

LEARN EXCHANGE – PART 1  
Getting Started with Exchange 2013

**Niels Engelen**  
System Engineer, Veeam Software  
[niels.engelen@veeam.com](mailto:niels.engelen@veeam.com)

**Johan Huttenga**  
System Engineer, Veeam Software  
[johan.huttenga@veeam.com](mailto:johan.huttenga@veeam.com)



# Session Overview

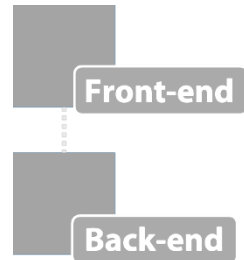
We'll be discussing:

- Exchange 2013 Architecture
- Deployment Planning
- Installing Exchange 2013

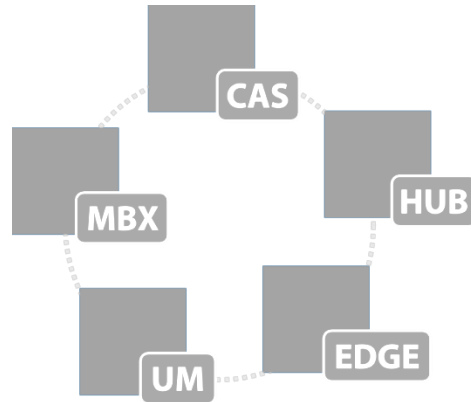
# Exchange Architecture

# Exchange Architecture history

2000 - 2003

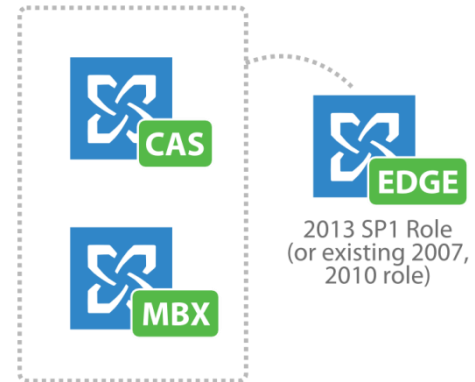


2007 - 2010



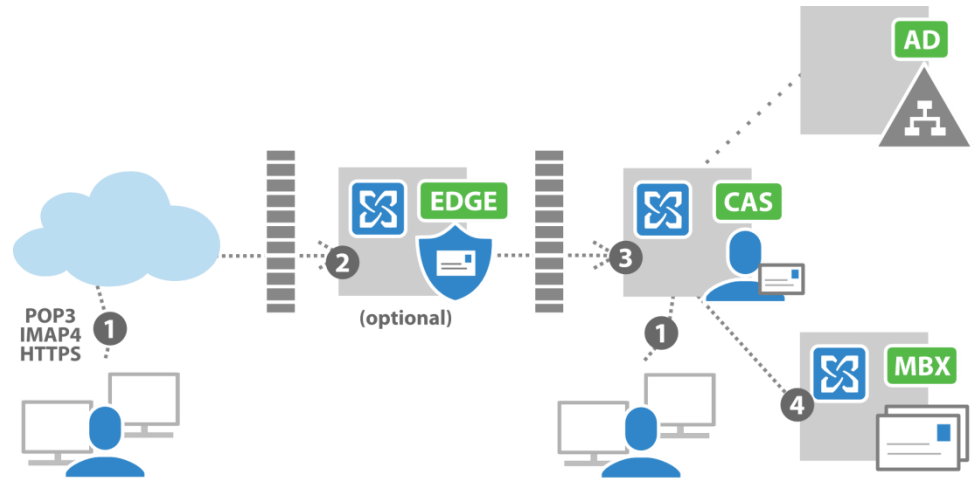
2013

**Multi-role server**  
(or two separate roles)



# Exchange 2013 Architecture

- Simplified more resilient architecture, (UM merged into CAS and MBX)
- Better integration with Lync and Sharepoint and more focus on compliance and eDiscovery.



Exchange role

## Edge Transport Server

- Ensures email security, and operates in a perimeter network where there is no AD access.
- Edge runs an AD LDS instance.
- You will install a 3<sup>rd</sup> party Antivirus and Antispam product on your Edge server, or even use a different mail security appliance instead of Edge.
- It is also possible to use Exchange Online Protection (EOP) to secure your email environment.



