Installing ISA Server 2004 Enterprise Edition – Part II – Installing ISA Server 2004 Firewall on two Servers

Written by Marc Grote - mailto:grotem@it-training-grote.de

Abstract

This is the second part article of a four part article series which will show you how to install and configuring ISA Server 2004 Enterprise Edition on two ISA Server Firewall members. These article series will contain the following articles:

- Installing ISA Server 2004 Enterprise Edition Part I Installing and Configuring the Configuration Storage Server
- Installing ISA Server 2004 Enterprise Edition Part II Installing ISA Server 2004 Firewall on two Servers
- Administering ISA Server 2004 Enterprise Arrays
- Enabling CARP and NLB in ISA Server 2004 Enterprise

If you have more ideas about ISA Server 2004 Enterprise articles, please let me know and I will check if your idea could be part of a new article.

Let's begin

For this article series we have the following configuration:

Name	Role	Configuration
DEN-DC-01	Windows 2003 Domain Controller	INTERNAL: 192.168.1.10
DEN-CSS-01	Windows 2003 Member Server with ISA Server 2004 Configuration Storage Server	INTERNAL: 192.168.1.20
DEN-ISAEE-01	Windows 2003 Member Server with ISA Server 2004 Enterprise Firewall	INTRAARRAY: 192.168.0.1 INTERNAL: 192.168.1.1 EXTERNAL: 172.16.1.1
DEN-ISAEE-02	Windows 2003 Member Server with ISA Server 2004 Enterprise Firewall	INTRAARRAY: 192.168.0.2 INTERNAL: 192.168.1.2 EXTERNAL: 172.16.1.2

First start the Configuration Storage Server and check the event logs for errors. If everything is fine, insert the ISA Server 2004 CD into the first Windows Server 2003 machine and start the setup process. Select **Install ISA Server services (Figure 1)**.

etup Scenarios	
Select the scenario that best describes this installation.	
• Install ISA Server services	
The computer will be an ISA Server array member running ISA Server services.	
C Install <u>C</u> onfiguration Storage server	
The computer will store the configuration used by ISA Server arrays. ISA Server a computers will connect to this server to retrieve the configuration.	rray
$^\circ$ Install both ISA Server services and Configuration Storage server	
The computer will be an ISA Server array member and used to store the enterprise configuration.	9
🗘 Install ISA Server <u>M</u> anagement	
The computer will be used to remotely manage the ISA Server enterprise.	

This setup options installs the **ISA Server** components and **ISA Server Management**. If you wish to install additional components select the required features (**Figure 2**).

mponent	Selection			
he selected	features will be installed.			
ick on an ic	on in the list to view or modif	y how a feature i	s installed.	
F	ISA Server		Feature Description	
	ISA Server Management Firewall Client Installation S Message Screener	5hare	Controls access and between networks.	traffic
<u>× •</u>	I comiguration storage serv	er	This feature requires your hard drive. It h subfeatures selecter subfeatures require your hard drive.	s 24 MB on as 1 of 1 d. The 64 MB on
all to: Program File	es\Microsoft ISA Server\			Change

Figure 2: Select ISA Server components

In the next installation screen (**Figure 3**) you must specify the Configuration Storage Server and the credentials for connecting to this server.

onfiguration Storage server (t	ype the FQDN):	
Den-CSS-01.Cohovineyard.co	m Br <u>o</u> wse	
Connection Credentials		
Connect using the crede	entials of the logged on user	
C Connect using this accou	unt:	
User name:		
Password:		

Figure 3: Select the Configuration Storage Server

Select **Join an existing array**. To join an existing array the installation account must have ISA Server Array Administrator privileges. You will learn more about ISA Server permissions and delegation feature in the next article of this article series on www.isaserver.org.

Microsoft ISA Se	ver 2004 - Installation Wizard	
Array Membershi	p	
Select the array m	embership for this ISA Server computer.	
C <u>C</u> reate a nev	ı array	
Create a new a an array, you i	array and add this ISA Server computer to that array. To create nust have ISA Server Enterprise Administrator privileges.	
• Join an exist	ing array	
Add this ISA Se array, you mus	erver computer to an existing ISA Server array. To join an existing st have ISA Server Array Administrator privileges.	J
		- 1
	<u> </u>	Lancel

Figure 4: Join an existing Array

Select the Array Name **MainArray** (**Figure 5**). You must have Array Administrator rights to install the ISA Server Firewall into the existing Array.

Port requirements for ISA Server communication

ISA Server components require several ports to communicate with other Configuration Storage Servers, ISA Server Firewall members and ISA Server Management computers.

MS Firewall Storage

MS Firewall Storage is an inbound LDAP-based protocol. It uses port 2172 for SSL connections and port 2171 for non-SSL connections. Array Members communicate with the Configuration Storage Server using the MS Firewall Storage protocol. Computers running the ISA Server Management console also use the MS Firewall Storage protocol to read and write from the Configuration Storage Server.

