

Exchange Server 2007 Edge Backup and cloning

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Abstract

In this article I will show you how to backup the Exchange Server 2007 Edge Server transport role with NTBACKUP and other techniques and how to use Edge cloning to clone an Edge Server configuration. With this techniques it should be possible to successfully backup and recovery an Exchange Server in case of emergency.

Let's begin

I will start this article with a short description about the Exchange Server Edge Transport role and we will then be going into details how it is possible to backup an Exchange Server with built in tools of Windows Server 2003 and how you can use the Exchange Server Edge cloning process to backup Edge Transport Server functions.

What is the Edge Server transport role

An Edge Server Transport role is new to Exchange Server 2007. An Edge Transport Server is a specially Exchange role which will be typically placed into the DMZ (DeMilitarized Zone) of an Enterprise. The role of the Exchange Server 2007 Edge Transport Server is to be a SMTP Gateway for incoming and outgoing E-Mail messages. While transferring messages through the Edge Server, E-Mail messages will be scanned to fulfil message Hygiene functions like SenderID, Intelligent Message filtering and different White- and Blacklists. As an additional service it is possible to install Microsoft Forefront Edge Server Security products to scan E-Mail messages against viruses and additional anti spam methods.

Exchange Server 2007 Edge Transport servers are not part of the internal Active Directory domain and are typically installed into a Windows Server workgroup. Exchange Server 2007 Edge Transport server uses AD/AM – Active Directory Application mode, a minimal Directory service to store some information about Exchange recipients and some more information. A process called EdgeSync synchronizes information from internal Active Directory servers into the AD/AM database instance.

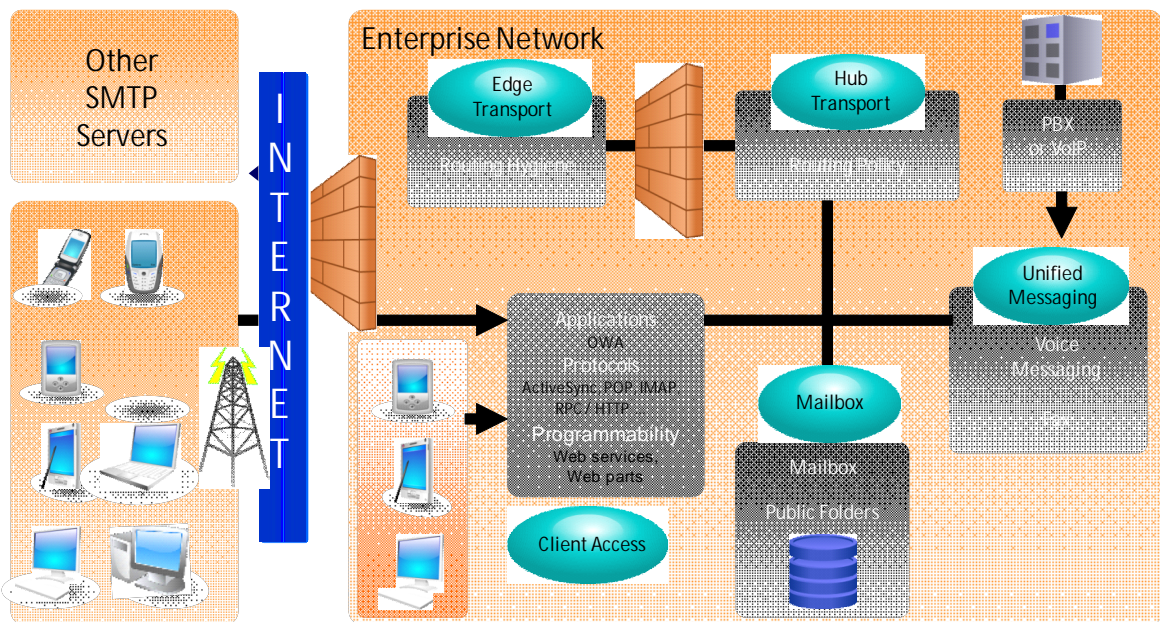


Figure 1: Exchange Server 2007 roles (Source: Microsoft)

Using NTBACKUP

The primary backup method of a Edge Transport Server is to use the Edge Cloning feature but in addition to a cloned configuration you should backup the System State on every Exchange Edge Server and the Exchange Message Tracking and protocol log files which are typically stored in C:\Program Files\Microsoft\Exchange Server\TransportRoles\Logs.

