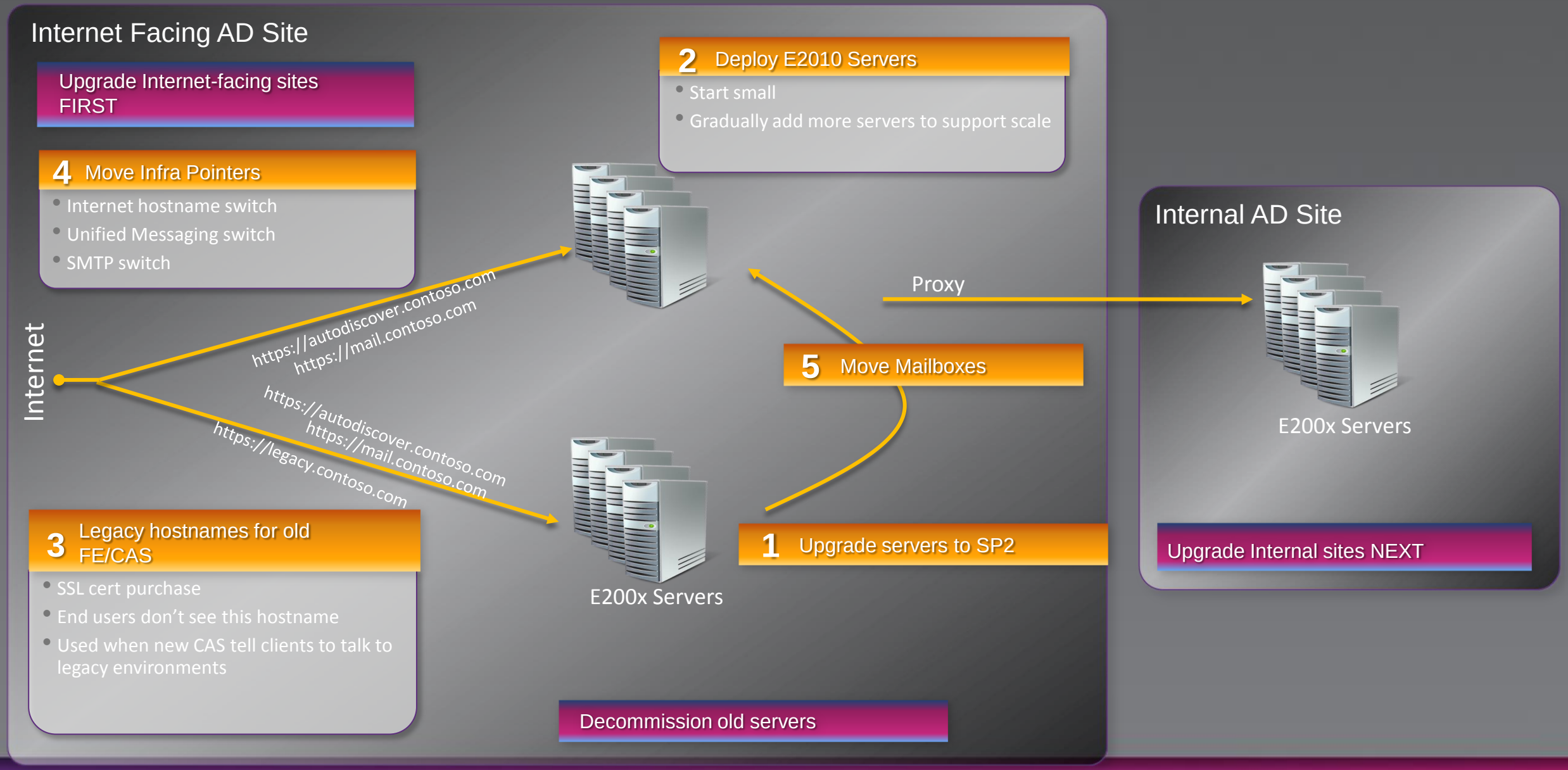
Setup for Exchange 2010

- Step-by-step instructions in setup application
- Support for unattended setup
- Setup provides specific settings for configuring your environment
- Configure CAS External domain name
  - Sets ExternalUrl property which aids client configuration
- Creates required routing group connector if Exchange 2003 still exists



