



# **CROSS-FOREST-FREE / BUSY AND CROSS-FOREST-DELEGATION**

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Whitepaper v2

**NETsec**

January 2014

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## Introduction

This whitepaper helps you to configure and to troubleshoot getting Free/Busy information from your partners' organization(s) and to work with delegated calendars in a cross-forest environment - without using the Microsoft Federation Gateway. It can be used additionally to the manual of the software GALsync from NETsec, which provides an easy synchronization of directory objects.

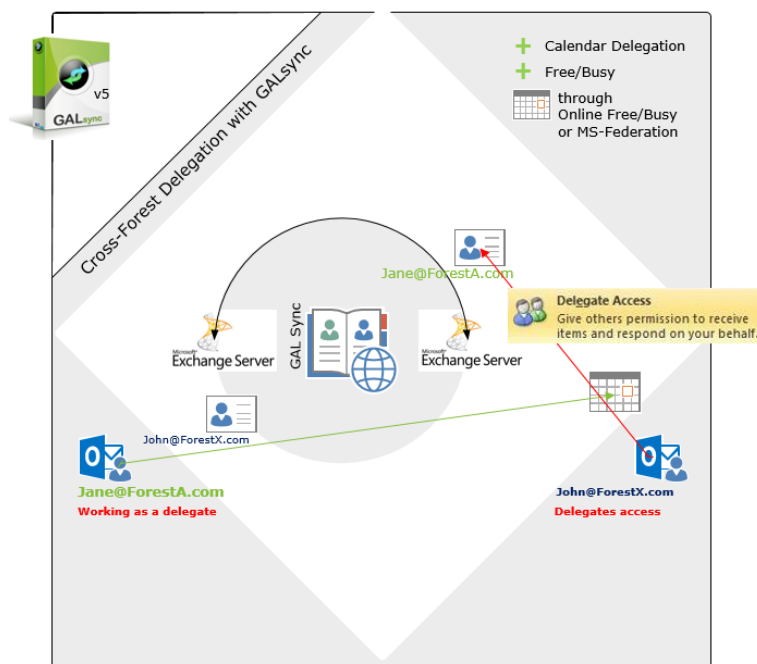
## Used Terms

**Cross-Forest-Free/Busy:** with this technology your people can see free/busy information of people in another Exchange organization (you have no Active Directory domain trust with). Technically you need only a TCP/IP connection on port 443 (https) between the organizations.

**Cross-Forest-Delegation:** if you use this technology your people can see free/busy information of another Exchange organization. Additionally your people can manage calendars of people in the other organization in the same way they use delegated calendars internally. In that case you need a domain trust between the Active Directory domains. Technically quite a range of TCP/IP ports are required for communication between the organizations (see chapter

*Ports Required for Trusts in Domain and Forest Trust Tools and Settings,*

[http://technet.microsoft.com/En-Us/Library/Cc756944\(V=Ws.10\).Aspx](http://technet.microsoft.com/En-Us/Library/Cc756944(V=Ws.10).Aspx)).



**MS Federation / Federated Sharing:** This technique uses the Microsoft Federation Gateway, a free cloud-based service, as the trust broker

between two federated organizations. To enable federated sharing, each organization must establish a one-time federation trust with the Microsoft Federation Gateway and configure either an organization relationship or sharing policies with each other.

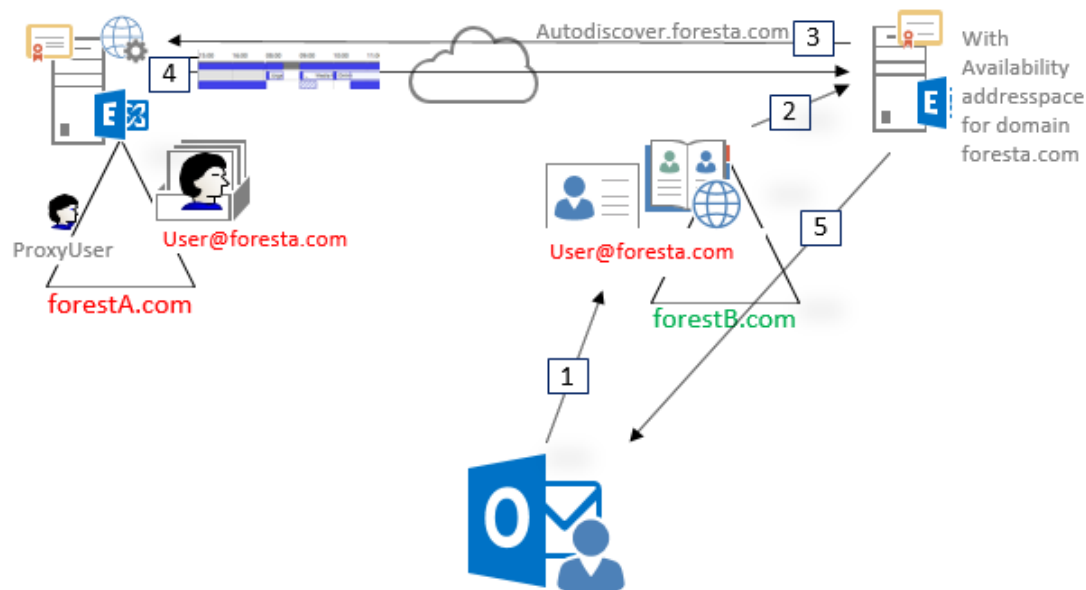
### **GALsync and Free/Busy**

In Exchange 2003 to Exchange 2010 you could use system public folders for a free/busy query. We implemented this architecture in GALsync up to version 4.

Since Exchange 2007 natively the *Exchange Availability Service* as a Web Service is used for Free/Busy queries. Since Exchange 2013 and Exchange Online there are no system public folders for Free/Busy information available anymore.

GALsync 5 offers cross-forest directory synchronization. Additionally we can support you with our consulting services to configure cross-forest-Free/Busy or cross-forest-delegation.

How it works (high-level)



Step 1: The client in the remote forest picks a galsynched contact from the GAL and makes an F/B request.

Step 2: The Availability Service at the remote site checks if there is an availabilityaddressspace entry regarding the SMTP domain based on the primary SMTP address of the contact.

Step 3: The Availability Service tries to contact the Autodiscover service of the source forest to get the address of the source Availability service.

Step 4: The availability service in the source forest gets the required Free/Busy information from the given mailbox and sends the answer back to the remote forest.

### \*\*\* General Troubleshooting \*\*\*

#### Common Tools

These are some additional tools and resources for diagnosing issues with Free/busy:

- Hybrid Environment Free/busy Troubleshooter  
<http://support.microsoft.com/common/survey.aspx?scid=sw%3ben%3b3526&showpage=1>
- Remote Connectivity Analyzer  
<https://testconnectivity.microsoft.com/>
- Outlook Connectivity Guided Walkthrough  
<http://support.microsoft.com/common/survey.aspx?scid=sw;en;3601&showpage=1>
- The Microsoft Online Services Diagnostics and Logging (MOSDAL) Support Toolkit  
<http://www.microsoft.com/download/en/details.aspx?id=626>
- Office 365  
[Video: Troubleshooting Issues with Free/Busy Information in Office Outlook Clients for Office 365](#)

#### Common Procedures

- Increase the eventlog level at Exchange servers:  
Get-EventLogLevel | Set-EventLogLevel -Level expert  
  
If you do not want to get a lot of results you should reduce the services to the following:  
Set-EventLogLevel "MSExchange Autodiscover\Core" -Level expert  
Set-EventLogLevel "MSExchange Autodiscover\Web" -Level expert  
Set-EventLogLevel "MSExchange Autodiscover\Provider" -Level expert  
Set-EventLogLevel "MSExchange Availability\Availability Service" -Level expert  
Set-EventLogLevel "MSExchange Availability\Availability Service General" -Level expert  
Set-EventLogLevel "MSExchange Availability\Availability Service Authentication" -Level expert  
Set-EventLogLevel "MSExchange Availability\Availability Service Authorization" -Level expert
- Open Outlook in protocol mode  
<http://support.microsoft.com/kb/300479?wa=wsignin1.0>
- Note: Outlook 2013 seems not to use the fblog\*.log as in earlier versions like in Outlook 2010, so troubleshooting with OLK13 is much more difficult. Use 2010 or 2007!
- Run your Outlook clients in online mode, not in cached mode to keep your testing results "clean".
- Outlook together with the /cleanfreebusy switch
- Run *E-mail AutoConfiguration tool* to determine whether Outlook can connect to the Autodiscover service  
To run the test:
  - While Outlook is running, hold down the CTRL key, right-click the Outlook icon in your system tray or notification area (lower right corner of computer screen), and then select Test E-mail AutoConfiguration.
  - Enter your email address and password.
  - Clear the checkboxes next to *Use Guesssmart* and *Secure Guesssmart Authentication*. Make sure that *Use AutoDiscover* is selected.
  - Click the *Test* button. It may take up to a minute before the test is complete.



## Deployment Guide

### Matrix - Overview

Source Org	Target Org	Technique to get Free/Busy	version to sync GAL
2003	2003	Public folders	GALsync v4 <sup>0</sup>
2003	2007	Public folders	GALsync v4 <sup>0</sup>
2003	2010	Public folders	GALsync v4 <sup>0</sup>
2003	2013	Not supported	GALsync v4 <sup>0</sup> + GALsync v5 <sup>1</sup>
2003	Exchange Online	Not supported	GALsync v4 <sup>0</sup> + GALsync v5 <sup>1</sup>
2007	2003	Public folders	GALsync v4 <sup>0</sup>
2007	2007	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2007	2010	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2007	2013	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2007	Exchange Online	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2010	2003	Public folders	GALsync v4 <sup>0</sup>
2010	2007	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2010	2010	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup> GALsync v5 <sup>1</sup>
2010	2013	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2010	Exchange Online	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2013	2003	Not supported	GALsync v4 <sup>0</sup> + GALsync v5 <sup>1</sup>
2013	2007	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2013	2010	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2013	2013	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
2013	Exchange Online	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
Exchange Online	2003	Not supported	GALsync v4 <sup>0</sup> + GALsync v5 <sup>1</sup>
Exchange Online	2007	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
Exchange Online	2010	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
Exchange Online	2013	Cross-Forest Free/Busy <sup>2</sup> or MS Federation <sup>3</sup>	GALsync v5 <sup>1</sup>
Exchange Online	Exchange Online	supported <sup>4</sup>	GALsync v5 <sup>1</sup>

Legend:

<sup>0</sup> GALsync v4 provides an optional feature which copies all free/busy information from Exchange public folder store.

<sup>1</sup> Free/Busy queries can be performed by using GALsync v5 to sync the objects and using Cross-Forest Free/Busy or MS Federation to get free/busy information

<sup>2</sup> This technique is based on Exchange Web Services (EWS). If you already provide support for mobile devices with ActiveSync or Outlook Anywhere it should be no problem to configure this.

<sup>3</sup> This technique is based on Exchange Web Services (EWS). Additionally you have to configure a trust to a Microsoft Trust Center.

<sup>4</sup> described below

## Exchange 2003

Scenarios with dedicated Exchange 2003 environments are not covered in this Whitepaper.

If you use Exchange 2003 (or Exchange 2007) combined with Exchange 2010 SP1 the Exchange 2010 SP1 mailbox server must host a Public Folder database and is the ONLY replica server for Free/Busy folder.

## Links

- Cross Org Availability using Federation Trust and Organization Relationship  
<http://blogs.technet.com/b/exchange/archive/2011/06/28/cross-org-availability-using-federation-trust-and-organization-relationship.aspx>
- free/busy sharing between Exchange 2003 and Exchange 2010 organizations  
[http://technet.microsoft.com/en-us/library/hh310374\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/hh310374(v=exchg.141).aspx)
- Understanding Shared Free/Busy in Exchange 2003 Hybrid Deployments  
[http://technet.microsoft.com/en-us/library/hh779664\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/hh779664(v=exchg.141).aspx)

## Exchange On Premise <-> Exchange On Premise

All scenarios between any Exchange organization using 2007/2010 or 2013 are covered in this whitepaper.

## Exchange On Premise <-> Office 365

To enable the shared free/busy feature in a hybrid deployment we recommend the technique *MS Federation*.

Read in the appendix of this document the chapter *Cross-Forest Free/Busy with MS-Federation*

## Office 365 <-> Office 365

Read in the appendix of this document the chapter *Cross-Forest-Free/Busy and Cross-Forest-Delegation between dedicated Exchange Online (only) / Office 365 organizations*

## Technical Modules

This chapter provides you with more details considering the different requirements.

### Readiness Analyzer

In a first step you should validate if your environments are ready. Simply follow these questions:

Topic	Validate	On error . . .
General	Does the Exchange and Domain Controllers <i>eventlogs</i> indicate any critical errors? Does the <i>Exchange Best Practice Analyzer</i> indicate any critical errors? Does <i>dcdiag</i> on the domain controllers indicate any critical errors?	Read chapter <i>environment</i>
Network	Are you able to nslookup the local and remote environment from both sides? Are you able to nslookup autodiscover.<remoteSMTP>.<domain> Are you able to send SMTP-Messages between the different environments?	Read chapter <i>Connecting</i>
Webservices and Certificates	Can you connect to the Autodiscover service by using the E-mail AutoConfiguration tool in Outlook? Can you run test-outlookwebservice using a local account without errors? Can you run test-outlookwebservice using a remote account without errors? Do your environment (i.e. the CAS servers trust the root-certificate of the remote forest?	Read chapter <i>Webservices and certificates</i>
GALsync	Can you synchronize objects from source environment to the remote forest. Are the objects created as contacts there? Can Outlook / OWA clients in remote forest see the synchronized objects in GAL?	Read chapter <i>Synchronize with GALsync</i>
Availability	Did you configure AvailabilityAddressSpace and AvailabilityConfig correctly?	Read chapter <i>Cross-Forest</i>

## Environment

### Description

This step must be performed

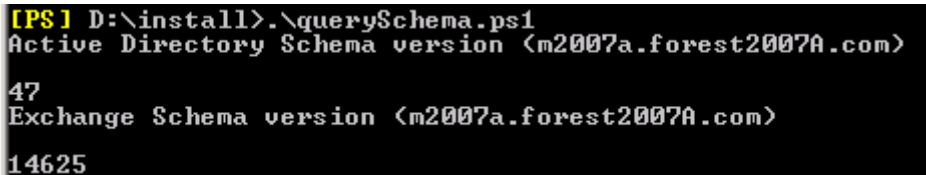
- If you are working in an internal Test-Lab or if your organizations are connected by internet.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

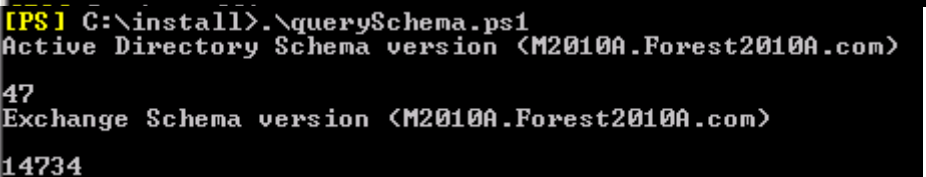
In this step you collect some information about your own and your partners' environment. Please note


- Name of the forest
- Name of the domains in the forest
- Name of sites
- Name of Domain Controllers and Global Catalogs
- Version of the Active Directory Schema
- Names of all Exchange CAS Servers
- Exchange Server versions (see possible values in appendix or run PS script querySchema.ps1)
- Local firewall-rules on the Exchange servers

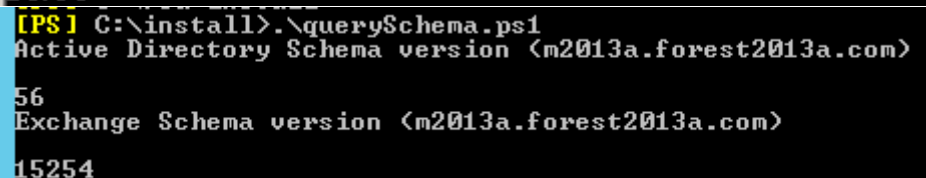
```
Get-Exchangeserver | fl name, edition, admindisplayversion,  
serverrole, site
```

### Screenshots

2007a 

2010a 

2010b 

2013a 

### \*\*\* Troubleshooting Checklist \*\*\*

- Does dcdiag on your DCs or does Exchange Best Practice Analyzer (exbpa) on your Exchange servers indicate any errors, which could be related to your issue?
- Are the clients in both forests able to get free/busy information of other clients in the same domain?
- Are the clients in both forests able to send mails to clients in the remote domain by inserting their SMTP-address into the TO: field of the message?
- Are all required ports open?  
Read article "Exchange, Firewalls, and Support"  
<http://blogs.technet.com/b/exchange/archive/2013/02/18/exchange-firewalls-and-support-oh-my.aspx>

### Required Permissions

This step must be performed

- If you are working in an internal Test-Lab.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest Delegation

#### Administrative Permissions

*You must be prepared to run some of the steps as a user with sufficient privileges. Some configurations you have to make require an account which is member of the Exchange Organization Management and/or Active Directory Domain Administrators group.*

Please note the account you want to use.