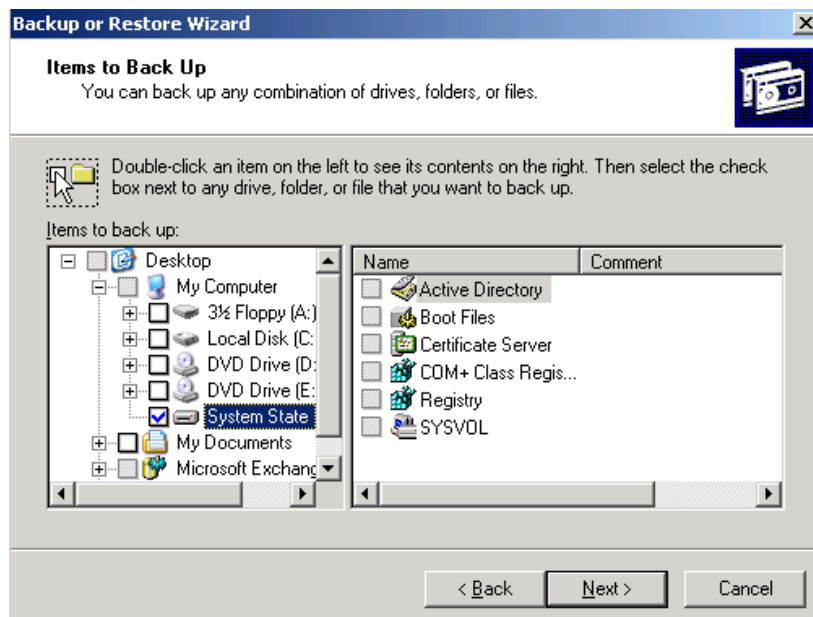


Figure 2: Backup the System State of the Edge Transport server role

Using Edge Cloning

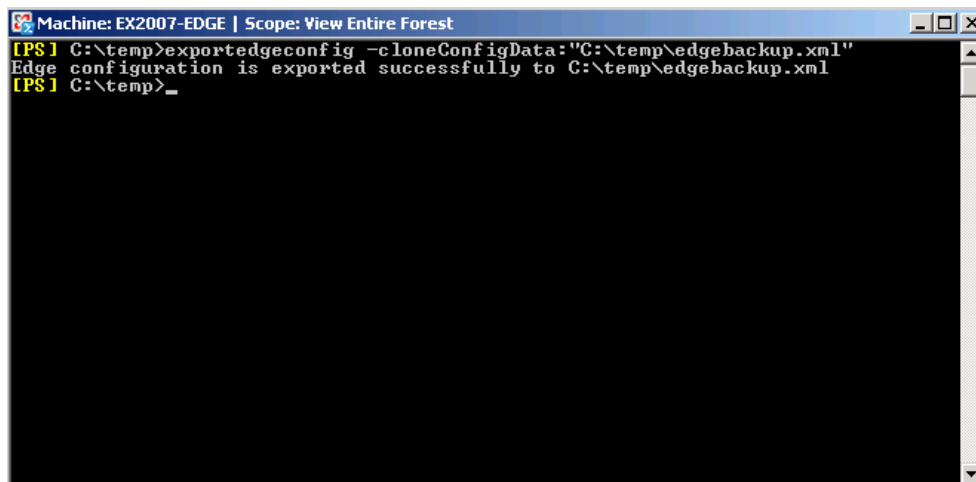
As you now know, Exchange Server 2007 Edge Transport servers stores its information in an ADAM database. ADAM supports replication but Exchange Server 2007 doesn't use this feature so if you must implement multiple Edge Transport servers in the DMZ you have to manually create the required configuration or you must use a process called Edge cloning which is used to easily configure multiple Edge Transport servers. To enable cloned Edge Transport Servers you must use the Exchange Management Shell (EMS) to execute some predefined scripts. You will export the Edge Server configuration on the source Transport Server into an XML file. The cloned Edge configuration will then be deployed on the destination Server. After successfully importing the XML file on the destination server you can start the Edge Sync process.

There are some things to keep in mind: An Edge Server cloned configuration does not replicate the Edge Subscription settings of the source server. The certificates that must be used by the EdgeSync service are also not cloned. You must run the EdgeSync process separately for each Edge Transport Server. Edge cloning is a process of configuring multiple Edge Transport servers with identical configurations. Edge cloning can be used to back up the configuration on one Edge Transport server, and then replicate it to another Edge Transport server for redundancy or disaster recovery.

The cloned configuration process consists of three steps:

First you must export the configuration on the Source Edge Transport Server. You must run the `ExportEdgeConfig.ps1` script to an intermediate XML file.