Exchange role

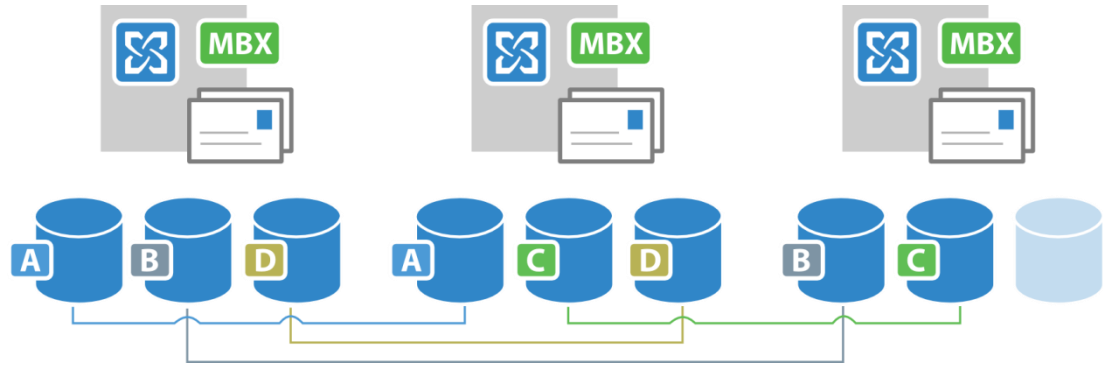
## Mailbox Server

- Holds mailbox databases which contain mailboxes and public folders mailboxes.
- You should use RAID sets to hold your mailbox databases.
- Mailbox databases have a maximum of 16TB limit, but 200 GB is best practice. Individual mailboxes can be up to 50GB in size.



# Database Availability Groups (DAG)

- Allows block and log-level mailbox database replication between servers (uses Windows Failover clustering, up to 16 servers per DAG, can have passive and lag copies.)
- Can be used for multi-site availability.





Exchange role

## Client Access Server

- Load-balanced servers, can use Windows NLB or Hardware Load Balancer (do not hold any data)
- Clients like Outlook, Outlook Web App (OWA), ActiveSync as well as those using IMAP and POP (if enabled) connect to CAS.
- Transport between servers uses RPC and MAPI over HTTP.



# Management Tools

- Web-based Exchange Administration Center (EAC)  
(<https://<server>/ecp/?ExchClientVer=15>)
- PowerShell (Exchange Management Shell)
- Exchange Toolbox
- Office 365 Best Practice Analyzer for Exchange 2013

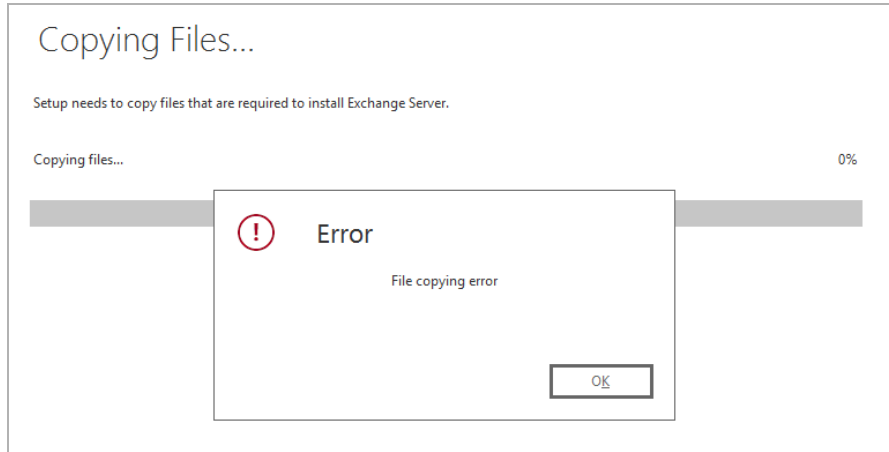
# Deployment Planning

# Prerequisites

- VMs running 2008 R2 SP1 or higher (2012 R2 is supported by Exchange 2013 SP1)
- RAM (8GB min) and disk allocated to the server depends on roles (ie. mailbox sizes)
- You can use a sizing calculator found online
- The Active Directory schema must be prepared for Exchange (need Server 2003 Forest Functionality Mode)
- Additional components: .NET 3.0, 4.5 and the Office 2010 Filter Pack, Unified Communications Managed API 4.0, and RSAT should be installed before Exchange installation.
- For co-existence: Update Rollup 10 for Exchange 2007 SP3 or Exchange 2010 SP3 must be installed on all servers, combined with Exchange 2013 CU2 or later.

# Exchange Patching

- Cumulative Updates (CUs) need to be checked in a test environment before being deployed in production.



