Microsoft Forefront TMG – How to use SQL Server 2008 Express Reporting Services

Abstract

In this article I will show you how to configure the Microsoft SQL Server 2008 Reporting service with Forefront TMG.

Let's begin

During a Standard Installation of Microsoft Forefront TMG a version of Microsoft SQL Server 2008 Express with SP1 will be installed on the System. The Forefront TMG Web proxy- and Firewall components will use the installed SQL Server 2008 version to store generated Log files. The built In Reporting and Logging functionalities of Forefront TMG will use some underlying SQL Server and SQL Server Reporting features. For example the built in Reporting function in the Forefront TMG console will use the stored data in the SQL databases to generate one time and recurring reports with SQL Server 2008 Reporting functionality. These generated reports can be saved in a file share on the local or a remote Server for later review or a report summary can be send via e-mail. The SQL Server 2008 Express installation which comes with the Forefront TMG installation media doesn't requires an installed Internet Information Service (IIS) for the SQL Server Reporting services which will reduce the attack surface of your Forefront TMG Server.

Let us start with the configuration of the SQL Server 2008 Express Reporting Service configuration. Start the Reporting Services Configuration Manager on the Forefront TMG Server.

Reporting Services Configuration Mana	ager: TMG-EN\ISARS	
Microsoft SQL Server 2008 Reporting Servic	guration Manager	
Connect TMG-EN/ISARS Service Account Web Service URL	Report Server Status Use the Reporting Services Co Manager. If you installed Report database, and the Report Mar Current Report Server	nfiguration Manager tool to define or modify settings for the Report Server and Report orting Services in files-only mode, you must configure the Web service URL, the ager URL.
Database	SQL Server Instance: Instance ID:	ISARS MSRS10.ISARS
Report Manager URL	Edition: Product Version:	EXPRESS ADVANCED EDITION 10.0.2531.0
🚖 E-mail Settings	Report Server Database Name: Report Server Mode:	ReportServer\$ISARS Native
Execution Account	Report Service Status:	Started
R Encryption Keys		itart Stop
ੂ ^ਸ ੁ Scale-out Deployment	Results	
Ø		Apply Exit

Figure 1: SQL Report Server Status

As you can see in the screenshot above, the SQL Server Reporting data will be stored in a database called ISARS in Report Server Native Mode which is the default mode for Report Server installations.

SQL Server Report Server uses the built in Local System account to run the Report Server Report services. If you want to change the account for administrative or security reasons, you can do this here.

Reporting Services Configuration Mana	ger: TMG-EN\ISARS	<u> </u>
Microsoft SQL Server 2008 Reporting Service Reporting Services Config	guration Manager	
Connect TMG-EN\ISARS TMG-EN\ISARS Service Account Web Service URL Database Report Manager URL E-mail Settings E-mail Settings Execution Account Report Manager URL Secution Account Report Secution Account	Service Account Specify a built-in account or Windows domain user account to run the report server service. Report Server Service Account Choose an option to set the service account and then click Apply. © Use built-in account: Account (Domain\user): Password:	
	Results	
0	Apply	Exit

Figure 2: SQL Report Server Status

As a next step it is possible to modify the URL which is used to access the Report Server. It is possible to specify multiple URL to access the Report Server. The Default URL only allows access to the Report Server through the HTTP protocol on Port 8008 which should not be conflict with other services on the Forefront TMG server. If you want to change the Report Server URL to HTTPS you first have to install a correct certificate on the Forefront TMG Server. This certificate will be used to create an SSL Listener for the SQL Report Server. When you use HTTPS to access the Report Server keep ensure that you don't create a Socket which is bound to all IP addresses. The reason for this is if you want to publish additional other services with Forefront TMG which also uses port 443 this will be conflicting with the existing socket for HTTPS on the Forefront TMG Server. You must use unique Sockets else the publishing of secure Webservers with Forefront TMG will fail.