Syntax: `./ExportEdgeConfig -cloneConfigData:"C:\CloneConfigData.xml"`

A screenshot of a PowerShell console window. The title bar reads "Machine: EX2007-EDGE | Scope: View Entire Forest". The command prompt shows the following text: [PS] C:\temp>exportedgeconfig -cloneConfigData:"C:\temp\edgebackup.xml". Below the command, a message states "Edge configuration is exported successfully to C:\temp\edgebackup.xml". The prompt then shows [PS] C:\temp>_.

```
Machine: EX2007-EDGE | Scope: View Entire Forest
[PS] C:\temp>exportedgeconfig -cloneConfigData:"C:\temp\edgebackup.xml"
Edge configuration is exported successfully to C:\temp\edgebackup.xml
[PS] C:\temp>_
```

Figure 2: Export Edge configuration

Next you must validate the configuration on the Edge Transport server where you want to import the configuration. Run the `ImportEdgeConfig.ps1` script. The script checks the intermediate XML file that you previously created by the Edge Transport export process to see that the exported settings are valid for the target server and then creates the answer file. The answer file is typically empty and contains only data when there are server settings that are not valid in the intermediate XML file from the source Server.

The following picture shows an example of the exported XML file.

```
<?xml version="1.0" encoding="utf-8" ?>
- <ExportedEdgeConfiguration>
  - <TransportServer>
    <AntispamAgentsEnabled>True</AntispamAgentsEnabled>
    <AntispamUpdatesEnabled>True</AntispamUpdatesEnabled>
    <ConnectivityLogEnabled>False</ConnectivityLogEnabled>
    <ConnectivityLogMaxAge>30.00:00:00</ConnectivityLogMaxAge>
    <ConnectivityLogMaxDirectorySize>250MB</ConnectivityLogMaxDirectorySize>
    <ConnectivityLogMaxFileSize>10MB</ConnectivityLogMaxFileSize>
    <ConnectivityLogPath>C:\Programme\Microsoft\Exchange Server\TransportRoles\Logs\Connectivity</ConnectivityLogPath>
    <ContentConversionTracingEnabled>False</ContentConversionTracingEnabled>
    <DelayNotificationTimeout>04:00:00</DelayNotificationTimeout>
    <DistinguishedName>CN=EX2007-EDGE,CN=Servers,CN=Exchange Administrative Group (FYDIBOHF23SPDLT),CN=Administrative
      Groups,CN=First Organization,CN=Microsoft Exchange,CN=Services,CN=Configuration,CN={FE97C3E2-4620-4AC6-A100-
      9FC922E09FEE}</DistinguishedName>
    <ExchangeVersion>0.1 (8.0.535.0)</ExchangeVersion>
    <ExternalDelayDsnEnabled>True</ExternalDelayDsnEnabled>
    <ExternalDNSAdapterEnabled>True</ExternalDNSAdapterEnabled>
    <ExternalDNSAdapterGuid>00000000-0000-0000-0000-000000000000</ExternalDNSAdapterGuid>
    <ExternalDNSProtocolOption>Any</ExternalDNSProtocolOption>
    <ExternalDNSServers>$null</ExternalDNSServers>
    <ExternalDsnDefaultLanguage>de-DE</ExternalDsnDefaultLanguage>
    <ExternalDsnLanguageDetectionEnabled>True</ExternalDsnLanguageDetectionEnabled>
    <ExternalDsnMaxMessageAttachSize>10MB</ExternalDsnMaxMessageAttachSize>
    <ExternalDsnReportingAuthority>perimeter.zone</ExternalDsnReportingAuthority>
    <ExternalDsnSendHtml>True</ExternalDsnSendHtml>
    <ExternalIPAddress>$null</ExternalIPAddress>
    <ExternalPostmasterAddress>$null</ExternalPostmasterAddress>
    <Guid>86eb4d06-be77-4482-9e8c-52dbfbc70b5</Guid>
    <Identity>EX2007-EDGE</Identity>
    <InternalDelayDsnEnabled>True</InternalDelayDsnEnabled>
```

Figure 3: Intermediate XML export file

After that, import the configuration on the Edge Transport target server. The `ImportEdgeConfig.ps1` script uses the intermediate XML file and the answer file to clone an existing configuration or to restore the destination Edge Transport server to a specific configuration.

The Edge Transport Server export process exports the following configuration settings to the intermediate XML file.