# Virtualization Considerations

- Use the sizing calculator and allocate enough resources (with 10-20% free)
- Don't give Exchange more vCPUs than the total cores on the host machine.
- Using fixed disks and memory reservations to avoid resource over commit (Microsoft best practice).
- You can use cross-site DAGs in VMs, but remember that DAGs failover quickly upon disconnections or vMotions (you can modify these timeouts).
- Best practices for Exchange with VMware and Hyper-V can be found online:
- [http://www.vmware.com/files/pdf/Exchange\\_2013\\_on\\_VMware\\_Best\\_Practices\\_Guide.pdf](http://www.vmware.com/files/pdf/Exchange_2013_on_VMware_Best_Practices_Guide.pdf)
- [http://download.microsoft.com/download/4/A/C/4AC32FD3-220E-45DC-AA97-DBDBE19C15B2/Best\\_Practices\\_for\\_Virtualizing\\_and\\_Managing\\_Exchange\\_2013.pdf](http://download.microsoft.com/download/4/A/C/4AC32FD3-220E-45DC-AA97-DBDBE19C15B2/Best_Practices_for_Virtualizing_and_Managing_Exchange_2013.pdf)

# Installing Exchange

# Installing Exchange in a Clean Forest

- You can only have one Exchange organization in a Forest.
- Normally there will be older versions installed, requiring you to plan co-existence.
- Use the latest CU for the install wherever possible, and remember to test this in a lab first.



# Preparing Active Directory

- Extend the schema (need Schema and Enterprise Admin rights,  
Need to be logged into the same AD site as the schema master in the forest you wish to update.

```
Setup.exe /PrepareSchema /IAcceptExchangeServerLicenseTerms
```

Use Repadmin to make sure schema replication is complete.

- Prepare active directory (need Enterprise Admin rights)

```
Setup.exe /PrepareAD /OrganizationName:"<organization name>" /IAcceptExchangeServerLicenseTerms
```

Use Repadmin to make sure schema replication is complete.

- Prepare domains (need Enterprise Admin rights)

```
Setup.exe /PrepareAllDomains /IAcceptExchangeServerLicenseTerms
```

Use Repadmin to make sure schema replication is complete.

# Installing Prerequisites

## - For MBX and CAS servers:

```
Install-WindowsFeature AS-HTTP-Activation, Desktop-Experience, NET-Framework-45-Features, RPC-over-HTTP-proxy, RSAT-Clustering, RSAT-Clustering-CmdInterface, RSAT-Clustering-Mgmt, RSAT-Clustering-PowerShell, Web-Mgmt-Console, WAS-Process-Model, Web-Asp-Net45, Web-Basic-Auth, Web-Client-Auth, Web-Digest-Auth, Web-Dir-Browsing, Web-Dyn-Compression, Web-Http-Errors, Web-Http-Logging, Web-Http-Redirect, Web-Http-Tracing, Web-ISAPI-Ext, Web-ISAPI-Filter, Web-Lgcy-Mgmt-Console, Web-Metabase, Web-Mgmt-Console, Web-Mgmt-Service, Web-Net-Ext45, Web-Request-Monitor, Web-Server, Web-Stat-Compression, Web-Static-Content, Web-Windows-Auth, Web-WMI, Windows-Identity-Foundation, RSAT-ADDS
```

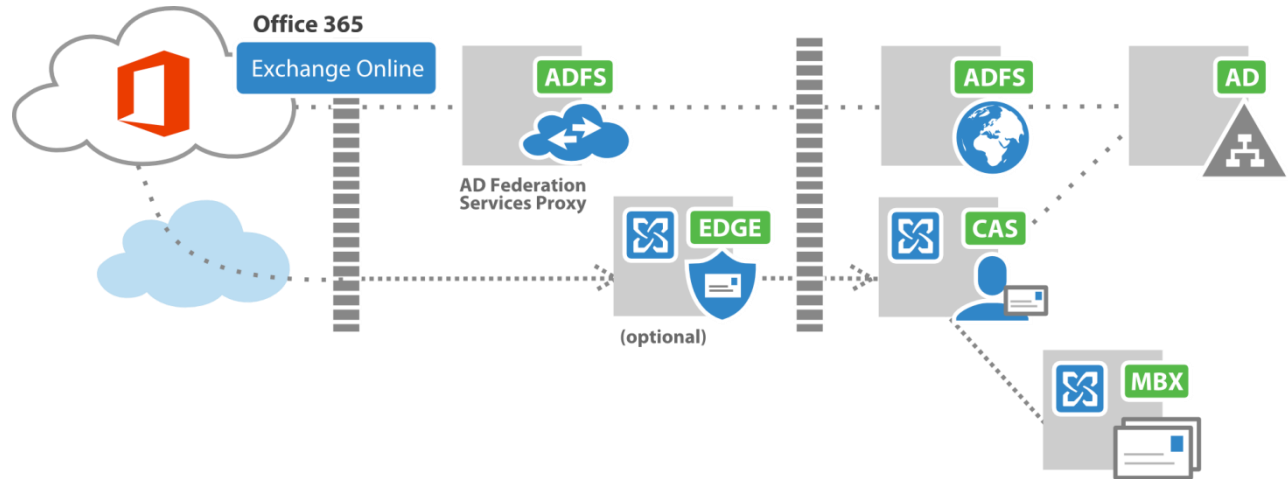
also download and install UCMA v4: <http://www.microsoft.com/en-us/download/details.aspx?id=34992>