#### Default Calendar permissions

*The permissions should be set to **Free/Busy time** to be displayed.*

### \*\*\* General Troubleshooting \*\*\*

- Check the Default Calendar permissions for the mailbox(es) you would like to view Free/Busy information for.  
Right-click on a Calendar > Properties > Permissions. The permissions should be set to Free/Busy time to be displayed.

## Connecting

### General Name Resolution

#### Description

This step must be performed

- If you are working in an internal Test-Lab or if your organizations are connected by internet.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

You must have name resolution working so that the Exchange servers know where to get information from.

*Your environment must be able to get a path to your partners' domain. Usually this is implemented in your own internal DNS server as a conditional forwarder (if you use an internal test environment) or it is configured in the public DNS of your partner.*

#### If you use an internal Test-LAB

To configure a DNS server to use forwarders using the Windows interface (Windows 2003)

1. Open DNS Manager.
2. In the console tree, click the applicable DNS server.
3. On the Action menu, click Properties.
4. On the Forwarders tab, under DNS domain, click a domain name.
5. Under Selected domain's forwarder IP address list, type the IP address of a forwarder, and then click Add.

To configure a DNS server to use forwarders using the Windows interface (Windows 2008)

1. Open DNS Manager.
2. In the console tree, click the applicable DNS server, then select node Conditional Forwarders
3. Right click the node and select New Conditional Forwarder
4. Follow the wizard

Check by

```
C:\Nslookup <partnersdomain>
```

If your organizations are connected by internet

Your CAS servers (respective the ISA/TMG which publishes the Web Services) must be able to resolve public DNS records of your partners' organization.

Check by

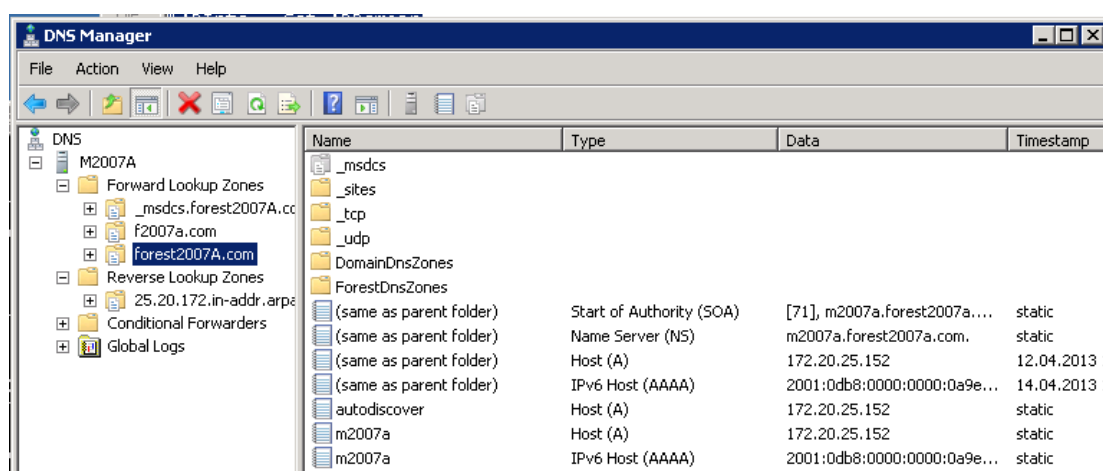
```
Nslookup <partnersdomain>
```

**Note:** If name resolution against your partners' site is not possible, you have to solve this issue before continuing.

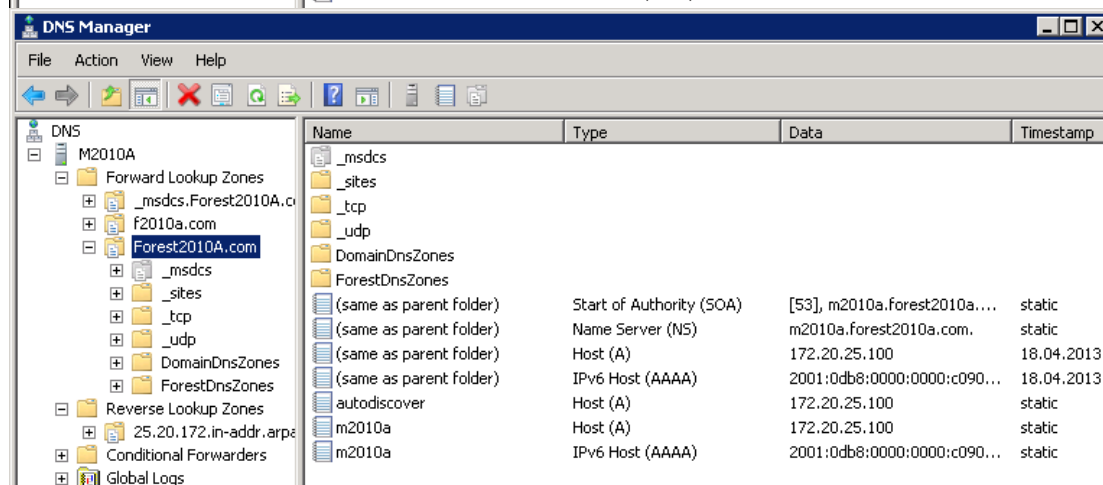
## Screenshots

### Zones

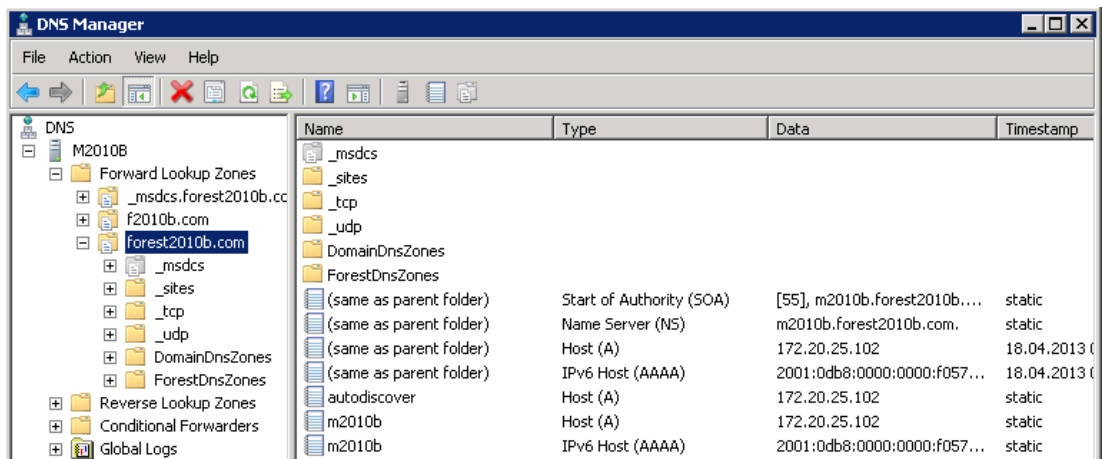
2007a



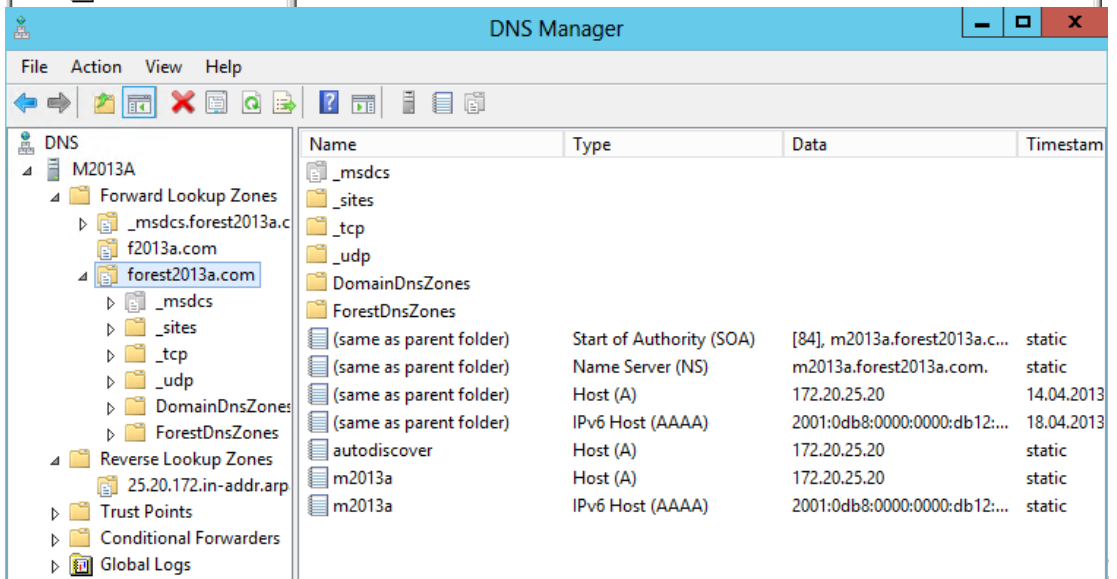
2010a



2010b



2013a



### \*\*\* Troubleshooting Checklist \*\*\*

- Can you resolve the internal names of the Domains?
- Run DCDiag /test:DNS /e /v
- Can you resolve the external published names of the Domains?
- Can you resolve the external published MX records of the Domains?

## Exchange SMTP Connectors

### Description

This step must be performed

- If you are working in an internal Test-Lab or if your organizations are connected by internet.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation



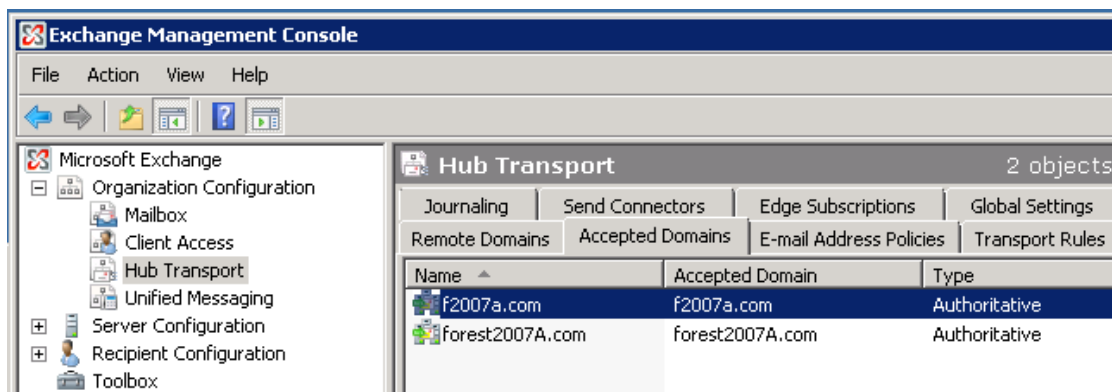
You must have all appropriate *Send Connectors* and *Accepted Domains* in place

*Exchange CAS servers must have a route to send SMTP messages to the partners' organizations. Like you configure DNS Forwarding or public DNS on TCP/IP level, you configure Send Connectors on Exchange level.*