Upgrading to Exchange 2010



Exchange 2010 Setup

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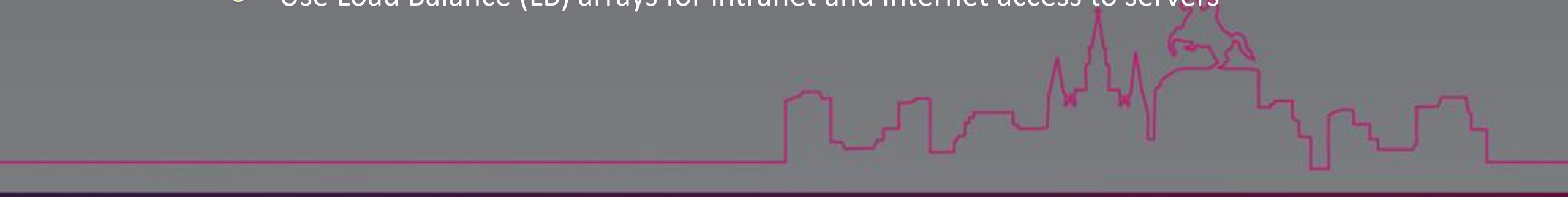
Namespaces and URLs

Exchange 2003	Exchange 2007	Exchange 2010
mail.contoso.com Outlook Web Access • /exchange, /exchweb, /public Exchange ActiveSync • /microsoft-server-activesync Outlook Anywhere • /rpc POP/IMAP Outlook Mobile Access • /oma	**mail.contoso.com** Outlook Web Access • /owa Exchange Web Services • /ews Offline Address Book • /oab Unified Messaging • /unifiedmessaging ~~Outlook Mobile Access~~ • ~~/oma~~	**mail.contoso.com** Outlook Web App Exchange Control Panel • /ecp ~~Unified Messaging~~ • ~~/unifiedmessaging~~ Note: the /exchange and /public vdirs will provide a 301 redirect experience to /owa
smtp.contoso.com Clients and SMTP servers	**Autodiscover.contoso.com** Autodiscover /autodiscover	**legacy.contoso.com** E2003/E2007 services

Deploying SSL Certificates

- Use “Subject Alternative Name” (SAN) certificate which can cover multiple hostnames
- Minimize the number of certificates
  - 1 certificate for all CAS servers + reverse proxy + Edge/Hub
  - If leveraging a certificate per datacenter, ensure that the Certificate Principal Name is the same on all certificates
- Minimize number of hostnames
  - Use “Split DNS” for Exchange hostnames
    - mail.contoso.com for Exchange connectivity on intranet and Internet
    - mail.contoso.com has different IP addresses in intranet/Internet DNS
  - Don’t list machine hostnames in certificate hostname list
    - Use Load Balance (LB) arrays for intranet and Internet access to servers



Certificate Creation

1. Create a Certificate Request file
2. Send Request file to certificate authority you are buying from
3. Use **`Import-ExchangeCertificate`** to activate newly acquired certificate
4. Use **`Enable-ExchangeCertificate`** to enable the certificate for use with a particular service
5. Or use the wonderful Certificate Wizard

```
New-ExchangeCertificate
  -GenerateRequest
  -Path c:\certificates\request.req
  -SubjectName "c=US, o=contoso Inc,
  cn=mail1.contoso.com"
  -DomainName mail.contoso.com,
  autodiscover.contoso.com,
  legacy.contoso.com
  -PrivateKeyExportable $true
```

Certificate Wizard

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Deploying Exchange 2010

Topology decisions—CAS load balancing

- OWA and EWS load balancing require Client←→Server affinity
  - Client-IP based Windows NLB or LB device using cookie-based affinity
  - Hardware load balancer recommended for CAS arrays
- Tell Autodiscover where to send clients: Configure internalURL and externalURL parameters and virtual directories
  - Example: Set-WebServicesVirtualDirectory cas2010\ews* -ExternalURL https://mail.contoso.com/ews/exchange.asmx
- Tell Outlook clients where to go for intranet MAPI access
  - Use New-ClientAccessArray and Set-MailboxDatabase

Switching to CAS2010

Preparatory steps

1. Obtain and deploy a new certificate that includes the required host name values
   a. mail.contoso.com
   b. autodiscover.contoso.com
   c. legacy.contoso.com (for Exchange 2003 coexistence)
2. Upgrade all Exchange servers to Service Pack 2 or higher
   a. Enable Integrated Windows Authentication on Exchange 2003 MSAS virtual directory (KB 937031)
3. Install and configure CAS2010 servers
   a. Configure InternalURLs and ExternalURLs
   b. Enable Outlook Anywhere
   c. Configure the Exchange2003URL parameter to be https://legacy.contoso.com/exchange