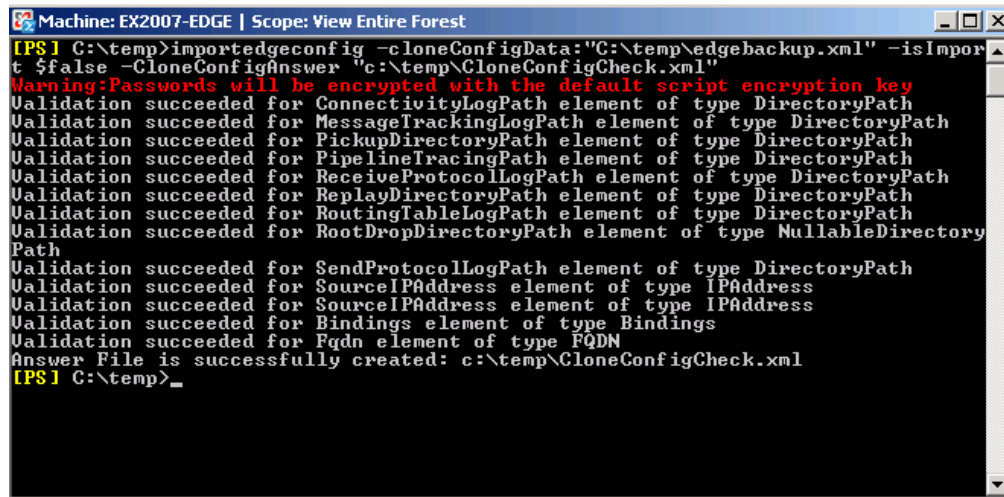
- `ReceiveProtocolLogPath`
- `SendProtocolLogPath`
- `MessageTrackingLogPath`
- `PickupDirectoryPath`
- `RoutingTableLogPath`
- Transport agent-related information that includes the status and priority settings of each transport agent.
- All Send connector-related information
- Receive connector-related information. To modify the local network binding and port properties, you must modify the configuration information in the answer file that is created in the validate configuration step.
- Accepted domain configuration.
- Remote domain configuration.
- Anti-spam features configuration settings.

Validating the Configuration

The target server is an Exchange 2007 server that has a clean installation of the Edge Transport server role. Run the `ImportEdgeConfig.ps1` script on the target server to validate the existing information in the intermediate XML file and to create the answer file. The answer file specifies the server-specific information that is used during the next step in the cloned configuration process when you import the configuration on the target server. The answer file contains entries for each source

server setting that is not valid for the target server. You can modify these settings so that they are valid for the target server. If all settings are valid, the answer file contains no entries. The intermediate XML file can be used for different target servers. The answer file is specific to a target server.

Syntax: .\importedgeconfig.ps1 -cloneConfigData "C:\CloneConfigData.xml" -isImport \$false -CloneConfigAnswer "C:\CloneConfigAnswer.xml"



```
Machine: EX2007-EDGE | Scope: View Entire Forest
[PS] C:\temp>importedgeconfig -cloneConfigData:"C:\temp\edgebackup.xml" -isImport $false -CloneConfigAnswer "c:\temp\CloneConfigCheck.xml"
Warning: Passwords will be encrypted with the default script encryption key
Validation succeeded for ConnectivityLogPath element of type DirectoryPath
Validation succeeded for MessageTracingLogPath element of type DirectoryPath
Validation succeeded for PickupDirectoryPath element of type DirectoryPath
Validation succeeded for PipelineTracingPath element of type DirectoryPath
Validation succeeded for ReceiveProtocolLogPath element of type DirectoryPath
Validation succeeded for ReplayDirectoryPath element of type DirectoryPath
Validation succeeded for RoutingTableLogPath element of type DirectoryPath
Validation succeeded for RootDropDirectoryPath element of type NullableDirectoryPath
Validation succeeded for SendProtocolLogPath element of type DirectoryPath
Validation succeeded for SourceIPAddress element of type IPAddress
Validation succeeded for SourceIPAddress element of type IPAddress
Validation succeeded for Bindings element of type Bindings
Validation succeeded for Fqdn element of type FQDN
Answer File is successfully created: c:\temp\CloneConfigCheck.xml
[PS] C:\temp>
```

Figure 4: Check the Export file

Importing the Configuration

You must run the ImportEdgeConfig.ps1 script to validate and import the configuration from the source server to the destination server.

Syntax: .\importedgeconfig.ps1 -cloneConfigData "C:\CloneConfigData.xml" -isImport \$true -CloneConfigAnswer "C:\CloneConfigAnswer.xml"

The import process takes a while and if everything is going fine, you will get the following message after the import process: "Importing Edge configuration information succeeded".