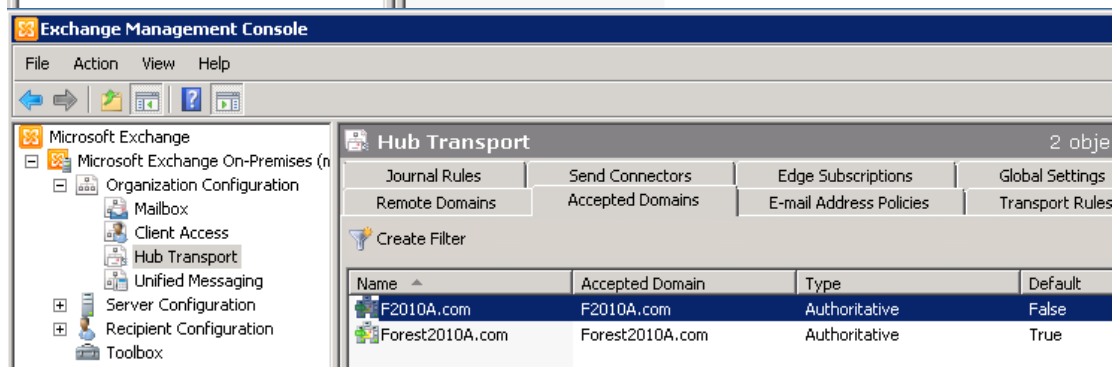
## Screenshots

### Accepted Domains

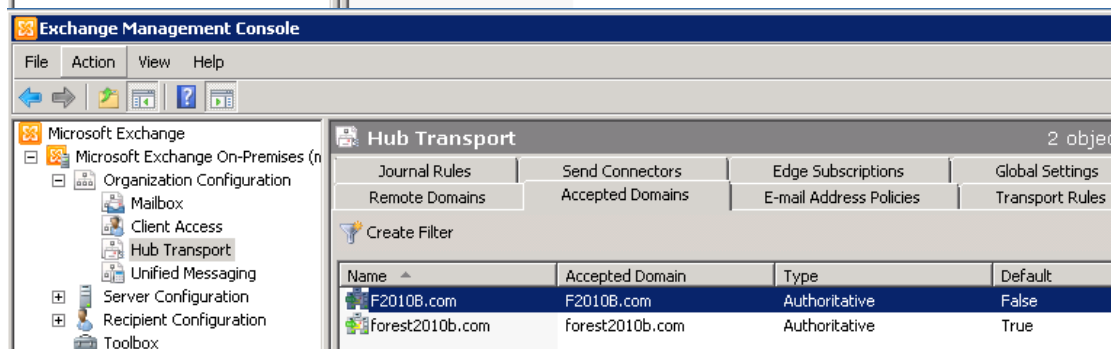
2007a



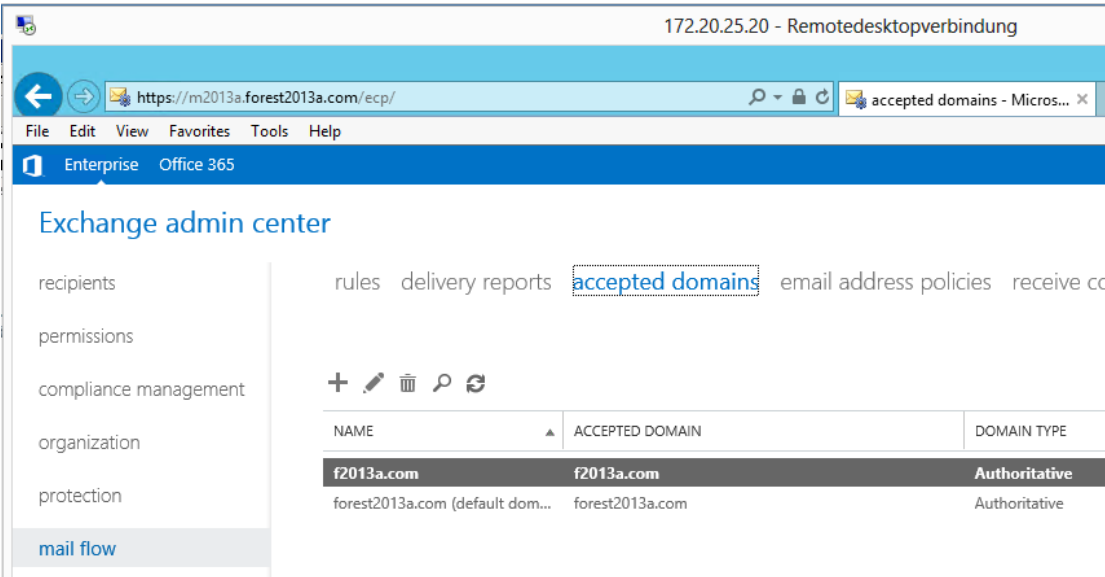
2010a



2010b

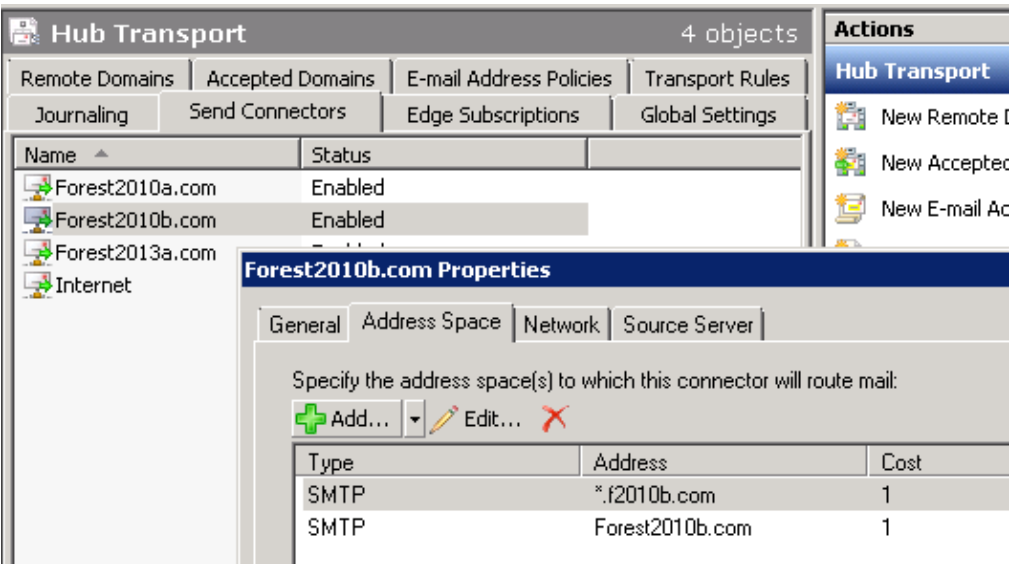


2013a

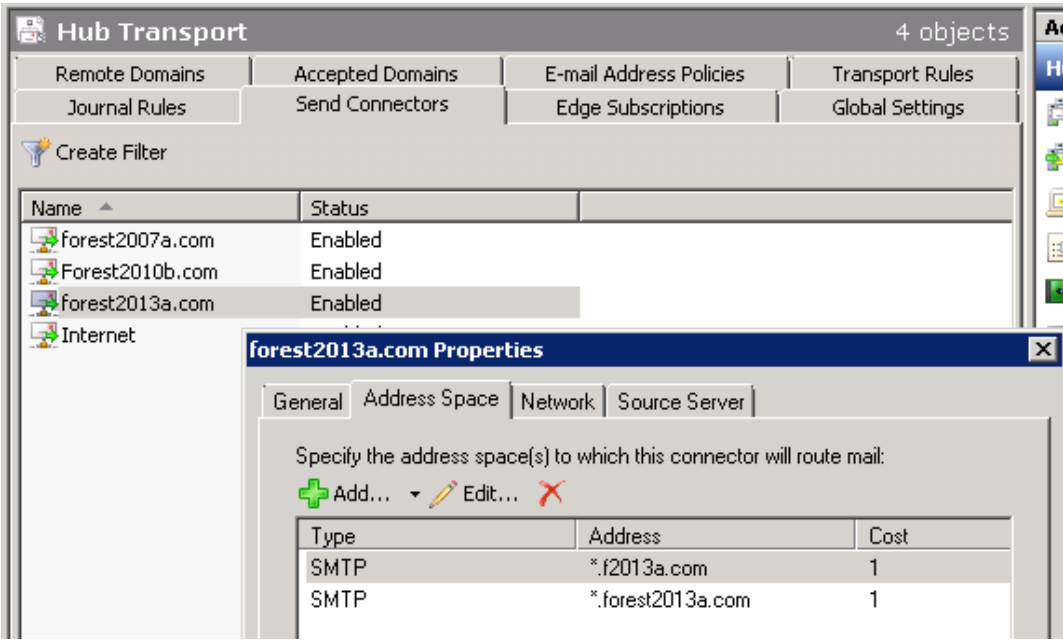


## Send Connectors (multiple scopes)

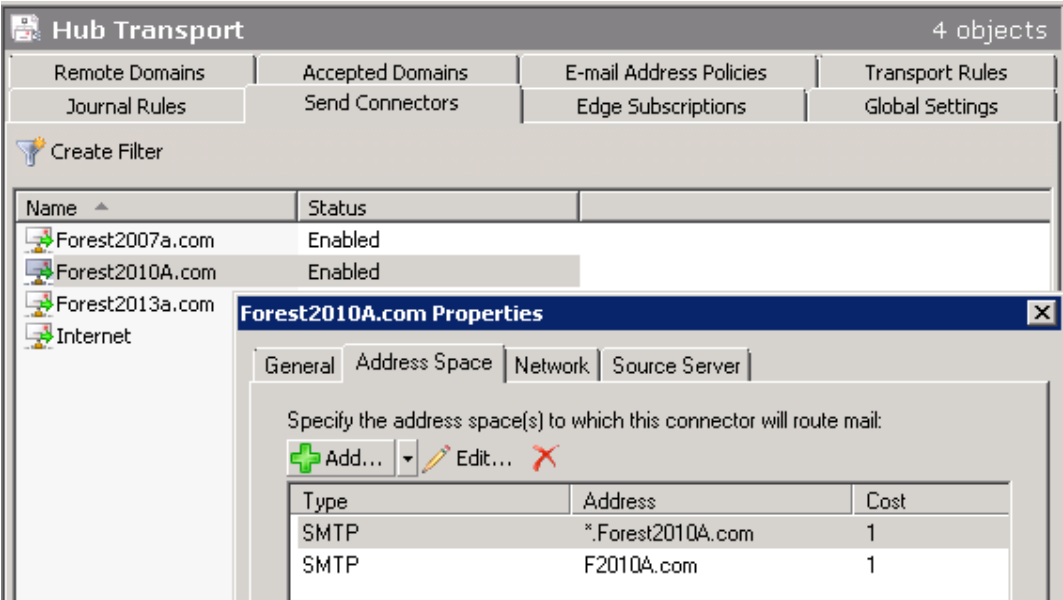
2007a



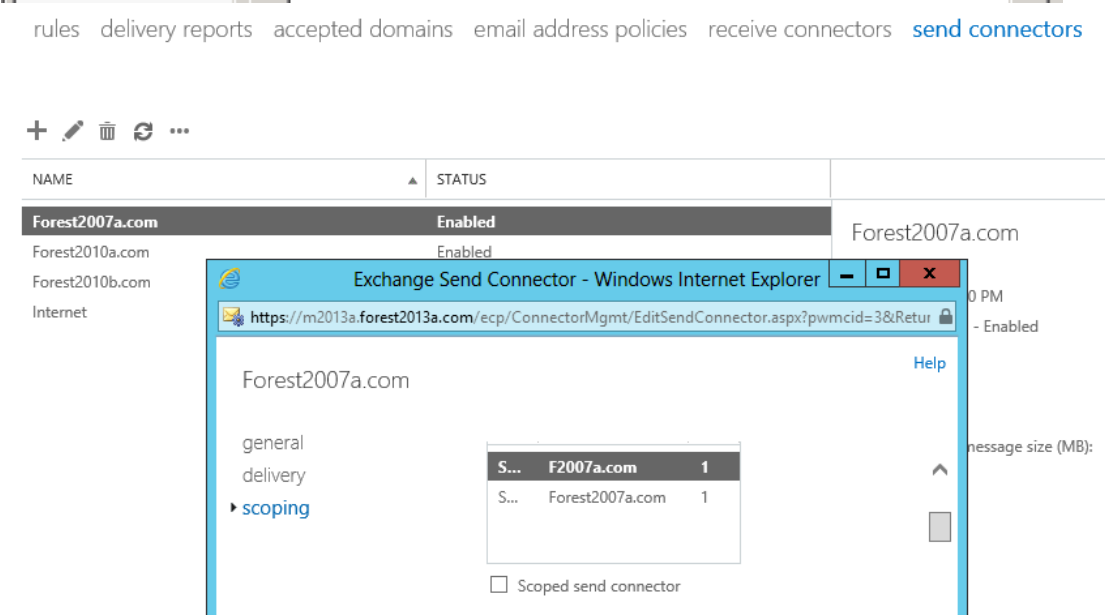
2010a



2010b



2013a



### \*\*\* Troubleshooting Checklist \*\*\*

- Are clients able to send/receive mails (between the 2 forests) by sending mail using the SMTP address of the recipient
- Are clients able to send/receive/accept/decline meeting invitations (between the 2 forests) by sending mail using the SMTP address of the recipient

## Autodiscover Name Resolution

### Description

This step must be performed

- If you are working in an internal Test-Lab or if your organizations are connected by internet.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

You must have an autodiscover A-record in DNS

*Clients discover other Exchange services by getting information which are offered in the file autodiscover.xml and published by a CAS server's virtual directory autodiscover.*

### If you use an internal Test-LAB

There must be an autodiscover A-record present in your internal DNS which points to the IP representing your Exchange Web Services, i.e. your Exchange CAS server. Usually you have a DNS zone integrated into Active Directory. This zone name represents your Active Directory domain, but not necessarily your SMTP domain. If your Active Directory domain name is different from your SMTP domain name you have to configure an additional zone which represents this SMTP domain.

To configure a new zone in DNS using the Windows interface

1. Open DNS Manager.
2. In the console tree, right-click a DNS server, and then click New Zone to open the New Zone Wizard.
3. Follow the instructions to create a new primary, secondary, or stub zone.

### If your organizations are connected by internet

There must be an autodiscover A-record present in your public DNS where your MX record is hosted too. The autodiscover record points to the IP which represents your Exchange Web Services, i.e. your Exchange CAS server, your Exchange array or your mail gateway (i.e. ISA/TMG).

Note: If you use a mail-gateway or ISA/TMG, autodiscover must be explicitly published to the Internet.

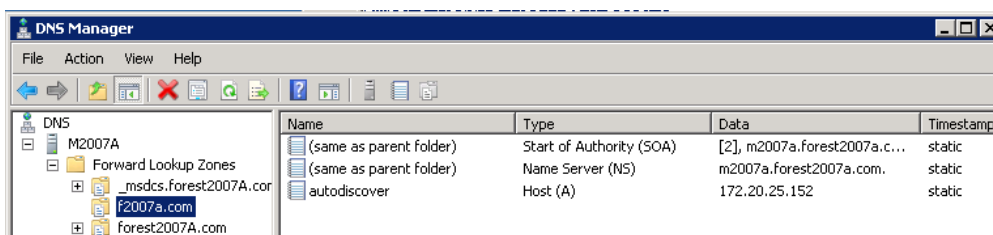
Execute nslookup autodiscover.yoursmtp.domain

**Note:** If no autodiscover record can be found, you have to solve this issue before continuing.

### Screenshots

#### Additional SMTP-Domains

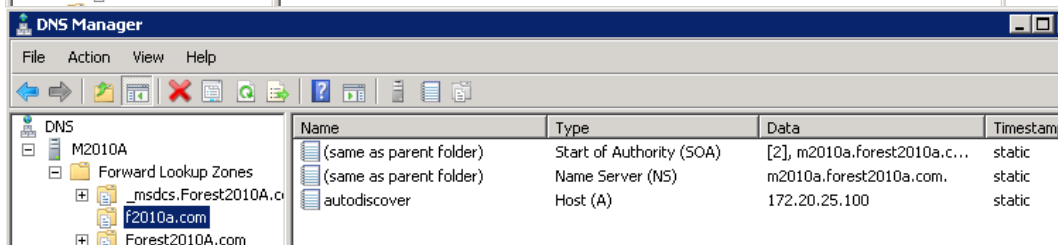
2007a



The screenshot shows the DNS Manager console for M2007A. The left pane shows the hierarchy: DNS > Forward Lookup Zones > \_msdcs.forest2007a.com > f2007a.com. The right pane displays a table of records for f2007a.com.

Name	Type	Data	Timestamp
(same as parent folder)	Start of Authority (SOA)	[2], m2007a.forest2007a.c...	static
(same as parent folder)	Name Server (NS)	m2007a.forest2007a.com.	static
autodiscover	Host (A)	172.20.25.152	static

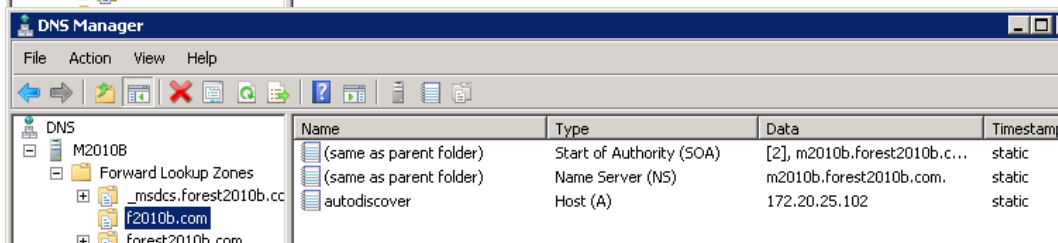
2010a



The screenshot shows the DNS Manager console for M2010A. The left pane shows the hierarchy: DNS > Forward Lookup Zones > \_msdcs.Forest2010A.c... > f2010a.com. The right pane displays a table of records for f2010a.com.

Name	Type	Data	Timestamp
(same as parent folder)	Start of Authority (SOA)	[2], m2010a.forest2010a.c...	static
(same as parent folder)	Name Server (NS)	m2010a.forest2010a.com.	static
autodiscover	Host (A)	172.20.25.100	static

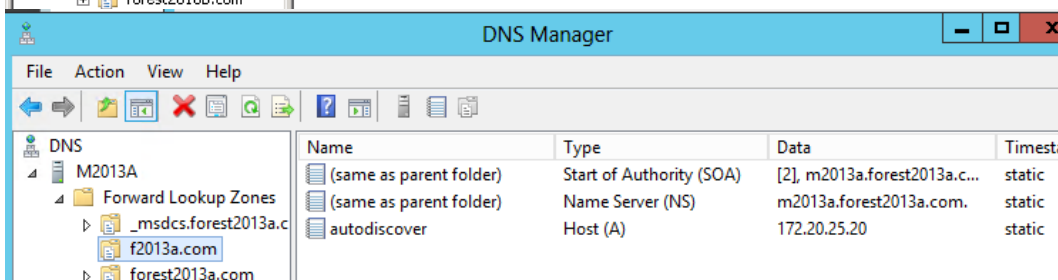
2010b



The screenshot shows the DNS Manager console for M2010B. The left pane shows the hierarchy: DNS > Forward Lookup Zones > \_msdcs.forest2010b.cc > f2010b.com. The right pane displays a table of records for f2010b.com.

Name	Type	Data	Timestamp
(same as parent folder)	Start of Authority (SOA)	[2], m2010b.forest2010b.c...	static
(same as parent folder)	Name Server (NS)	m2010b.forest2010b.com.	static
autodiscover	Host (A)	172.20.25.102	static

2013a



The screenshot shows the DNS Manager console for M2013A. The left pane shows the hierarchy: DNS > Forward Lookup Zones > \_msdcs.forest2013a.c... > f2013a.com. The right pane displays a table of records for f2013a.com.

Name	Type	Data	Timestamp
(same as parent folder)	Start of Authority (SOA)	[2], m2013a.forest2013a.c...	static
(same as parent folder)	Name Server (NS)	m2013a.forest2013a.com.	static
autodiscover	Host (A)	172.20.25.20	static

### \*\*\* Troubleshooting Checklist \*\*\*

- Is autodiscover for every SMTP domain configured in DNS
- nslookup autodiscover.remote.domain
- ipconfig /DisplayDNS | find "autodiscover"

## Certificates

If you already published your certificates externally (i.e. by using an official 3<sup>rd</sup>-party SAN certificate) you do not need to create, bind and trust new certificates. Validate this by using the *Remote Connectivity Analyzer*.

If you do not publish your certificates externally but you activated Outlook Anywhere (i.e. using ActiveSync) and deployed certificates through your own CA you do not need to create, bind and trust new certificates. But you have to deploy the Exchange certificates in the remote environment.

### Create Certificates

This step must be performed

- If you are working in an internal Test-Lab
- You do not use SAN certificates on the test Exchange CAS server
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

Your organization now must be prepared to use the appropriate SAN-certificates on all Exchange CAS servers.

*Exchange servers of different organizations communicate in a trusted manner with each other by validating their SSL certificates. So all CAS servers have to use a SAN certificate (containing special subjects) and they must be able to trust the certificates of the other side.*

We propose to create one certificate which can be used by all CAS-servers. This should include the FQDN of the CAS Servers, their Hostnames and the autodiscover FQDN. You can use SelfSSL.exe on a 32Bit system or alternatively the makecert.exe tool to create a self-signed certificate.

### Links

Selfssl: [http://blog.exchange-addict.com/2012/11/cross-forest-freebusy-simple-version\\_13.html](http://blog.exchange-addict.com/2012/11/cross-forest-freebusy-simple-version_13.html)  
makecert: <http://social.msdn.microsoft.com/Forums/en-US/netfxnetcom/thread/162a1ab6-23ae-4616-bebc-bbe225407b78/>

Run the software selfssl from the command line like:

1. selfssl7.exe /N  
cn=autodiscover.forest2010a.com;cn=autodiscover.f2010a.com;cn=m2010a.forest2010a.com;cn=m2010a /K 1024 /V 18250 /X /F c:\forest2010a\_2nd.pfx /W  
Pass1Word /Q
2. selfssl7.exe /N  
cn=autodiscover.forest2010b.com;cn=autodiscover.f2010b.com;cn=m2010b.forest2010b.com;cn=m2010b /K 1024 /V 18250 /X /F c:\forest2010b\_2nd.pfx /W  
Pass1Word /Q

**Note:** If you do not have valid SAN certificates present on both sides, you have to solve this issue before continuing.

### Bind Certificates

This step must be performed

- If you are working in an internal Test-Lab
- You do not use SAN certificates on the test Exchange CAS server
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

Your Exchange CAS Servers must bind the newly created SAN certificate to the IIS services of all CAS Servers.