Switching to CAS2010

Preparatory steps, continued

4. Join CAS2010 to a load balanced array
   a. Create CAS2010 RPC Client Access Service array
   b. Ensure MAPI RPC and HTTPS ports are load balanced
5. Install HUB2010 and MBX2010 servers
   a. Configure routing coexistence
   b. Configure OAB Web-based distribution
6. Create Legacy hostname in DNS (Internal / External)
7. Create Legacy publishing rules in your reverse proxy/firewall solution pointed to FE2003 / CAS2007 array
8. Use ExRCA to verify connectivity for Legacy hostname against E2003/E2007

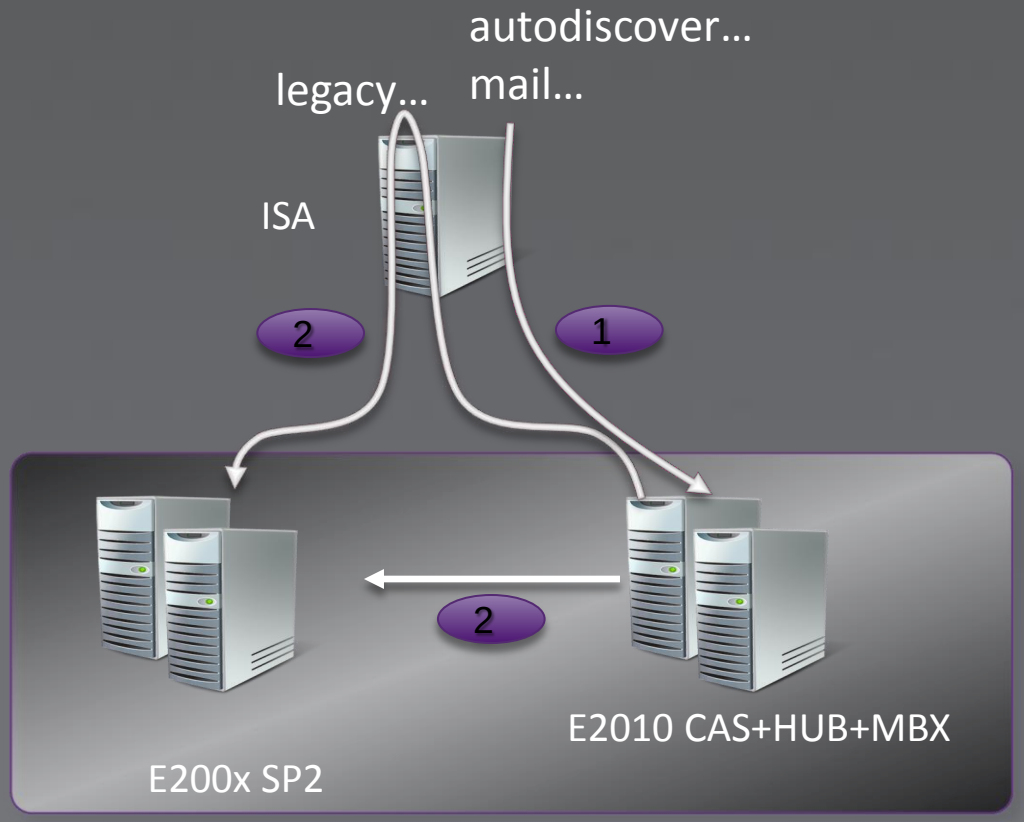
https://www.testexchangeconnectivity.com/

Switching to CAS2010

The switchover

The switchover involves a minor service interruption

1. Update/Create Autodiscover publishing rule
2. Update Mail publishing rules
   a. Update paths with new Exchange 2010 specific virtual directories
3. **Switch**: Move Mail… and Autodiscover… hostnames to point to CAS2010 array
4. Reconfigure CAS2007 internalURLs and externalURLs to now utilize Legacy namespace
5. Disable Outlook Anywhere on legacy Exchange
6. Test that CAS2010 is redirecting/ proxying to CAS2007 (externally and internally)