MS Firewall Storage Replication

This protocol is an outbound TCP protocol, which is defined on port 2173. MS Firewall Storage Replication is used for configuration replication between Configuration Storage Servers.

MS Firewall Control

This is another outbound TCP protocol and is defined on port 3847. It is used for communications between ISA Server Management and computers running ISA Server services.

Remote Procedure Call (RPC)

To monitor server performance, the ISA Server Management computer requires remote procedure call (RPC) connectivity to the ISA Server computers.

- Existing Acc	rver 2004 - Installation Wizaru		
pecify the array	y this ISA Server computer will join.		
Array name:	Main Array	Browse	
To spin	select an array, you must have array cified array.	administrative privileges for	r the
To spi	select an array, you must have array cified array.	administrative privileges for	r the
To spi	select an array, you must have array cified array.	administrative privileges for	r the
To spin	select an array, you must have array cified array.	administrative privileges for	r the

Figure 5: Specify the Array this ISA Server computer will join

Select **Windows authentication** (**Figure 6**) because we are deploying ISA Server services and the Configuration Storage Server in the same domain so that the connection will be encrypted (signed and sealed).

Confi Sel	iguration Storage Server Authentication Options lect how the ISA Server computer will authenticate to the Configuration Storage server.	
۲	Windows authentication	
	This ISA Server computer and the Configuration Storage server it will connect to reside in the same domain or in trusted domains. The connection will be encrypted (signed and sealed).	
С	Authentication over SSL encrypted channel	
	This ISA Server computer and the Configuration Storage server it will connect to do not reside in trusted domains, or either computer is part of a workgroup. This computer must trust the Certificate Authority (CA) which issued the server certificate to the Configuration Storage server.	
	C Use an existing trusted root CA certificate	
	C Install a trusted root CA certificate	
~	Br <u>o</u> wse	
Ţ	For details about installing certificates, see the Getting Started Guide.	
	charle Navio Caral	1
	< <u>B</u> ack <u>N</u> ext > Cancel	ļ

Figure 6: Select Windows authentication

Specify the IP address range for the internal network. The internal IP address range will be protected from ISA Server 2004 Enterprise. It is also possible to select Enterprise networks but we haven't created an Enterprise network in our ISA Server Array and you will learn in an upcoming article what Enterprise networks are.

Specify the address ranges you want	included in the ISA Server Internal	
Elick Change to edit or add addresses nternal network.	and Enterprise networks for the	Change
nternal Network Address Ranges (Fr	om-To):	
Enterprise Networks	ed Guide,	

Figure 7: Specify the internal IP address ranges

During installation, some services running locally on this computer may be restarted or disabled (**Figure 8**) and some services will be disabled during installation.



Figure 8: Disabled Services and Services to restart

After finishing setup you must restart the Server so that the configuration changes take effect.

Microsof	ft ISA Server	×
1	You must restart your system for the configuration changes made to Microsoft ISA Server to restart now or No if you plan to restart later.	take effect. Click Yes to

Figure 9: Click Yes to restart the Server

Repeat these steps installing ISA Server 2004 Firewall services on the second ISA Server.

After installing the second Server restart this server and after both ISA Server nodes are rebooted, you can start the ISA Server Management console and navigate to **Arrays – Main Array – Configuration – Servers** to see the if both servers are operational. If everything is fine you will see a green icon (**Figure 10**) on every ISA Server object.



Congratulations. You have successfully installed your first ISA Server 2004 Enterprise Array with two ISA Array Members.

Conclusion

As you have seen in this article, it is not so hard to install ISA Server 2004 Firewall Array members. The third article will deal with the administration of ISA Server 2004 Array members and ISA Server 2004 Arrays.

Related Links

Deployment Guidelines for ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/deploy/dgisaserver.mspx Introduction to Branch Deployment of ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/plan/intro to branch deploy ment ee.mspx ISA Server 2004 Enterprise Edition in a Workgroup http://www.microsoft.com/technet/prodtechnol/isa/2004/plan/workgroup ee.mspx Network Load Balancing in ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/plan/network_load_balancing ee.mspx Troubleshooting Host IDs in ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/hostid.mspx Troubleshooting Network Load Balancing in ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/plan/ts nlb ee.mspx ISA Server 2004 Enterprise Edition Configuration Guide http://download.microsoft.com/download/6/9/0/690d2ee7-a4e0-4c0a-80d4-1e30ebcac1de/isa 2004 ee configuration guide.doc Renaming Configuration Storage Servers in ISA Server 2004 Enterprise Edition http://www.microsoft.com/technet/prodtechnol/isa/2004/plan/renamecss ee.mspx