*Certificates are bound to specific services. Because Availability Service which provides Free/Busy information is done by the IIS, the SSL certificate must be bound to that service. All other services will preserve their bound certificates.*

### Import an Exchange certificate (2010)

1. In the console tree, click Server Configuration.
2. From the action pane, click Import Exchange Certificate to open the Import Exchange Certificate wizard.
3. This wizard helps you import a certificate with a valid private key to your Exchange server. You must enter the password of the private key for a successful import.
4. On the Introduction page, click Browse to select the file that contains the exported certificate, and then enter the password for the certificate.
5. On the Exchange Server Selection page, select the Exchange server that you want to import the certificate to.
6. On the Completion page, verify that all previously selected options are correct.
7. On the final page, follow the steps listed to complete your request. This page also displays the Shell cmdlet syntax necessary to import the certificate.

### Assign this Exchange 2010 certificate to the IIS service

- In the console tree, select Server Configuration.
- In the action pane, click Assign Services to Certificate to open the Assign Services to Certificate wizard. This wizard helps you assign the appropriate services to your certificate for your Exchange organization.

- On the Assign Services page, use the check boxes in the Assign Services section to choose IIS as service you want to assign to your certificate. Click Assign.
- On the Completion page, verify that all of the services were assigned properly.
- Import and assign Exchange certificate (2007)
- Open IIS Manager and navigate to the level you want to manage.
- In Features View, double-click Server Certificates.
- In the Actions pane, click Import.
- In the Import Certificate dialog box, do the following:
- Type a file name in the Certificate file box or click the browse button (...) to navigate to the name of a file where the exported certificate is stored.
- Type a password in the Password box if the certificate was exported with a password.
- Select Allow this certificate to be exported if you want to be able to export the certificate, or clear Allow this certificate to be exported if you do not want to allow additional exports of this certificate.
- Click OK.
- Run Powershell to bind the cert to services
- Enable-ExchangeCertificate -Services "IIS"
- To verify that your certificate is running and enabled run the following command:  
Get-ExchangeCertificate -DomainName server.domain.com

Now restart IIS on CAS servers (i.e. c:\iisreset)

**Note:** If the Exchange Web Services (respective IIS) do not use the SAN certificates you have to solve this issue before continuing.

### Trust Certificates

This step must be performed

- If you are working in an internal Test-Lab
- You do not use SAN certificates on the test Exchange CAS server
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

Your Exchange CAS Servers must trust the SAN certificate of your partners Exchange CAS servers.

*Certificates are bound to specific services. Because the CAS servers only communicate if they can trust each other they have to know something about the certificate of the partners side. So, your Exchange CAS Servers must include the certificate of your partners' side in the store for root certificates.*

Add certificates to the Trusted Root Certification Authorities store for a local computer

- Click Start, click Start Search, type mmc, and then press ENTER.
- On the File menu, click Add/Remove Snap-in.
- Under Available snap-ins, click Certificates, and then click Add.



- Under This snap-in will always manage certificates for, click Computer account, and then click Next.
- Click Local computer, and click Finish.
- If you have no more snap-ins to add to the console, click OK.
- In the console tree, double-click Certificates.
- Right-click the Trusted Root Certification Authorities store.
- Click Import to import the certificates and follow the steps in the Certificate Import Wizard.

You may also deploy certificates by using Group Policy. Keep in mind that the certificate for Exchange Server itself must be imported directly to the local store.

[http://technet.microsoft.com/en-us/library/cc770315\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc770315(v=ws.10).aspx)

- Open Group Policy Management Console.
- Find an existing or create a new GPO to contain the certificate settings. Ensure that the GPO is associated with the domain, site, or organizational unit whose users/machines you want affected by the policy.
- Right-click the GPO, and then select Edit.
- Group Policy Management Editor opens, and displays the current contents of the policy object.
- In the navigation pane, open Computer Configuration\Windows Settings\Security Settings\Public Key Policies\Trusted Publishers.
- Click the Action menu, and then click Import.
- Follow the instructions in the Certificate Import Wizard to find and import the certificate.
- If the certificate is self-signed, and cannot be traced back to a certificate that is in the Trusted Root Certification Authorities certificate store, then you must also copy the certificate to that store. In the navigation pane, click Trusted Root Certification Authorities, and then repeat steps 5 and 6 to install a copy of the certificate to that store.

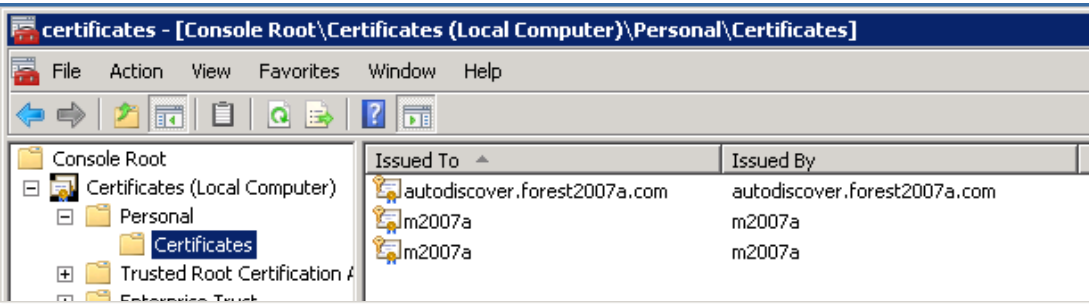
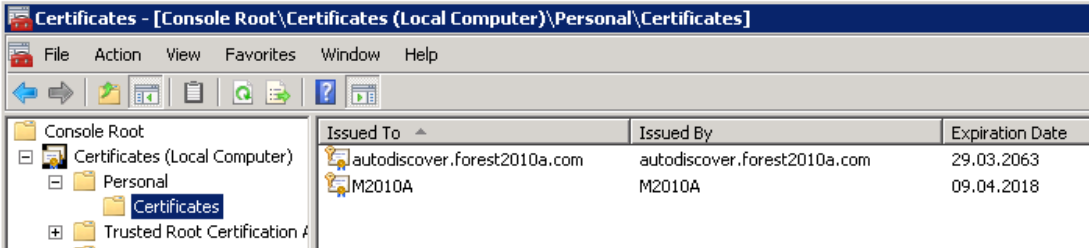
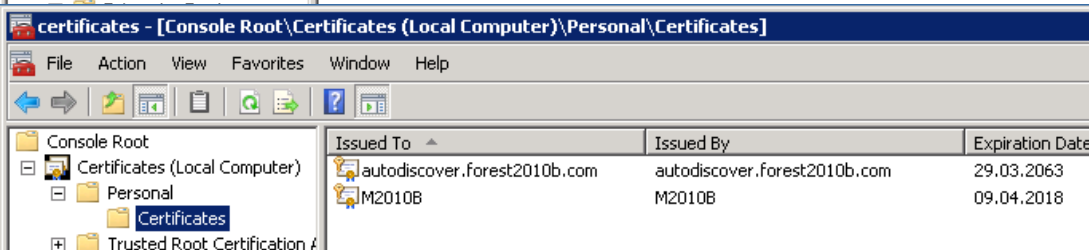
**Note:** If your Exchange CAS servers do not trust the SAN certificates of the partners' side, you have to solve this issue before continuing.

## Screenshots

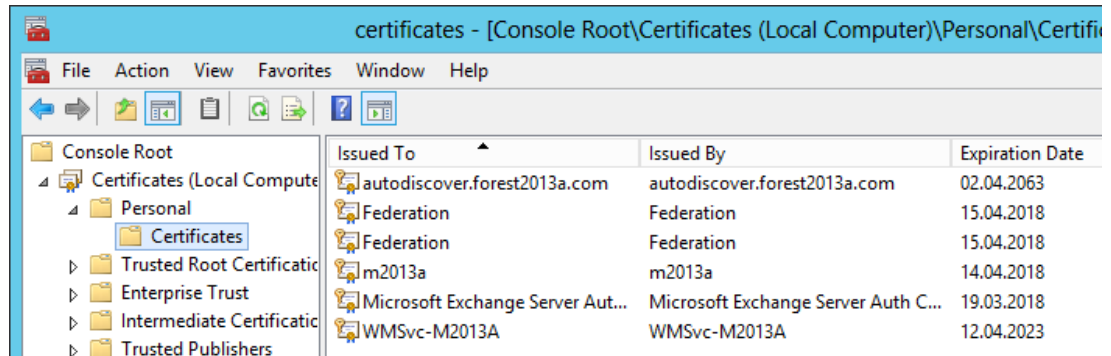
### Create Certificates (with selfssl.exe)

- 2007a selfssl7.exe /N  
cn=autodiscover.forest2007a.com;cn=autodiscover.f2007a.com;cn  
=m2007a.forest2007a.com;cn=m2007a /K 1024 /V 18250 /X /F  
c:\forest2007a\_2nd.pfx /W Pass1Word /Q
- 2010a selfssl7.exe /N  
cn=autodiscover.forest2010a.com;cn=autodiscover.f2010a.com;cn  
=m2010a.forest2010a.com;cn=m2010a /K 1024 /V 18250 /X /F  
c:\forest2010a\_2nd.pfx /W Pass1Word /Q
- 2010b selfssl7.exe /N  
cn=autodiscover.forest2010b.com;cn=autodiscover.f2010b.com;cn  
=m2010b.forest2010b.com;cn=m2010b /K 1024 /V 18250 /X /F  
c:\forest2010b\_2nd.pfx /W Pass1Word /Q
- 2013a selfssl7.exe /N  
cn=autodiscover.forest2013a.com;cn=autodiscover.f2013a.com;cn  
=m2013a.forest2013a.com;cn=m2013a /K 1024 /V 18250 /X /F  
c:\forest2013a\_2nd.pfx /W Pass1Word /Q

### Import Certificates

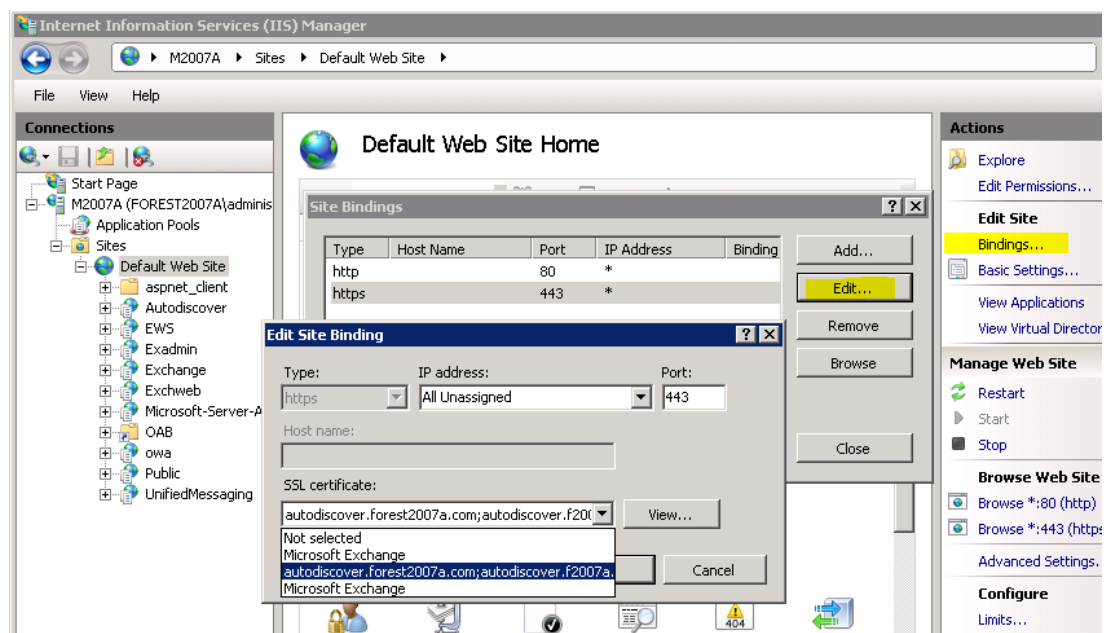
- 2007a
- 
- | Issued To                    | Issued By                    |
|------------------------------|------------------------------|
| autodiscover.forest2007a.com | autodiscover.forest2007a.com |
| m2007a                       | m2007a                       |
| m2007a                       | m2007a                       |
- 2010a
- 
- | Issued To                    | Issued By                    | Expiration Date |
|------------------------------|------------------------------|-----------------|
| autodiscover.forest2010a.com | autodiscover.forest2010a.com | 29.03.2063      |
| M2010A                       | M2010A                       | 09.04.2018      |
- 2010b
- 
- | Issued To                    | Issued By                    | Expiration Date |
|------------------------------|------------------------------|-----------------|
| autodiscover.forest2010b.com | autodiscover.forest2010b.com | 29.03.2063      |
| M2010B                       | M2010B                       | 09.04.2018      |