1 Clients access E2010 through Autodiscover… and mail…

2 Redirection (legacy…), proxying, and direct access to E2003/E2007

Switching to E2010 CAS

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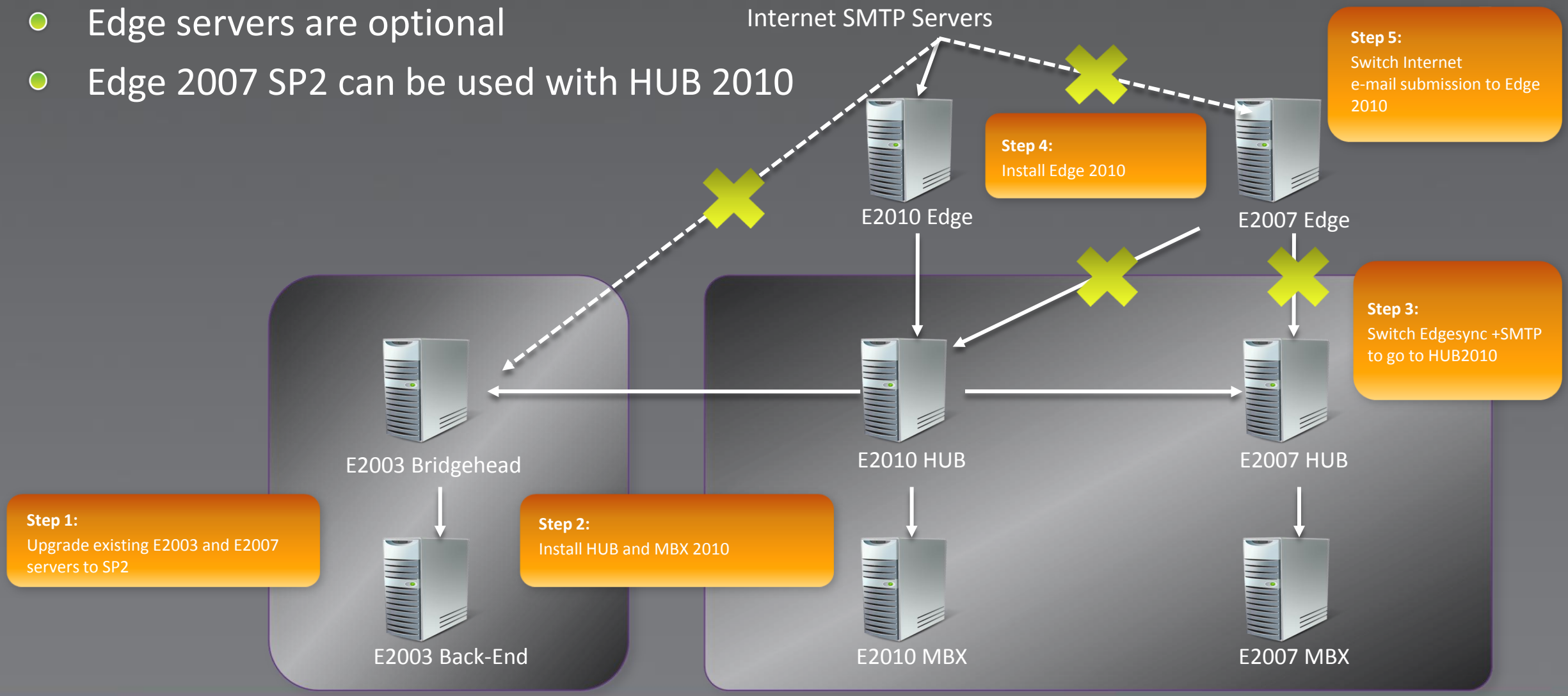
Client Access Upgrade

- Clients access CAS2010 first
- Four different things happen for E2003/ E2007 mailboxes
  1. **Autodiscover** tells clients to talk to CAS2007
  2. **HTTP redirect** to FE2003 or CAS2007
  3. **Proxying** of requests from CAS2010 to CAS2007
  4. **Direct CAS2010 support** for the service against BE2003 and MBX2007

CAS2010 Service	E2003/E2007 mailbox treatment
Outlook Web App	Redirect (with Single Sign-On for Forms-Based Authentication)
Exchange ActiveSync	• E2007: Autodiscover and redirect (WM6.1 and newer), Proxying (WM6 and older, all non-Microsoft) • E2003: Direct CAS2010 support
Outlook Anywhere, OAB, and Autodiscover	Direct CAS2010 support
Exchange Web Services	Autodiscover
POP/IMAP	E2007:Proxy E2003: Direct CAS2010 support