## - For Edge Transport servers:

```
Install-WindowsFeature ADLDS
```

# Office 365 Migration and Hybrid Mode

- You can run Exchange locally while also having part of it run in the cloud in Office 365. We won't discuss how this works, but think of it as having a multi-site deployment.



# Further Reading and References

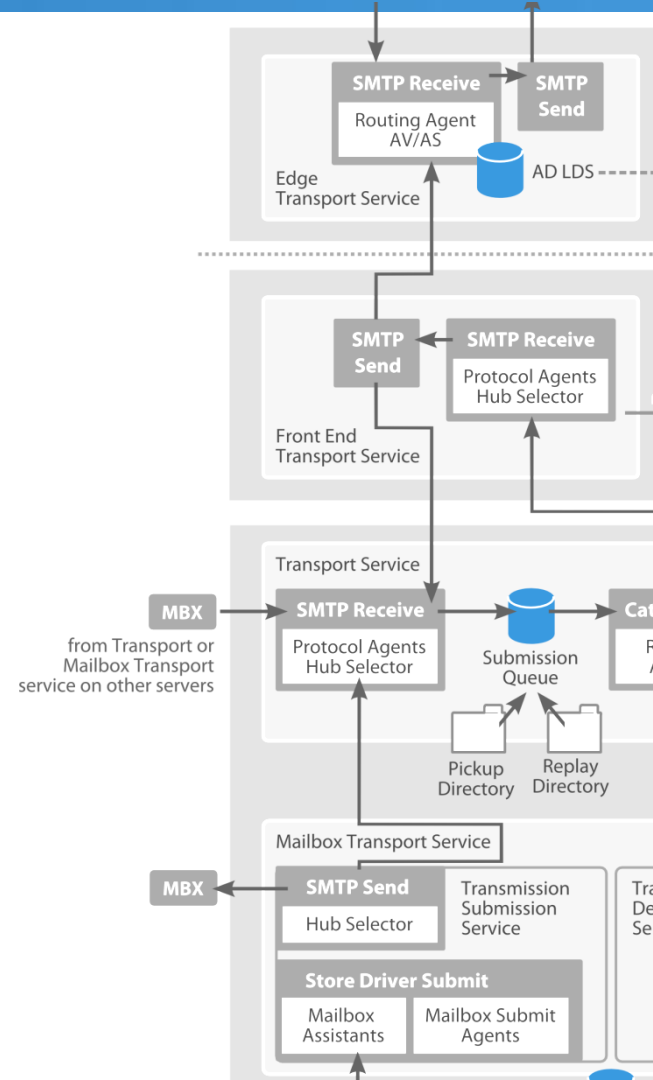
We will be doing a second and third part of this series, and will publish some supporting material as well at [veeam.com](http://veeam.com).

However if you'd like there is a lot more detailed information available (some of which we used to create this series):

<http://microsoftvirtualacademy.com>

<http://blogs.technet.com/b/exchange/>  
(you had me at EHLO)

The sizing calculator can be found here:  
<http://blogs.technet.com/b/exchange/archive/2013/05/14/released-exchange-2013-server-role-requirements-calculator.aspx>



## Next time

We'll be discussing:

- Exchange Management
- Troubleshooting Mail Flow
- Compliance Policies and Email Archiving
- Monitoring Exchange using the Event Viewer and SCOM

WHEN

**Sep 4<sup>th</sup>**

16:00 CET

## Questions?

**Niels Engelen**

System Engineer, Veeam Software  
[niels.engelen@veeam.com](mailto:niels.engelen@veeam.com)

**Johan Huttenga**

System Engineer, Veeam Software  
[johan.huttenga@veeam.com](mailto:johan.huttenga@veeam.com)