2013a

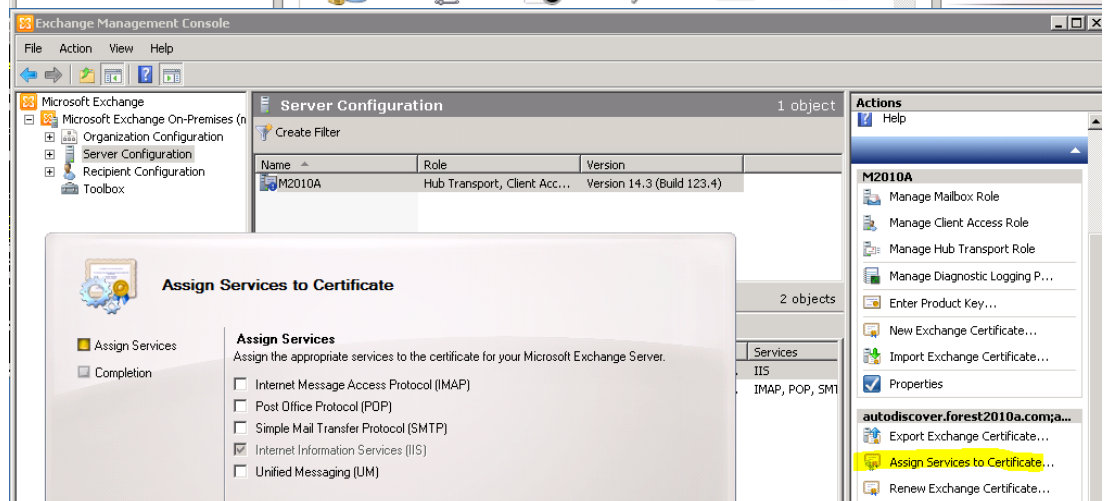


## Assign certificate to the IIS/Exchange service

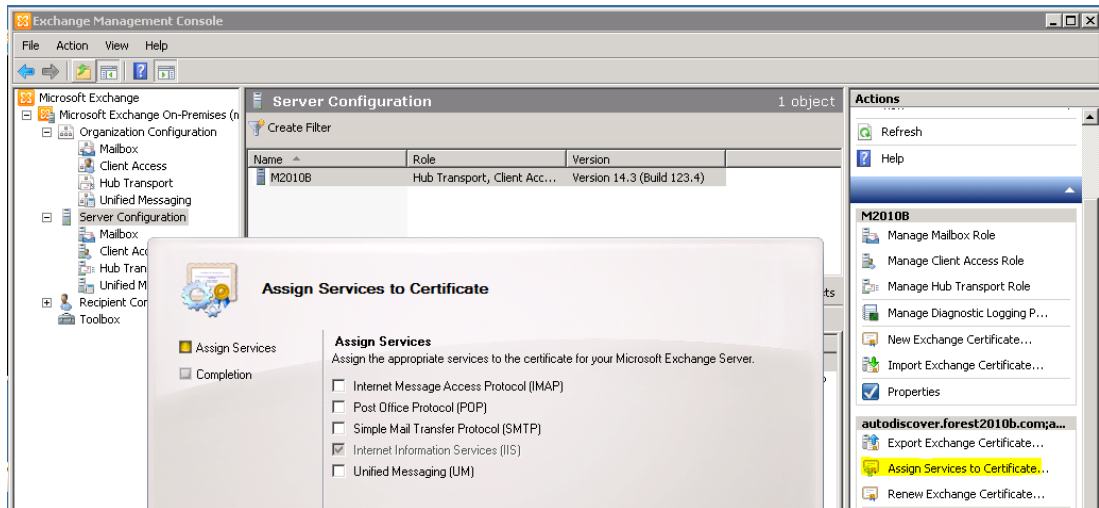
2007a



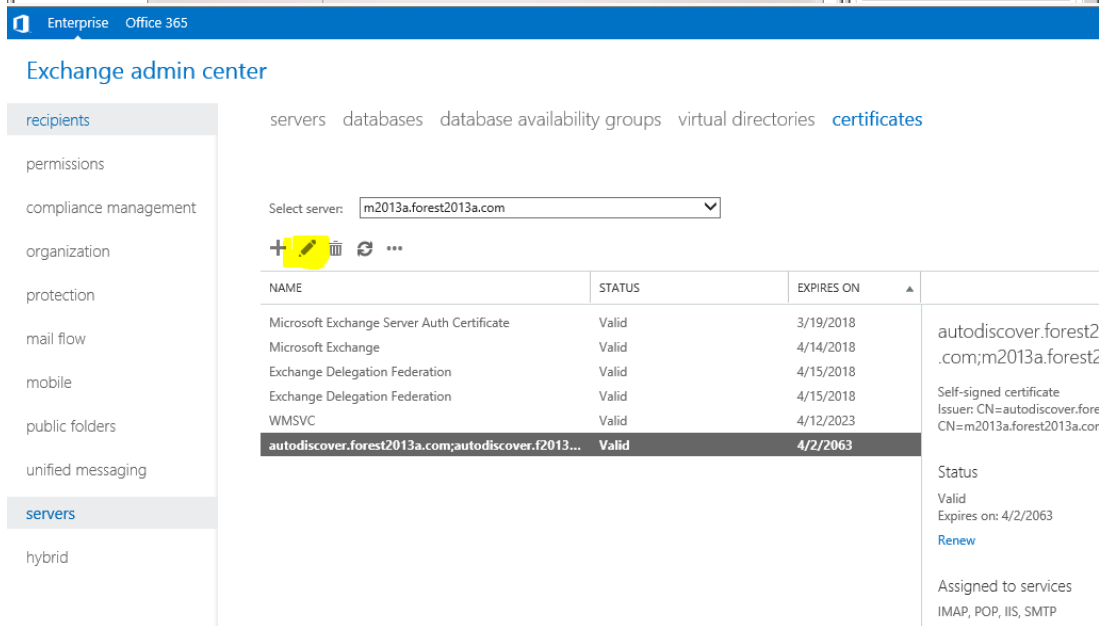
2010a



2010b

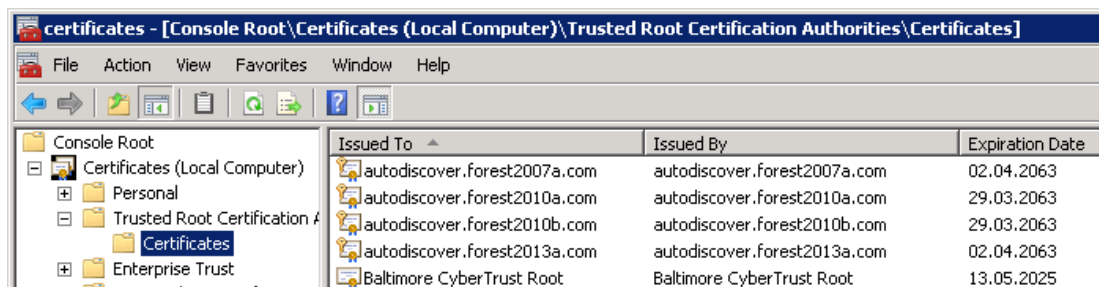


2013a

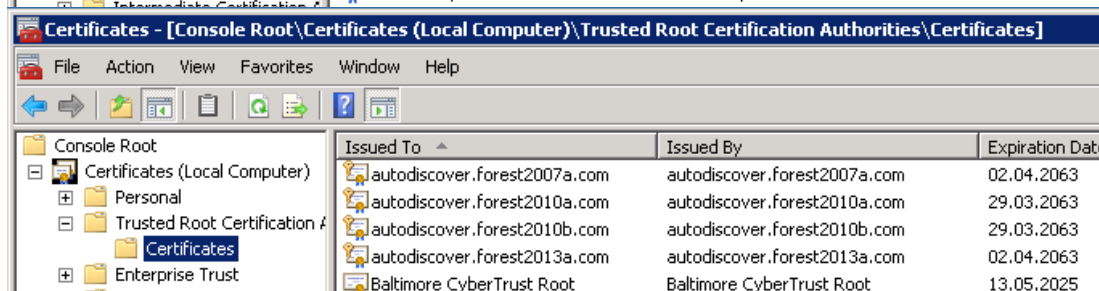


## Imported remote Certificates for trust

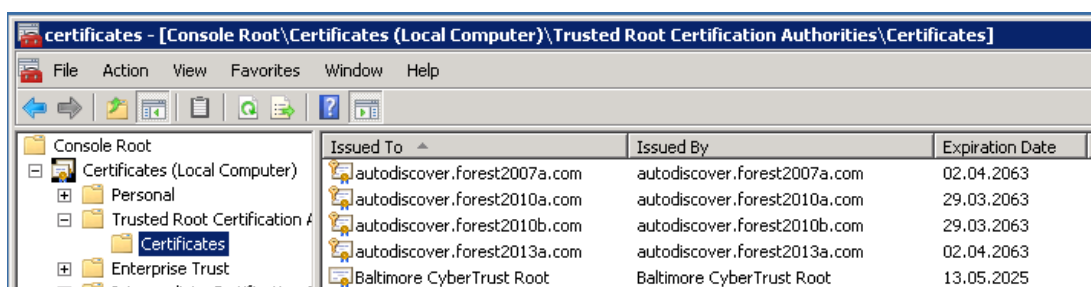
2007a



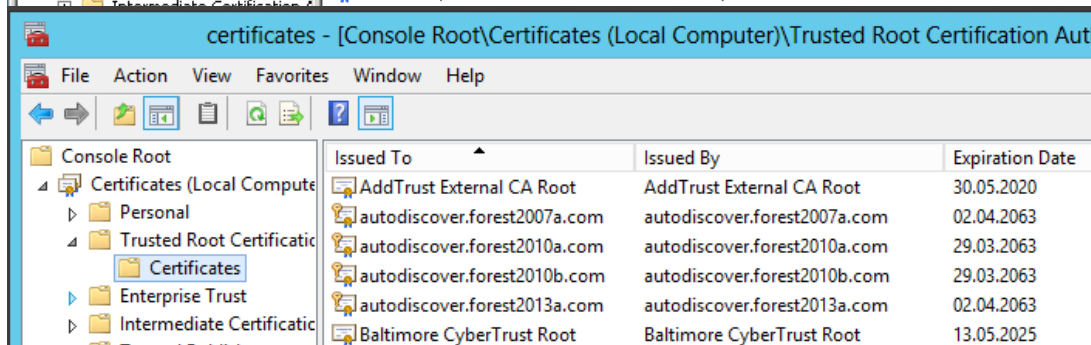
2010a



2010b



2013a



## Web Services

### Description

This step must be performed

- If you are working in an internal Test-Lab or if your organizations are connected by internet.
- If you want to realize Cross-Forest-Free/Busy or Cross-Forest-Delegation

You want to validate the certificates of your own side and of your partners side.

*If a client like Outlook or OWA tries to connect to its own Exchange servers it must trust the certificates of these servers. So, the client must store the certificates root in the certificate store of that person who is running the application. If an Exchange CAS server tries to connect to the partners Exchange servers it must trust the certificates of these servers. So, you want to validate this too.*

### If you use an internal Test-LAB

If you want to test F/B with Outlook, your Outlook client must trust the certificates of your own CAS servers. So the OWA machine must include the SAN certificates of your own CAS servers in its personal store for root certificates (of the logged in GALsync account).

Additionally run the Microsoft Remote Connectivity Analyzer at <https://www.testexchangeconnectivity.com/>. Download the Client tools, run the Connectivity Diagnostic issue "I can't log on with Office Outlook"

The test should confirm that Outlook Autodiscover is functional.

**Note:** If you Outlook client machine does not trust the SAN certificates of the CAS servers in your own side, you have to solve this issue before continuing.

If your organizations are connected by internet

Run the Microsoft Remote Connectivity Analyzer at <https://www.testexchangeconnectivity.com/> and confirm that Outlook Autodiscover and Exchange Web Services are functional.

**Note:** If the Analyzer indicates errors which prevent from working, you have to solve this issue before continuing.

Check:

If you try the access the Autodiscover URL for the target forest via IE with the *orgwideAccount*, can you open it receiving error code 600? Can you open the availability URL?

```
https://autodiscover.your.domain/autodiscover/autodiscover.xml
```

Check health of Web Services

```
test-outlookwebservice -targetaddress remoteuser@remote.domain  
| fl
```

**Note:** If you receive errors which prevent from working, you have to solve these issues before continuing.

#### Screenshots

2007a	test-outlookwebservice -targetaddress fbc1@forest2010a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2010b.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2013a.com   fl
2010a	test-outlookwebservice -targetaddress fbc1@forest2007a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2010b.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2013a.com   fl
2010b	test-outlookwebservice -targetaddress fbc1@forest2007a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2010a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2013a.com   fl
2013a	test-outlookwebservice -targetaddress fbc1@forest2007a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2010a.com   fl
	test-outlookwebservice -targetaddress fbc1@forest2010b.com   fl



### \*\*\* Troubleshooting Checklist \*\*\*

After you confirm that the Autodiscover service works externally for your organization, determine whether the Autodiscover service works correctly from the local computer. Use the Test E-mail AutoConfiguration tool to determine whether the Autodiscover service and the Availability service are working from Outlook. To do this, follow these steps:

- Start Outlook.
- Hold down the Ctrl key, right-click the Outlook icon in the notification area, and then click Test E-mail AutoConfiguration.
- Verify that the correct email address is in the E-mail Address box.
- In the Test E-mail AutoConfiguration window, click to clear the Use Guessmart check box and the Secure Guessmart Authentication check box.
- Click to select the Use AutoDiscover check box, and then click Test.
- Make sure that this test is successful and that Outlook can retrieve the correct URLs for the Availability service. Successful results resemble the following.  
If this test isn't successful, the local computer may be unable to connect to the Autodiscover service. The following are some common reasons that may cause this issue:  
A local firewall blocks Outlook from connecting to the Autodiscover service.

#### Increase the Log Level of Exchange Services

- `Get-EventLogLevel "MSExchange Availability\Availability Service" | Set-EventLogLevel -Level Expert`
- `Get-EventLogLevel "MSExchange Autodiscover" | Set-EventLogLevel -Level Expert`

Look at <http://www.testexchangeconnectivity.com>

#### General

- Are you able to connect to the target mailbox by using OWA Client (i.e. without getting certificate errors)?
- Are the internal and external URLs for autodiscover configured?  
`Get-autodiscoverVirtualDirectory | fl name,server,InternalURL,ExternalURL`  
`Get-AutodiscoverVirtualDirectory | Set-AutodiscoverVirtualDirectory -InternalURL`  
`https://adc.foresta.com/autodiscover/autodiscover.xml`  
`https://adc.foresta.com/autodiscover/autodiscover.xml`  
Please wait 15 MS-Minutes after configuring the value

#### Connection test

- Exchange 2010: `test-outlookwebservice -targetaddress user@forestB.com | fl`
- Exchange 2013: `$cred=get-credentials`  
`test-outlookwebservice -id:juser@forestC.com -mailboxcredential $cred | fl`
- `Get-WebServicesVirtualDirectory | fl name,server,InternalURL,ExternalURL`
- `Get-WebServicesVirtualDirectory | Set-WebServicesVirtualDirectory -ExternalURL`  
`https://mobile.forestC.com/EWS/Exchange.asmx`
- Are the CAS Servers of the source able to perform nslookup/ping to autodiscover.targetdomain.xx?
- Can you query the autodiscover URL with Internet Explorer and check if you get an certificate issue?  
If you get an authentication request then insert a valid user name and password. Getting error 600 then this is the expected result and means: everything ok.
- Is the certificate of the source domains CAS servers present in the target domains CAS servers certificate store?
- Is the certificate of the target domains CAS servers present in the source domains CAS servers certificate store?
- Is the certificate of the CAS server assigned to IIS?
- Are the correct alternate names configured in the certificates?

- <https://autodiscover.remote.domain/autodiscover/autodiscover.xml> -> use the remote proxy account to authenticate
- Link: If the Autodiscover request does not finish in 10 seconds, the Availability service request for the cross-forest user may time out; [http://technet.microsoft.com/en-us/library/bb125182\(EXCHG.80\).aspx](http://technet.microsoft.com/en-us/library/bb125182(EXCHG.80).aspx)
- test-outlookwebservice -targetaddress user@remote.domain | fl
- NOTE: If you receive an error "mailbox is missing":
- Log on to a MAILBOX SERVER | Open the Exchange Shell | Navigate to the script directory by typing cd \$exscripts | Type .\New-TestCasConnectivityUser.ps1 -OU Users

Renew your autodiscover virtual directories

To re-create your Autodiscover VDir on CAS Servers (2007) follow this:

- Take a backup of IIS
- ##As simple as a right click backup in IIS 6
- ##To backup IIS 7, you need to follow this:
- To add a backup, run this command:
- %windir%\system32\inetsrv\appcmd.exe add backup " IISbkp\_Date "
- To restore a backup, run this command:
- %windir%\system32\inetsrv\appcmd.exe restore backup " IISbkp\_Date "
- To delete a backup, run this command:
- %windir%\system32\inetsrv\appcmd.exe delete backup " IISbkp\_Date "
- To list all backup's, run this command:
- %windir%\system32\inetsrv\appcmd.exe list backup
- Remove-AutodiscoverVirtualDirectory -Identity "CAS-servername\Autodiscover (Default Web Site)"
- New-AutodiscoverVirtualDirectory -WebsiteName "Default Web Site" -WindowsAuthentication \$true -BasicAuthentication \$true
- Perform an IISReset
- These are the basic troubleshooting for if AutoDiscover stops functioning. Understanding the concepts are extremely important as they drive resolution further.
- Wait 15 mins.

To re-create your Autodiscover VDir on CAS Servers (2007) follow this:

- EMC | Server Configuration | Client Access | Actions | Reset Virtual Directory
- Server Configuration | Client Access | Actions | Reset Virtual Directory
- Wait 15 mins.

## Links

### White Paper: Exchange 2007 Autodiscover Service

<http://technet.microsoft.com/en-us/library/bb332063%28EXCHG.80%29.aspx>

## Synchronize With GALsync

### Description

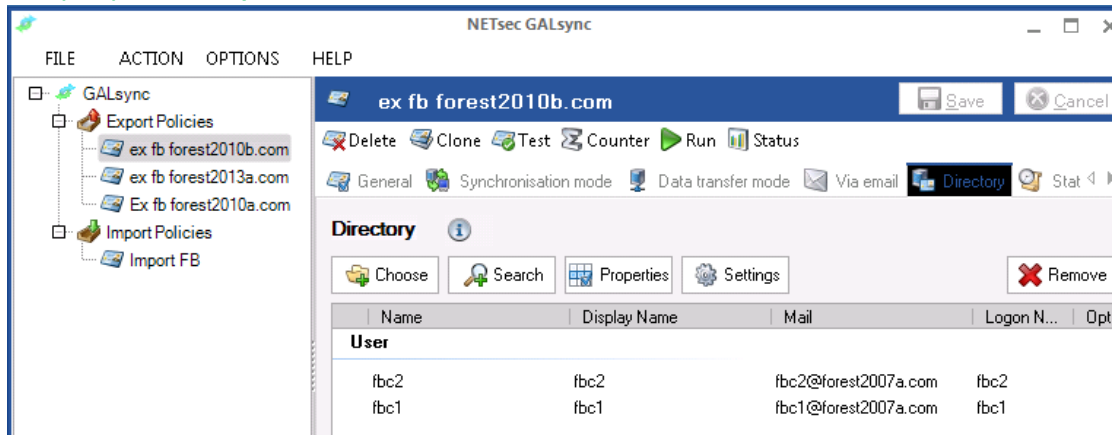
Have the GALsync v5 software installed in each organization and synchronize the directories successfully (full or partial).