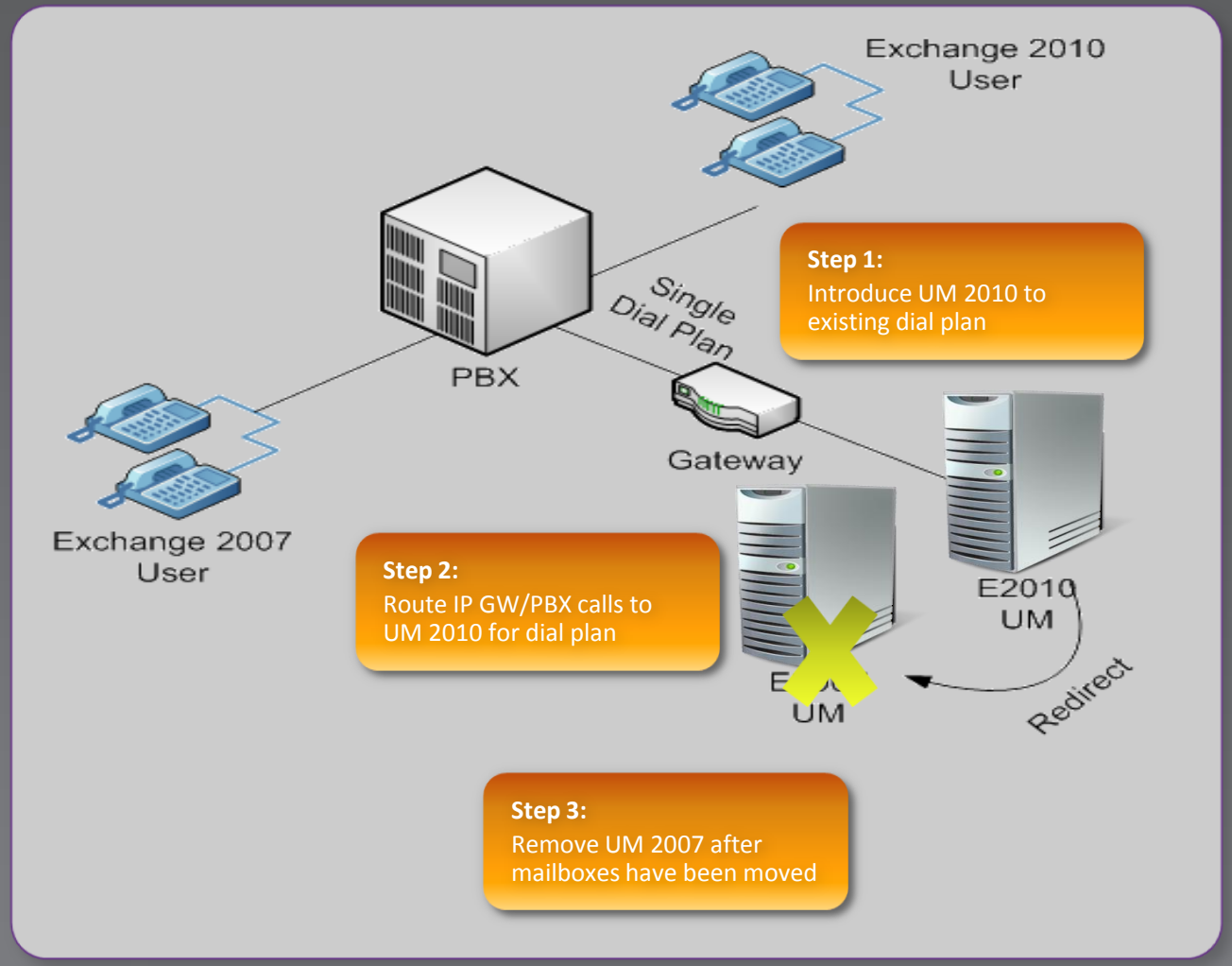
SMTP Transport Upgrade

- Follow this flow for each physical location
- Edge servers are optional
- Edge 2007 SP2 can be used with HUB 2010



Unified Messaging Upgrade

- IP PBXes and GWs
  - Configure to send all traffic to E2010 UM
  - E2010 UM will redirect to E2007 UM when necessary
- Office Communications Server (OCS)
  - With E2010 RTM, create new dial plan for E2010 UM users
  - Soon: OCS\Lync will automatically talk to E2010 UM, which will redirect to E2007 UM when necessary