What is not part of the cloning process?

When the configuration information is exported from the source Edge Transport server, the Transport configuration object which contains E-Mail transport settings will not be submitted to the intermediate XML file which you must import into the destination Edge Server. If you want to have these settings on the cloned destination Exchange Edge Server you have to use an Exchange Management Shell CMDlet (Set-TransportConfig).

What's new in Exchange Server 2007 SP1 for the Edge Server Transport role

There are few exciting news with Exchange Server 2007 SP1 and the Edge Transport server role. Edge Transport servers that have Exchange Server 2007 SP1 installed include the transport configuration object in the information that is written to the intermediate XML file. Therefore, the settings of the transport configuration object on

the target server have the same values as the source server after the intermediate XML file is imported.

The following table list the attributes and default values that are used with the Transport configuration object in Exchange Server 2007 RTM and Exchange Server 2007 SP1. Most of the objects are only configurable on Hub Transport Server but it is possible to configure these objects on Exchange Server 2007 Edge Server too, but these settings have no effects.

Attribute	Description	Exchange 2007 RTM default value	Exchange 2007 SP1 default value
ClearCategories	This attribute specifies whether to clear Microsoft Office Outlook categories during content conversion.	True	True
GenerateCopyOfDSNFor	This attribute specifies the delivery status notification (DSN) codes that cause the DSN message to be copied to the postmaster e-mail address. DSN codes are entered as x.y.z and are separated by commas.	5.4.8, 5.4.6, 5.4.4, 5.2.4, 5.2.0, 5.1.4	5.4.8, 5.4.6, 5.4.4, 5.2.4, 5.2.0, 5.1.4
InternalSMTPServers	This attribute specifies a list of internal Simple Mail Transfer Protocol (SMTP) server IP addresses or IP address ranges that should be ignored by Sender ID and connection filtering.	Null	Null
JournalingReportNdrTo	This attribute specifies the e-mail address to which journal reports are sent if the journaling mailbox is unavailable. This attribute doesn't apply to the configuration of an Edge Transport server.	Null	Null
MaxDumpsterSizePerStorageGroup	This attribute specifies the maximum size of the transport dumpster on a Hub Transport server. This attribute doesn't apply to the configuration of an Edge Transport server.	18 MB	18 MB
MaxDumpsterTime	This attribute specifies how long an e-mail message should remain in the transport dumpster on a Hub Transport server. This attribute doesn't apply to the configuration of an Edge Transport server.	7:00:00:00	7:00:00:00
MaxReceiveSize	This attribute specifies the maximum message size that can be received by recipients in the organization. This attribute doesn't apply to the configuration of an Edge Transport server.	Unlimited	10 MB
MaxRecipientEnvelopeLimit	This attribute specifies the maximum number of recipients that are allowed in a single e-mail message. This attribute doesn't apply to the configuration of an Edge Transport server.	Unlimited	5,000
MaxSendSize	This attribute specifies the maximum message size that can be sent by senders in the organization. This attribute doesn't apply to the configuration of an Edge Transport server.	Unlimited	10 MB
TLSReceiveDomainSecureList	This attribute specifies the remote domains that will use mutual Transport Layer Security (TLS) authentication through Receive connectors configured to support Domain Security. Multiple domains may be separated by commas. The wildcard character (*) is not supported in the domains that are listed in this attribute.	Null	Null
TLSsendDomainSecureList	This attribute specifies the remote domains that will use mutual TLS authentication when e-mail is sent through a Send connector configured to support Domain Security and the address space of the target domain. Multiple domains may be separated by commas. The wildcard character (*)	Null	Null

	is not supported in the domains that are listed in this attribute.		
VerifySecureSubmitEnabled	The valid values for this attribute are True or False . The VerifySecureSubmitEnabled attribute verifies that e-mail clients that are submitting messages from mailboxes on Mailbox servers are using encrypted MAPI submission. This attribute doesn't apply to the configuration of an Edge Transport server.	False	False
VoicemailJournalingEnabled	This attribute specifies whether Unified Messaging voice mail is journaled by the Journaling agent. This attribute doesn't apply to the configuration of an Edge Transport server.	True	True
Xexch50Enabled	This attribute specifies whether Xexch50 authentication should be enabled for backward compatibility with Exchange Server 2003 servers.	True	True

Table 1: New Edge Transport Server features in Exchange Server 2007 SP1 (Source: Microsoft)

Related Links

Using Edge Transport Server Cloned Configuration

<http://technet.microsoft.com/en-us/library/aa998622.aspx>