Basically you configure export and import policies. In case of Cross-Forest-Delegation you have to configure an additional setting called

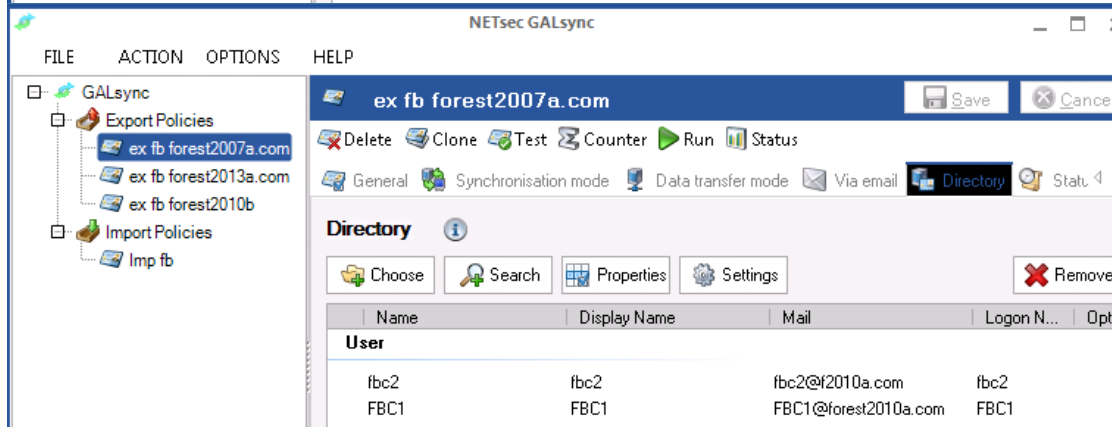


## Policies (1 example per forest)

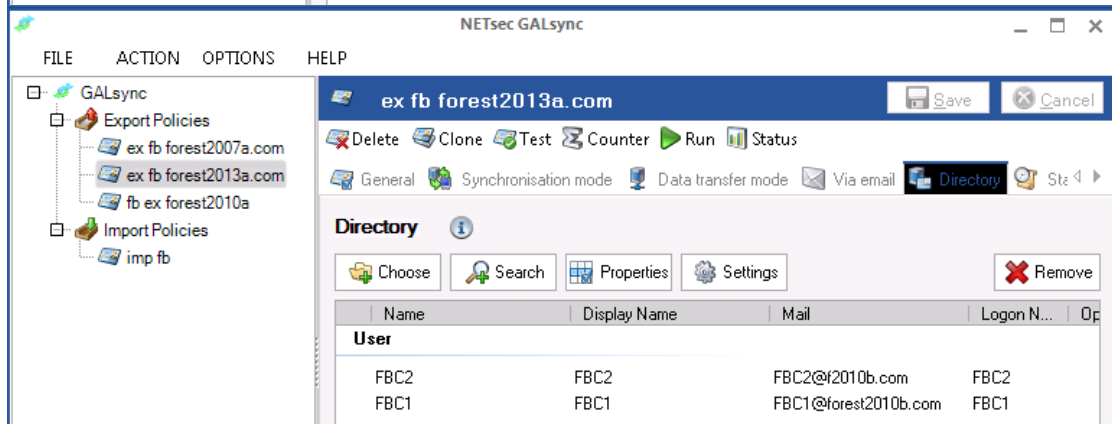
2007a



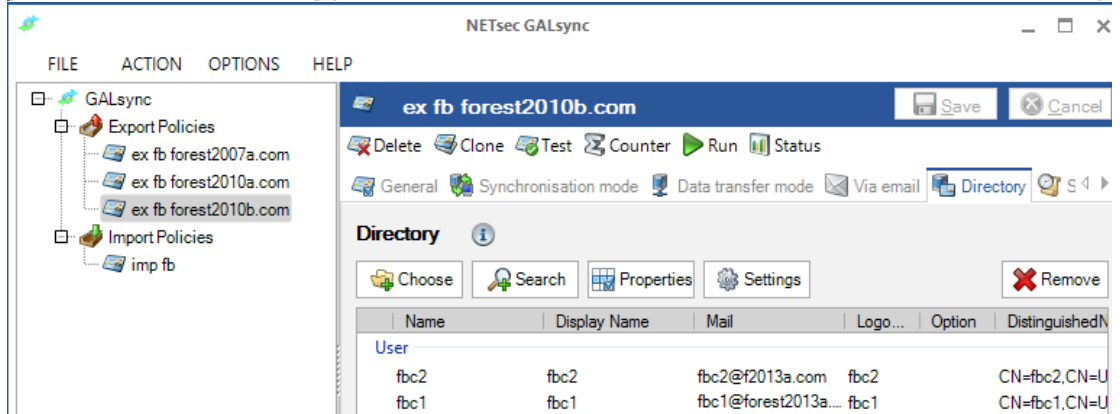
2010a



2010b

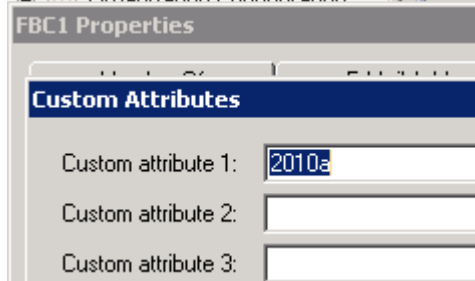


2013a



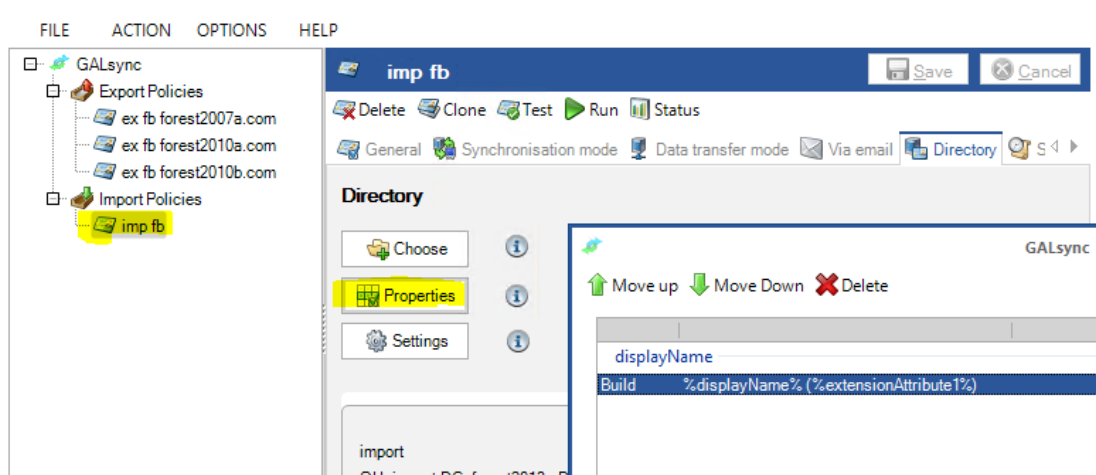
## Object Configuration

- all All objects have a value in extension attribute 1 which is the organization name. So, using GALsync import policy settings we can give them different display names to distinguish between the sending forests. Example:



## Import Configuration

all



## Synchronized objects

2007a

Name	Type
FBC1	Contact
fbc2	Contact

2010a

Name	Type
fbc1	Contact
fbc2	Contact

2010b

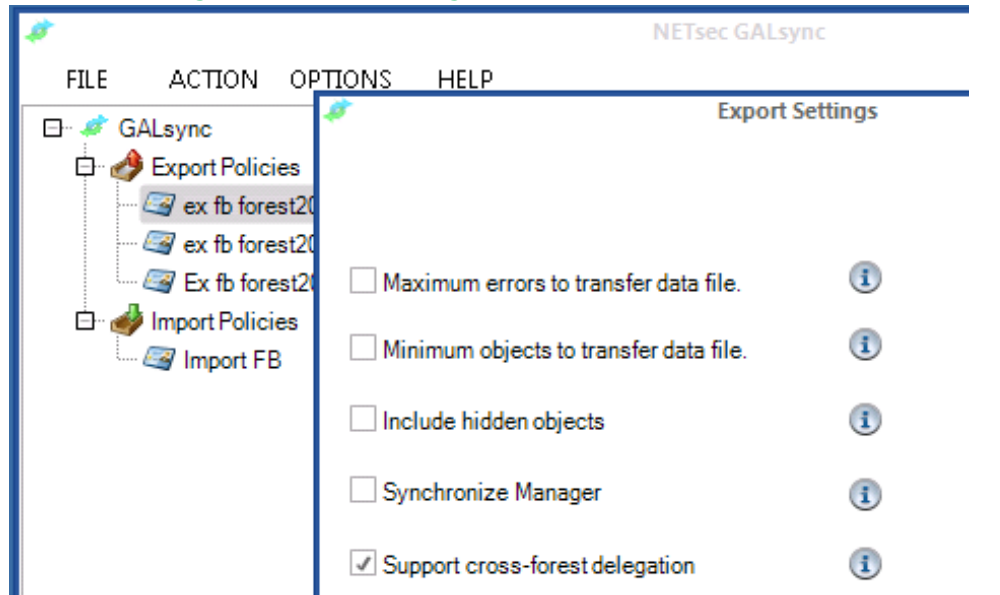
Name	Type
fbc1	Contact
fbc2	Contact

2013a

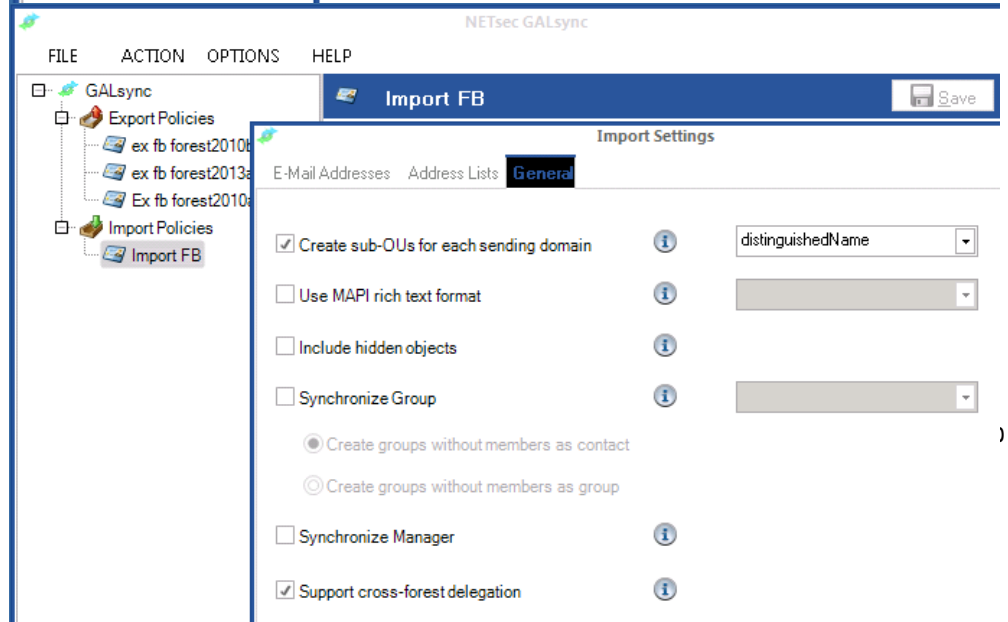
Name	Type
FBC1	Contact
fbc2	Contact

## Additional configuration when using Cross-forest delegation

### Export Policies



### Import Policies



## \*\*\* Troubleshooting Checklist \*\*\*

- Are the mailboxes from source created as contacts in the target by using GALsync?
- Are clients able to send/receive mails (between the 2 forests) by sending mail using the GAL to address the recipient
- Are clients able to send/receive/accept/decline meeting invitations (between the 2 forests) by sending mail using the GAL to address the recipient

## Cross-Forest

### AvailabilityConfig

#### Description

This step must be performed

- If you want another organization to be able to query the Free/Busy information of people in your organization.  
If you do not want this, then skip this step.
- If you are working in an internal Test-Lab or if your organizations are connected by internet.

Your organization now must be prepared to accept incoming free/busy requests proxied through a special user account.

*If you want to allow someone of your partners' organization to query Free/Busy information of people in your organization, then your partners Exchange servers will contact the availability service of your Exchange servers. In your partners organization the recipient type of the object from your organization must be a custom recipient (mail enabled contact). After a user on your partners' side picked the object from his GAL and makes a meeting request, the request is proxied to an Availability Service in your forest. To do this, a special (proxy-) account on your side is required.*

Please create a user account in Active Directory without special permissions. Place the object in an OU where no GPOs prevent it from working (recommended: put the object into the container users). Configure it with a permanent password.

You may use this Powershell query to get your current values or to set a new value

```
Get-AvailabilityConfig | fl orgwideaccount
Set-AvailabilityConfig -OrgwideAccount <ProxyAccount>
```

**Note:** If there are any errors indicated while performing this step, you have to solve this issue before continuing.

Perform the same procedure at your partners' side!

## Screenshots

At first we created an user *fbp* in each forest (no mailbox, no special privileges)

```
2007a Set-AvailabilityConfig -OrgwideAccount "forest2007a.com\fbp"
      iisreset
      Get-AvailabilityConfig | fl
2010a Set-AvailabilityConfig -OrgwideAccount "forest2010a.com\fbp"
      iisreset
      Get-AvailabilityConfig | fl
2010b Set-AvailabilityConfig -OrgwideAccount "forest2010b.com\fbp"
      iisreset
      Get-AvailabilityConfig | fl
2013a Set-AvailabilityConfig -OrgwideAccount "forest2013a.com\fbp"
      iisreset
      Get-AvailabilityConfig | fl
```

## \*\*\* Troubleshooting Checklist \*\*\*

- Are the proxy accounts on both sides present?  
If you want only a uni-directional f/b query the proxy account must be present in the target domain which will be queried.
- Analyze IIS-Log and check if a client using the proxy account logs in
- Do a remove-availabilityaddressspace (followed by an iisreset) and a re-adding (followed by an iisreset)
- Use Security Event Log to check, if the proxy account logs on or if the local site sends wrong logon information

## AvailabilityAddressSpace

### Description

This step must be performed

- If you want that your people can query Free/Busy information of people in another organization.  
If you do not want this, then skip this step.
- If you are working in an internal Test-Lab or if your organizations are connected by internet.

Your organization now must be prepared to forward appropriate Free/Busy requests to your partners' side.

*If someone of your organization wants to query Free/Busy information of people in your partners' organization, he will pick the contact from your "GALsyncd" GAL. The picked objects has a special "SMTP target address" which refers to the real mail-address in the other organization. Because you do not want to send an SMTP mail but only to query Free/Busy, the availability services of your Exchange servers have to forward this query to the availability services of the appropriate SMTP domain at your partners' side. To do this, the availability services of your Exchange*

servers must know the name of this SMTP domain. This is similar to the concept of "send connectors". The *ForestName* parameter specifies the SMTP domain name of the target forest for users whose free/busy data must be retrieved. The *Credentials* parameter specifies the credentials for an account that has permission to access the availability services in the target forest (configured by *Set-AvailabilityConfig* in the remote side).

**Note:** In most environments the mail suffix is not the same as the Active Directory domain names. If your users are distributed among multiple SMTP domains in the target forest, run the *Add-AvailabilityAddressSpace* cmdlet once for each SMTP domain. Do not forget to configure the appropriate DNS-zones, autodiscover A-records and SAN-certificates! With **AvailabilityAddressSpace** you can specify a forest but that won't **work** when mail suffix is different.

### Screenshots

```
2007a      #Get-AvailabilityAddressSpace | remove-AvailabilityAddressSpace

$cred2010a = Get-Credential # forest2010a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
$cred2010b = Get-Credential # forest2010b.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
$cred2013a = Get-Credential # forest2013a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod OrgWideFB -credential
$cred2013a
Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod OrgWideFB -credential
$cred2013a
Get-AvailabilityAddressSpace | fl forestname
iisreset

2010a      #Get-AvailabilityAddressSpace | remove-AvailabilityAddressSpace

$cred2007a = Get-Credential # forest2007a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
$cred2010b = Get-Credential # forest2010b.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
$cred2013a = Get-Credential # forest2013a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod OrgWideFB -credential
$cred2013a
Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod OrgWideFB -credential
$cred2013a

Get-AvailabilityAddressSpace | fl forestname
iisreset

2010b      #Get-AvailabilityAddressSpace | remove-AvailabilityAddressSpace

$cred2007a = Get-Credential # forest2007a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
```

```

Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
$cred2010a = Get-Credential # forest2010a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
$cred2013a = Get-Credential # forest2013a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod OrgWideFB -credential
$cred2013a
Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod OrgWideFB -credential
$cred2013a

2013a Get-AvailabilityAddressSpace | fl forestname
iisreset
#Get-AvailabilityAddressSpace | remove-AvailabilityAddressSpace

$cred2007a = Get-Credential # forest2007a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod OrgWideFB -credential
$cred2007a
$cred2010a = Get-Credential # forest2010a.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod OrgWideFB -credential
$cred2010a
$cred2010b = Get-Credential # forest2010b.com\fbp
Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod OrgWideFB -credential
$cred2010b
Get-AvailabilityAddressSpace | fl forestname
Iisreset

```

You may use this Powershell query to query the current domains for which *availabilityaddressspace* is configured or set the value with

```

Get-AvailabilityAddressSpace | fl
$cred = Get-Credential # <domain\account : the Free Busy proxy
account at your partners Active Directory side>
Add-AvailabilityAddressSpace -ForestName <your partners SMTP
domain> -AccessMethod OrgWideFB -credential $cred

```

**Note:** If there are any errors indicated while performing this step, you have to solve this issue before continuing.

Perform the same procedure at your partners' side!

\* \* \* ☺ At this point you should take a cup of tea and . . .  
wait for at least 15 mins ☺ \* \* \*

**Note:** If you use a shared namespace see chapter *Free/Busy and Shared Namespace* in the appendix of this document.



### \*\*\* Troubleshooting Checklist \*\*\*

- Did you configure the AddressSpace in the source domain correctly?  
Get-AvailabilityAddressSpace  
Add-AvailabilityAddressSpace –Forestname "ForestB.com" -AccessMethod OrgWideFB –Credential (get-Credential)  
please use the credentials of the proxyaccount, which was configured in the target forest
- Did you configure –OrgWideAccount <proxyaccount> in the target forest?  
Get-AvailabilityConfig  
Set-AvailabilityConfig –OrgWideAccount freebusy
- Do a set-availabilityconfig –orgwideaccount \$null and a re-adding the orgwideaccount followed by an iisreset

## Cross-Forest-Delegation

This step must be performed

- If you want another organization to be able to query the Free/Busy information of people in your organization and to work with delegated calendars.
- If you are working in an internal Test-Lab or if your organizations are connected by internet (i.e. VPN tunnel).