Public Folders

- Co-existence supported across Exchange 2003, 2007, and 2010
- Outlook can read mailbox from one Exchange version (such as 2010) and public folder from another (such as 2003/2007)
- OWA 2010 will allow access to public folders with replica in mailbox server 2010
- Use Get-PublicFolderStatistics to help determine which content should be deleted or moved to another solution
- Migrate data to SharePoint

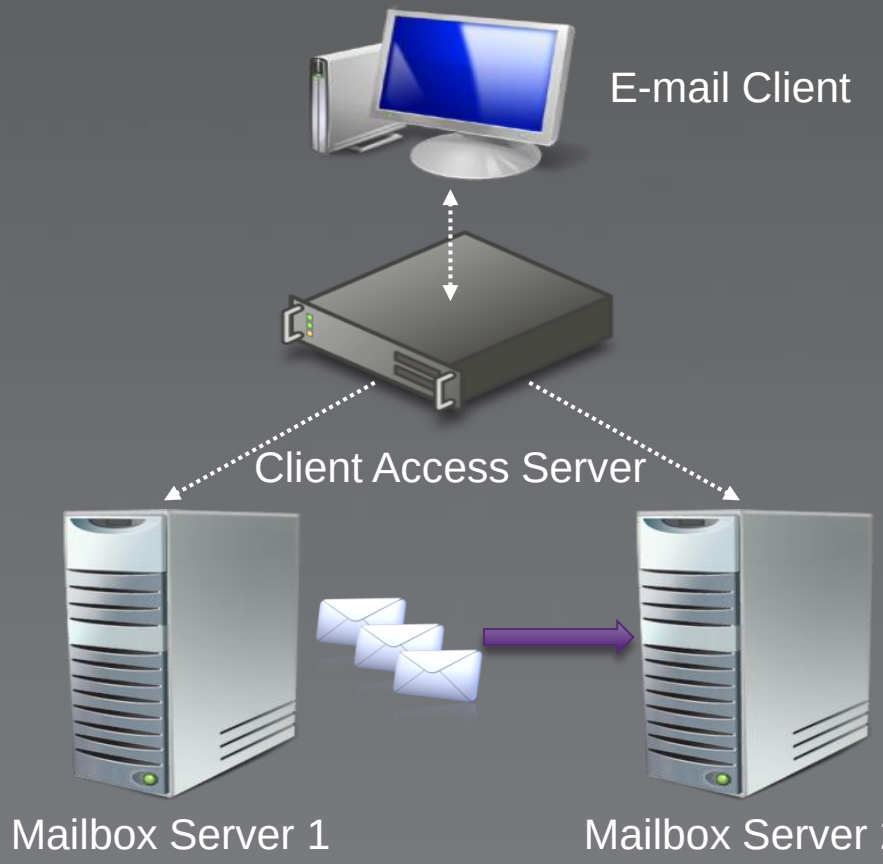
Service Level Agreement

Service availability during migration

Availability	Yearly Downtime allowed w/ 24-hour day	8-hour day
95%	438 h (18.25 d)	145.6 h (6.07 d)
99%	87.6 h (3.65 d)	29.12 h (1.21 d)
99.9%	8.76 h	2.91 h
99.99%	52.56 min	17.47 min
99.999% (“five nines”)	5.256 min	1.747 min
99.9999%	31.536 sec	10.483 sec

- 1GB mailbox could take 90 minutes or more to move with Exchange 2003 or 2007
  - Pain: User is disconnected for the duration
  - Pain: Your SLA for availability is not met

Online Move Mailbox
Minimal disruption



- Users remain online while their mailboxes are moved between servers
  - Sending messages
  - Receiving messages
  - Accessing entire mailbox
- Administrators can perform migration and maintenance during regular hours
- Also can be used to migrate users from on-premises server to Exchange Online

Exchange 2010 and Exchange 2007 SP2 Online
Exchange 2003 Offline

Finish and Move Mailbox

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Time to retire E2003 and E2007

Session Key Takeaways!

- Deployment Assistant, TechNet, and other resources provide a WEALTH of guidance, leverage them!
- Preparation Tools and ExRCA are VERY helpful in configuration validation
- Certificates, CAS Cutover, SMTP Cutover are the areas of most interest for orgs
- Anything else preventing your cutover, if not, start your transition!!!

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