### GALsync Specification

#### Description

You have to configure a special setting in GALsync export and import policy:

Policy | Directory | Settings | Support Cross-Forest Delegation -> selected

**Note:** If this configuration is not present at export AND import policies you have to solve this issue before continuing.

### \*\*\* Troubleshooting Checklist \*\*\*

Check GALsync Synchron - the synchronized objects should have these attribute values (check with Attribute-Editor) Legend: Attribute | Source | Target

- legacyExchangeDN | Not significant | Must be set
- mailNickname | Not significant | Must be set
- objectSid (i.e.) | S-1-5-21-3511955210-643191710-2064615621-5187 | Not significant
- mAPIRecipient | Not significant | Not Set
- msExchMasterAccountSid | Not significant | Must have the same value like the objectSid of the source object
- msExchOriginatingForest | Not significant | Must have the same value like the Forest FQDN of the source object
- msExchRecipientDisplayType | Not significant | Must have the value -1073741818
- msExchRecipientTypeDetails | Not significant | Must have the value 32768
- proxyAddresses | The primary SMTP-Address from the source object will be the value of the attribute targetaddress in the targetdomain | Not significant
- targetAddress | Not Set | The primary SMTP-Address from the source object should be the value of attribute targetaddress

RECIPIENT TYPE

- Is the RECIPIENT TYPE of the target contact in Exchange Management Console displayed as CROSS-Forest Mail Contact?

## Domain Trust

### Description

To configure a Cross-Forest-Delegation a trust between the domains/forests is required.

Check if the trusts are in place and if they are working (validate them at all!)

Note: To Check Trust Follow This Article: [How To Determine Trust Relationship Configurations At Http://Support.Microsoft.Com/Kb/228477/En-Us](http://support.microsoft.com/kb/228477/en-us) Or Domain And Forest Trust Tools And Settings At [Http://Technet.Microsoft.Com/En-Us/Library/Cc756944\(V=Ws.10\).Aspx](http://technet.microsoft.com/en-us/library/cc756944(v=ws.10).aspx)

**Note:** If the trust is not working you have to solve this issue before continuing.

### \*\*\* Troubleshooting Checklist \*\*\*

- Check if the trusts are in place and if they are working. Follow the article [How To Determine Trust Relationship Configurations at Http://Support.Microsoft.Com/Kb/228477/En-Us](http://support.microsoft.com/kb/228477/en-us) or Domain And Forest Trust Tools And Settings at [Http://Technet.Microsoft.Com/En-Us/Library/Cc756944\(V=Ws.10\).Aspx](http://technet.microsoft.com/en-us/library/cc756944(v=ws.10).aspx)

## AvailabilityAddressSpace

### Description

Your organization now must be prepared to forward appropriate requests to your partners' side.

*If someone of your organization wants to query Free/Busy information of people in your partners' organization or manage the delegated calendar, he will pick the contact from your "GALsynced" GAL. The picked objects has a special "SMTP target address" which refers to the real mail-address in the other organization. Because you do not want to send an SMTP mail but only to query Free/Busy, the availability services of your Exchange servers have to forward this query to the availability services of the appropriate Web Services of the SMTP domain at your partners' side. To do this, the availability services of your Exchange servers must know the name of this SMTP domain. This is similar to the concept of "send connectors". The ForestName parameter specifies the SMTP domain name of the target forest for users whose free/busy data must be retrieved. With \$true as value for the UseServiceAccount parameter the local availability service account is used for authorization in the remote forest.*

**Note:** If your users are distributed among multiple SMTP domains in the target forest, run the *Add-AvailabilityAddressSpace* cmdlet once for each SMTP domain. Do not forget to configure the appropriate DNS-zones, autodiscover A-records and SAN-certificates!

You may use this Powershell query to query the current domains for which *availabilityaddressspace* is configured

```
Get-AvailabilityAddressSpace | fl
```

Remove all existing Availability configurations

1. Remove-AvailabilityAddressSpace <name>
2. Set-AvailabilityConfig -OrgwideAccount \$null
3. Iisreset

Set permissions on all CAS Servers for each forest. So, the Availability Services of the remote Exchange Servers can authorize at your local side.

```
Get-ClientAccessServer | Add-AdPermission -AccessRights
ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -
User "<Remote.Forest.Domain.Name>\Exchange Servers"
```

Recreate corresponding *AvailabilityAddressSpace* for all needed external domains.

```
Add-AvailabilityAddressSpace -ForestName
"<Remote.SMTP.Domain.Name>" -AccessMethod PerUserFB -
UseServiceAccount $true
```

Export each SCP (Service connection point) into corresponding remote forest: this will add a pointer record in the configuration partition of the remote forest with an ldap url to the local forest. If the parameter *MultipleExchangeDeployments* is set to *TRUE* you export all the *accepted domains* which are defined in your Exchange environment. So, when adding an extra *accepted domain* you will need to execute this command again to update the SCP object.

```
$cred = Get-Credential # <Enter Administrator credentials in the
remote forest when prompted>
Export-AutodiscoverConfig -DomainController
<local.Domain.Controller> -TargetForestDomainController
<Remote.Domain.Controller> -TargetForestCredential $cred -
MultipleExchangeDeployments $true
```

**Note:** If there are any errors indicated while performing this step, you have to solve this issue before continuing.

Perform the same procedure at your partners' side!

\* \* \* ☺ At this point you should take a cup of tea and . . . wait for at least 15 mins ☺ \* \* \*

**Note:** If you use a shared namespace see chapter *Free/Busy and Shared Namespace* in the appendix of this document.

\*\*\* *Troubleshooting Checklist* \*\*\*

- Did you configure the AddressSpace in the source domain correctly?  
Get-AvailabilityAddressSpace  
Add-AvailabilityAddressSpace -Forestname "ForestB.com" -AccessMethod OrgWideFB -Credential (get-Credential)  
please use the credentials of the proxyaccount, which was configured in the target forest
- Did you configure -OrgWideAccount <proxyaccount> in the target forest?  
Get-AvailabilityConfig  
Set-AvailabilityConfig -OrgWideAccount freebusy

- Do a `set-availabilityconfig -orgwideaccount $null` and a re-adding the `orgwideaccount` followed by an `iisrest`

## Screenshots

### Cross-Forest Delegation: TrustRemoteExchangeServers

2007a	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010b\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2013a\Exchange Servers"
2010a	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2007a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010b\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2013a\Exchange Servers"
2010b	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2007a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2013a\Exchange Servers"
2013a	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2007a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010a\Exchange Servers"
	Get-ClientAccessServer   Add-AdPermission -AccessRights ExtendedRight -ExtendedRights "ms-exch-epi-token-serialization" -User "forest2010b\Exchange Servers"

## Cross-Forest Delegation: AvailabilityAddressSpace

```
2007a    Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
2010a    Add-AvailabilityAddressSpace -ForestName forest207a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
2010b    Add-AvailabilityAddressSpace -ForestName forest2007a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2013a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
2013a    Add-AvailabilityAddressSpace -ForestName forest2007a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2007a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010a.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName forest2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
        Add-AvailabilityAddressSpace -ForestName f2010b.com -AccessMethod PerUserFB -
        UseServiceAccount $true
```

## Cross-Forest Delegation: AutodiscoverConfig

```
2007a    $cred2010a = Get-Credential # <Enter Administrator credentials in the remote forest when
        prompted>
        Export-AutodiscoverConfig -DomainController m2007a.forest2007a.com -
        TargetForestDomainController
        m2010a.forest2010a.com -TargetForestCredential $cred2010a -MultipleExchangeDeployments $true
        $cred2010b = Get-Credential # <Enter Administrator credentials in the remote forest when
        prompted>
        Export-AutodiscoverConfig -DomainController m2007a.forest2007a.com -
        TargetForestDomainController
        m2010b.forest2010b.com -TargetForestCredential $cred2010b -MultipleExchangeDeployments $true
        $cred2013a = Get-Credential # <Enter Administrator credentials in the remote forest when
        prompted>
        Export-AutodiscoverConfig -DomainController m2007a.forest2007a.com -
        TargetForestDomainController

        m2013a.forest2013a.com -TargetForestCredential $cred2013a -MultipleExchangeDeployments $true
```

iisreset

2010a \$cred2007a = Get-Credential # forest2007a\administrator  
 Export-AutodiscoverConfig -DomainController m2010a.forest2010a.com -  
 TargetForestDomainController m2007a.forest2007a.com -TargetForestCredential \$cred2007a -  
 MultipleExchangeDeployments \$true

\$cred2010b = Get-Credential # forest2010b\administrator  
 Export-AutodiscoverConfig -DomainController m2010a.forest2010a.com -  
 TargetForestDomainController m2010b.forest2010b.com -TargetForestCredential \$cred2010b -  
 MultipleExchangeDeployments \$true

\$cred2013a = Get-Credential # forest2013a\administrator  
 Export-AutodiscoverConfig -DomainController m2010a.forest2010a.com -  
 TargetForestDomainController m2013a.forest2013a.com -TargetForestCredential \$cred2013a -  
 MultipleExchangeDeployments \$true

iisreset

2010b \$cred2007a = Get-Credential # forest2007a\administrator  
 Export-AutodiscoverConfig -DomainController m2010b.forest2010b.com -  
 TargetForestDomainController m2007a.forest2007a.com -TargetForestCredential \$cred2007a -  
 MultipleExchangeDeployments \$true

\$cred2010a = Get-Credential # forest2010a\administrator  
 Export-AutodiscoverConfig -DomainController m2010b.forest2010b.com -  
 TargetForestDomainController m2010a.forest2010a.com -TargetForestCredential \$cred2010a -  
 MultipleExchangeDeployments \$true

\$cred2013a = Get-Credential # forest2013a\administrator  
 Export-AutodiscoverConfig -DomainController m2010b.forest2010b.com -  
 TargetForestDomainController m2013a.forest2013a.com -TargetForestCredential \$cred2013a -  
 MultipleExchangeDeployments \$true

iisreset

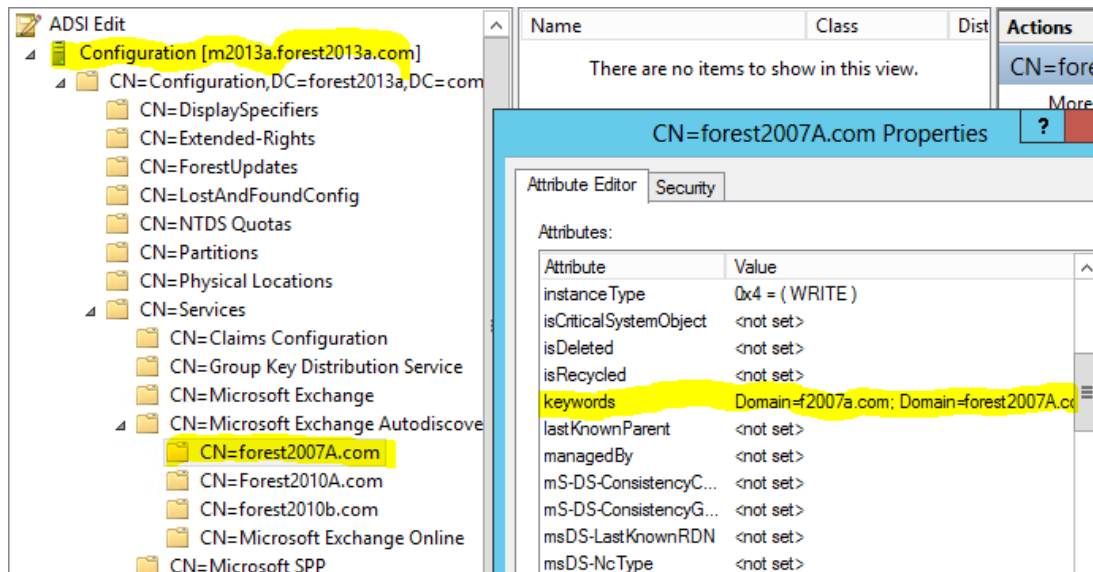
2013a \$cred2007a = Get-Credential # forest2007a\administrator  
 Export-AutodiscoverConfig -DomainController m2013a.forest2013a.com -  
 TargetForestDomainController m2007a.forest2007a.com -TargetForestCredential \$cred2007a -  
 MultipleExchangeDeployments \$true

\$cred2010a = Get-Credential # forest2010a\administrator  
 Export-AutodiscoverConfig -DomainController m2013a.forest2013a.com -  
 TargetForestDomainController m2010a.forest2010a.com -TargetForestCredential \$cred2010a -  
 MultipleExchangeDeployments \$true

\$cred2010b = Get-Credential # forest2010b\administrator  
 Export-AutodiscoverConfig -DomainController m2013a.forest2013a.com -  
 TargetForestDomainController m2010b.forest2010b.com -TargetForestCredential \$cred2010b -  
 MultipleExchangeDeployments \$true

iisreset

In the local configuration partition of Active Directory all received remote Service Connection Points for autodiscover services are listed. All accepted domains per forest are available in attribute *keywords*.



## Final Result

### Cross-Forest-Free/Busy

#### HowTo

1. Open Outlook
  2. Make an invitation by picking a synchronized contact of your partner from your GAL.
  3. Check if his free/busy information is displayed (give some secs)
- 
1. Open Outlook Web Access
  2. Make an invitation by picking a synchronized contact of your partner from your GAL.
  3. Check if his free/busy information is displayed (give some secs)

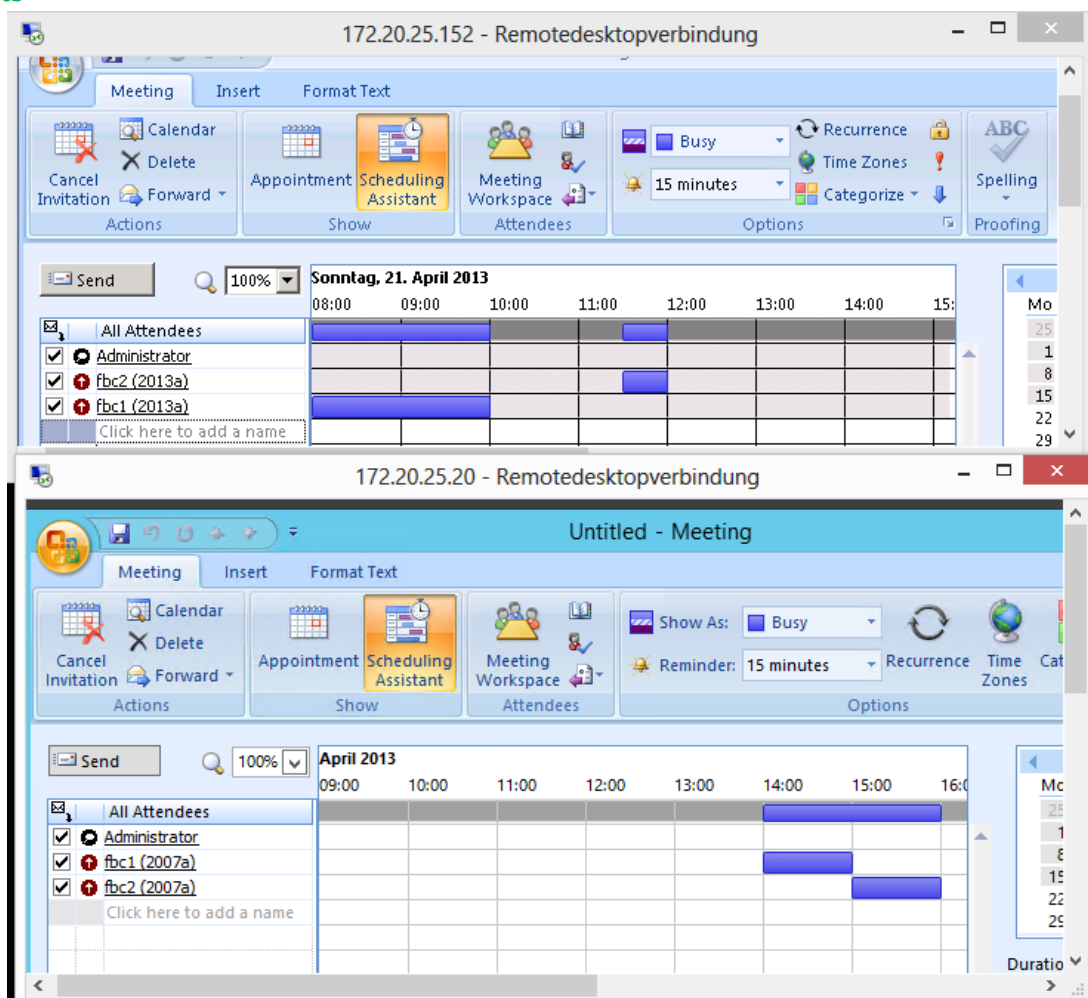


## Screenshots

2007a

<->

2013a



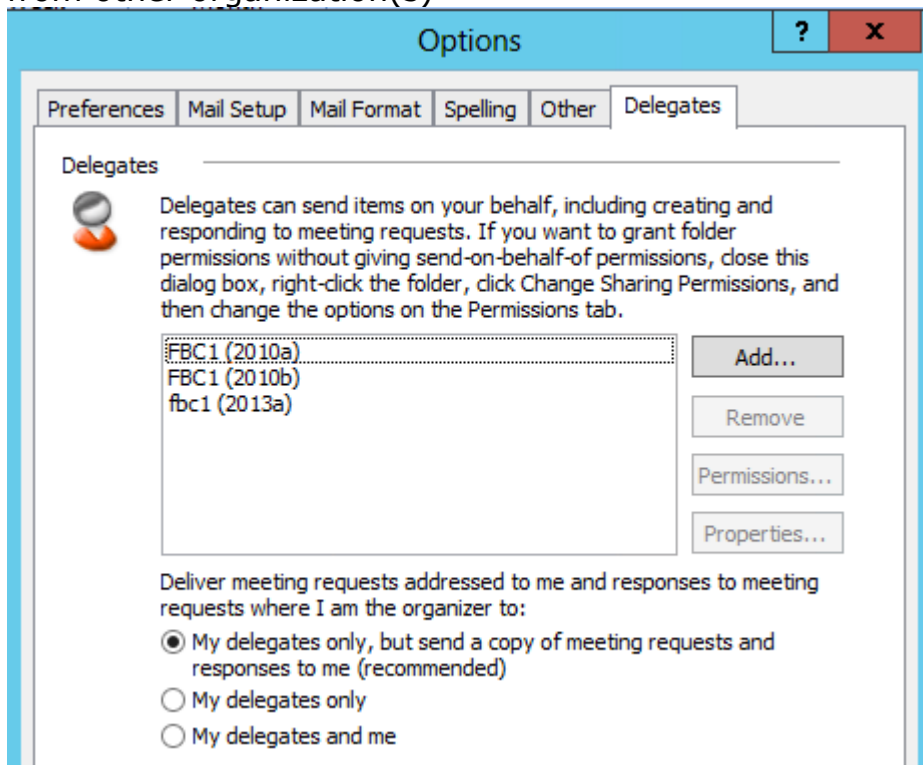
## Cross-Forest-Delegation

### HowTo

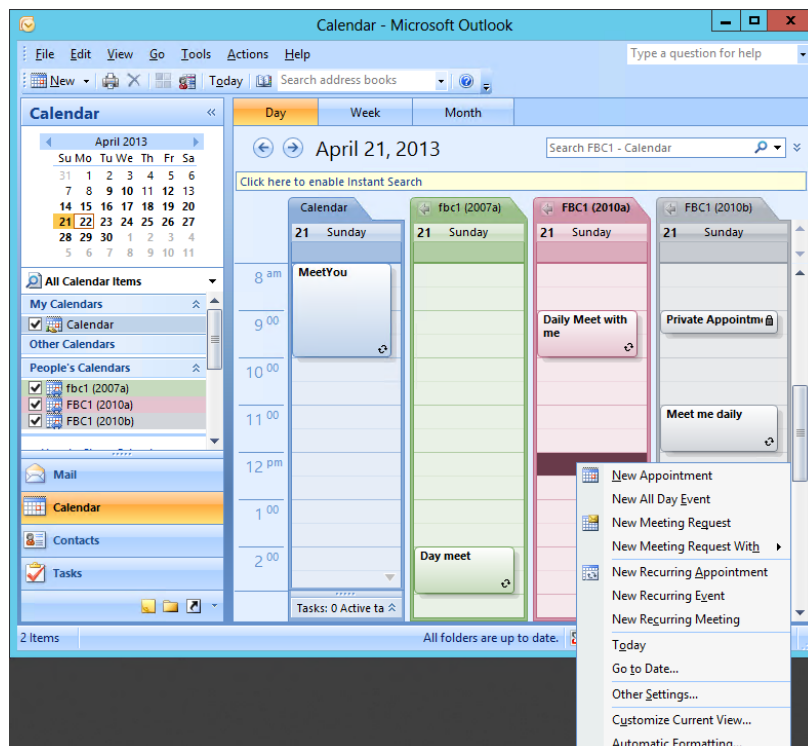
1. Open Outlook on your local side
2. Delegate your calendar to someone from the remote side by picking a synchronized contact of your partner from your GAL.
3. Contact this person and check if he is able to manage your calendar
4. Do this vice versa

### Screenshots

2007a [FBC1@forest2007a.com](mailto:FBC1@forest2007a.com) shares its calendar with certain people from other organization(s)



2013a [FBC1@forest2013a.com](mailto:FBC1@forest2013a.com) opens the all calendars it has access to. It can manage the remote calendar following the access rights beeing which have been granted.



## Troubleshooting

### Help

Short descriptions you can find in Technet: i.e.

*Configure the Availability Service for Cross-Forest Topologies,*

<http://technet.microsoft.com/en-us/library/bb125182.aspx>

**Note:** regarding troubleshooting we propose to install an Outlook 2007 client at each side (may be on the same machine GALsync v5 is installed). Run Outlook in *logging mode* and also use *online mode* (not cached). You will find the log files (\*.fb) in the %temp% directory. Log files are stored in %TEMP%\... (This folder is by default not visible).

### Description

The expected result should display the free/busy information of the remote user with its status information.

If you do not receive the expected result, follow this troubleshooting guide. Please keep in mind that troubleshooting this issue is a quite difficult job in our experience.

**Note:** If you are missing Free/Busy information you may be confused with Outside of working hours. If you see Free/Busy displayed in light-grey blocks, check the working Hours in Outlook.

■ Busy ■ Tentative ■ Out of Office ■ Working Elsewhere ■ No Information ■ Outside of working hours

## Tools

1. Use an Outlook 2007 client and activate protocol logging. For testing purposes do NOT use cached mode.
  1. Turn on logging
  2. On the Tools menu, click Options.
  3. On the Other tab, click Advanced Options.
  4. Select the Enable logging (troubleshooting) check box, and then click OK two times.
  5. Restart Outlook.
2. Install the Office Configuration Analyzer Tool (OffCAT) (<http://support.microsoft.com/kb/2812744/EN-US>) and run a Fullscan for Outlook. Are there any errors indicated?
3. Search for the official Microsoft documentation *Availability Web Service Protocol Specification* [MS-OXWAVLS] - v1.04. It contains a lot of error codes and descriptions.
4. Troubleshooting Free/Busy Information for Outlook 2007  
[http://technet.microsoft.com/en-us/library/bb397225\(EXCHG.80\).aspx](http://technet.microsoft.com/en-us/library/bb397225(EXCHG.80).aspx)
5. How to Troubleshoot the Microsoft Exchange Server 2007 Availability Service By Using Microsoft Office Outlook Logging  
[http://technet.microsoft.com/en-us/library/ff597979\(EXCHG.80\).aspx](http://technet.microsoft.com/en-us/library/ff597979(EXCHG.80).aspx)
6. Diagnose Availability Service Issues  
<http://technet.microsoft.com/en-us/library/bb124805.aspx>
7. How to Diagnose Availability Service Issues  
[http://technet.microsoft.com/en-us/library/bb124805\(EXCHG.80\).aspx](http://technet.microsoft.com/en-us/library/bb124805(EXCHG.80).aspx)

## Appendix

querySchema.ps1

```
Import-Module ActiveDirectory
$ADInfo = Get-ADDomain
$PDC = $ADInfo.PDCEmulator
$ADDomainDistinguishedName = $ADInfo.DistinguishedName
write-output "Active Directory Schema version ($PDC)" `r
$ADSchema = repadmin /showattr $PDC
"cn=Schema,cn=Configuration,$ADDomainDistinguishedName"
/atts:ObjectVersion
$ADSchemaArray = $ADSchema -split ":"
[int]$ADSchemaNum = $ADSchemaArray[4] ## -replace("`",",")
[int]$ADSchemaNum
write-output "Exchange Schema version ($PDC)" `r
$ExchangeSchemaVer = repadmin /showattr $PDC "cn=ms-exch-schema-
version-pt,cn=Schema,cn=Configuration,$ADDomainDistinguishedName"
/atts:rangeupper
$ExchangeSchemaArray = $ExchangeSchemaVer -split ("rangeUpper: ")
$ExchangeSchemaVersion = $ExchangeSchemaArray[3]
$ExchangeSchemaVersion
```

### Free/Busy and Shared Namespace

Assumed you have two forests using the same PRIMARY SMTP ADDRESS you can synchronize with GALSYNC.

Free/Busy lookups are different from mail routing: no SMTP traffic is required. F/B lookups are performed by the Availability Service which is part of the Exchange Web Services. So port 443 (HTTPS) is used. Basically a user picks the synchronized contact and tries to get Free/Busy information, then the Availability Service takes the contact's domain-part of the PRIMARY SMTP ADDRESS and looks if there is an AVAILABILITYADDRESSSPACE configuration for this mail domain. If found it sends the F/B-request via HTTPS to the remote Availability Service (of the Exchange organization which hosts the mailbox-enabled user object).

If you use a shared namespace at both sides it will not work by default because it is based on different AVAILABILITYADDRESSSPACE namespaces. But if the synchronized contact uses a secondary SMTP address instead you can configure a unique AVAILABILITYADDRESSSPACE.

GALSYNC allows you to modify the PRIMARY SMTP ADDRESS at import site.

## Example

	Exchange organization A	Exchange organization B
Primary SMTP Address (Exchange-Configuration)	Common.com	Common.com
Secondary SMTP Address (Exchange- Configuration)	One.com	Two.com
Add-AvailabilityAddressSpace (Exchange- Configuration)	Two.com	One.com
Configuration of the import-policy (GALsync-Software)	MODIFY PRIMARY SMTP ADDRESS WITH DOMAIN: TWO.COM	MODIFY PRIMARY SMTP ADDRESS WITH DOMAIN: ONE.COM

## Cross-Forest-Free/Busy and Cross-Forest-Delegation between dedicated Exchange Online (only) / Office 365 organizations

### Cross-Forest-Free/Busy

Usually people are able to send individual requests to share calendars, but you want to implement an enterprise-wide configuration. If you want that all the mail objects of your partner-organization are present in your own GLOBAL ADDRESS LIST (GAL) then you can use a tool like GALsync. Between 2 Exchange Online Partners you do not need to establish a Federation Trust or configure AUTODISCOVER records because this is already present (by default).

In the following example we have two Exchange Online organizations named OrgA and OrgB.

Regarding organization a.onmicrosoft.com execute in Windows Powershell the set of commands described below using the credential of an admin in OrgA (i.e. [admin@orga.onmicrosoft.com](mailto:admin@orga.onmicrosoft.com))

```
Set-ExecutionPolicy RemoteSigned
$LiveCred = Get-Credential
$Session = New-PSSession -ConfigurationName Microsoft.Exchange -ConnectionUri
https://ps.outlook.com/powershell/ -Credential $LiveCred -Authentication Basic -AllowRedirection
Import-PSSession $Session
Enable-OrganizationCustomization (has an error as result in my experiences but it does not impact the total
result)
Get-FederationInformation -DomainName orgb.onmicrosoft.com | New-OrganizationRelationship -Name orgb -
FreeBusyAccessEnabled $true -FreeBusyAccessLevel LimitedDetails
```

After that users from organization OrgB can take users from OrgA through picking the object from GAL (done by GALsync) and they can query free/busy information.

Regarding organization orgb.onmicrosoft.com execute in Windows Powershell the set of commands described below using the credential of an admin in OrgB (i.e. [admin@orgb.onmicrosoft.com](mailto:admin@orgb.onmicrosoft.com))

```
Set-ExecutionPolicy RemoteSigned
$LiveCred = Get-Credential
$Session = New-PSSession -ConfigurationName Microsoft.Exchange -ConnectionUri
https://ps.outlook.com/powershell/ -Credential $LiveCred -Authentication Basic -AllowRedirection
Import-PSSession $Session
Enable-OrganizationCustomization (has an error as result in mzx experiences but it does not impact the total
result)
Get-FederationInformation -DomainName orga.onmicrosoft.com | New-OrganizationRelationship -Name orga -
FreeBusyAccessEnabled $true -FreeBusyAccessLevel LimitedDetails
```

After that users from organization OrgA can take users from OrgB through picking the object from GAL (done by GALsync) and they can query free/busy information.

## Links

<http://maso.dk/2011/07/26/federation-in-the-cloud-enable-freebusy/>  
<http://help.outlook.com/en-us/140/ff383252.aspx>

## Cross-Forest-Delegation

## Links

<http://support.microsoft.com/kb/2872167>  
[http://technet.microsoft.com/en-us/library/dd638083\(v=exchg.150\).aspx](http://technet.microsoft.com/en-us/library/dd638083(v=exchg.150).aspx)

## Cross-Forest Free/Busy with MS-Federation

You can also use GALsync to provide contacts with Directory Synchronization and using MS-Federation to get Free-Busy information. Henrik Walter has written a great post about this subject. Although he describes FIM as DIRSYNC tool you may read this article and simply replace MICROSOFT FIM with NETSEC'S GALSYNC.

## Links

<http://www.expta.com/2011/07/how-to-configure-exchange-2010-sp1.html>  
<http://www.msexchange.org/articles-tutorials/exchange-server-2010/migration-deployment/deep-dive-into-rich-coexistence-between-exchange-forests-part1.html>  
<http://blogs.technet.com/b/exchange/archive/2012/10/30/managing-federated-sharing-with-the-eac.aspx>  
[http://technet.microsoft.com/en-us/library/bb125182\(v=exchg.80\).aspx](http://technet.microsoft.com/en-us/library/bb125182(v=exchg.80).aspx)  
[http://technet.microsoft.com/en-us/library/bb125182\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/bb125182(v=exchg.141).aspx)

## Cross Org Availability using Federation Trust and Organization Relationship

<http://blogs.technet.com/b/exchange/archive/2011/06/28/cross-org-availability-using-federation-trust-and-organization-relationship.aspx>

## Sharing in Exchange Online

[http://technet.microsoft.com/en-us/library/jj916670\(v=exchg.150\).aspx](http://technet.microsoft.com/en-us/library/jj916670(v=exchg.150).aspx)

## Federation (Exchange 2013)

<http://technet.microsoft.com/en-us/library/dd335047.aspx>

## Understanding Federation (Exchange 2010)

[http://technet.microsoft.com/en-us/library/dd335047\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/dd335047(v=exchg.141).aspx)

## Hybrid Free Busy Troubleshooter

<http://blogs.technet.com/b/exchange/archive/2013/06/03/the-hybrid-free-busy-troubleshooter-now-available.aspx>

## Exchange Federation – part I

<http://johanveldhuis.nl/en/exchange-federation-deel-i/>

<http://johanveldhuis.nl/en/exchange-federation-deel-ii/>

## How to Configure Exchange 2010 SP1 Federation

<http://www.expta.com/2011/07/how-to-configure-exchange-2010-sp1.html>

## Configure Free/Busy Sharing Between Exchange Organizations

[http://technet.microsoft.com/en-us/library/hh310374\(v=exchg.141\).aspx](http://technet.microsoft.com/en-us/library/hh310374(v=exchg.141).aspx)

### Errors (Support)

- ID:1011  
When querying Availability for the recipient e-mail address [email@domain.com](mailto:email@domain.com), the following error code and message were received:  
ErrorProxyRequestProcessingFailed:Unable to send cross-forest request for mailbox because of invalid configuration., inner exception: Configuration information for forest/domain domain.com could not be found in Active Directory.
- ID: 4002  
ProxyWebRequest CrossForest from SID to  
<https://mail.domain.com/ews/exchange.asmx> failed. A connectoin attempt failed because the connected party did not properly respond after a period of time or established connection failed because connected host as failed to respond (PublicIP).

### Document tags

GALsync, DIRsync, Cross-Forest Online Free/Busy, Get-AvailabilityAddressSpace, Set-AvailabilityAddressSpace, Remove-AvailabilityAddressSpace, Set-AvailabilityConfig, Get-AvailabilityConfig, federated Free/Busy, Federation, FreeBusy Proxy account, cross-forest delegation, cross-forest calendaring, Office Configuration Analyzer Tool (OffCAT), New-OrganizationRelationship, Get-FederationInformation, FreeBusyAccessEnabled, FreeBusyAccessLevel, TargetApplicationUri, federation trust, federated delegation, rich coexistence between Exchange Forests, InterOrg, Replicate free/busy, ms-Exch- EPI-Token-Serialization, autodiscover endpoint couldn't be discovered, ErrorProxyRequestProcessingFailed, Federated sharing