Microsoft SOL Server 2008 Reporting Service					
Reporting Services Config	s guration Manager				
뮆 Connect	Web Service URL				
TMG-EN\ISARS					
service Account	instance, or to specify addition:	s the Report Server. Click Advanced al parameters on the URL.	to define multiple URL	s for a single Report Server	
🚵 Web Service URL	Report Server Web Service has mor	e than one HTTP or HTTPS sites. Cl	ick Advanced to manag	je them.	
🗍 Database	Report Server Web Service Virtual Director Virtual Directory:	Advanced Multiple Web Site Co	nfiguration		×
Report Manager URL	Report Server Web Service Site identifica	Configure various iden	tities for the Report Serv	ver Web service.	
🚖 E-mail Settings	IP Address:	Multiple HTTP Identities for the	Report Server Web Ser	Host Header	
Execution Account	SSL Certificate:	127.0.0.1	8008		
R Encryption Keys	SSL Port:				
ຼ່ ^ສ ີ່ Scale-out Deployment	Report Server Web Service URLs URLs: <u>htt</u>	Add	Remove	Edit	J
		TP Address	SSI Certific	ce Issued To	
	Results	(All IPv4) 443	tmg-en.trai	ner.in TMG-EN.trainer.i	
		Add	Remove	Edit	
		0	ОК	Cancel	

Figure 3: SQL Server Express Web Service URL

The default database for the Microsoft SQL Server 2008 Reporting Services is the database with the name ReportServer\$ISARS which is installed in an SQL Server instance called ISARS.

Reporting Services Configuration	Manager: TMG-EN\ISARS	
Microsoft SQL Server 2008 Reporting	a services Configuration Manager	
🛃 Connect	Report Manager URL	
TMG-EN\ISARS		
service Account	Configure a URL to access Report Manager. Click Advanced to define multiple URLs, or to specify additional parameters on the URL.	
🍰 Web Service URL	Report Manager Site Identification	
📋 Database	Virtual Directory: Reports_ISARS	
🚱 Report Manager URL		Advanced
🚖 E-mail Settings		
Execution Account		
R Encryption Keys		
Scale-out Deployment		
	Results	
0	AF	ply Exit
ure 4: SQL Server Repor	t Manager URL	

Click *Advanced* to add a Report Manager SSL Binding. Specify the IP address, port and certificate for the SSL Listener.

Advanced Multiple Web Site Confi	dvanced Multiple Web Site Configuration					
Configure various identitie	RLs, orto specify					
Multiple Identities for Report Mana	ger TCP Port	Host Header				
127.0.0.1	8008					
Add	Remove Managor Add a Report	Edit Manager SSL Binding				
IP Address SSL Port						
	IP Address	(All IPv4)	-			
	SSL Port	443				
Add	F Certificate	tmg-en.trainer.	intem 🔽			
	URL	https://TMG-E	N.trainer.intern:443/Re			
	0		OK Cancel			

Figure 5: Enable HTTPS for the Report Manager

As a next step verify the successful certificate binding and test the new HTTPS URL to access the Report Manager URL.

Reporting Services Configuration Ma	nager: TMG-EN\ISARS	<u>- 🗆 ×</u>
Microsoft SQL Server 2008 Reporting Ser Reporting Services Con	vices figuration Manager	
Connect	Report Manager URL Configure a URL to access Report Manager. Click Advanced to define multiple URLs, or to specify	
service Account	additional parameters on the URL.	
🥬 Web Service URL	Virtual Directory: Reports_ISARS	
Database	URLs: http://127.0.0.1:8008/Reports_ISARS Advanced	
Report Manager URL		
Execution Account		
Ҟ Encryption Keys		
ی Scale-out Deployment		
	Results	
	Reserving url https://TMG-EN.trainer.intern:443 Gooste cartificate binding	
	The certificate binding was created successfully.	

Figure 6: Successful SSL Binding

You will now see the ISA2008 Reports. Yes, you read it right. Microsoft has forgotten to change the name of the ISA Server 2006 successor in the SQL Server Reporting Services configuration

🖉 Berichts-Manager - Windows Internet Explorer	
CO C + Ittps://tmg-en.trainer.intern/Reports_ISARS/Pages/Folder.aspx?ItemPath=%2fIS	A2008+Reports&Vi 🔽 🔒 🗟 🐓 🗙 🔎 Bing 🖉
🖕 Favorites 🙀 🖉 Suggested Sites 🔻 🖉 Web Slice Gallery 👻	
A Berichts-Manager	🏠 🔹 🗟 👻 🖃 📥 🔹 Page 🔹 Safety 🔹 Tools 🔹 🔞
	Stamm Siteeinstellungen Hilfe
SQL Server Reporting Services	Suchen pach:
ISA2008 Reports	
Inhalt Eigenschaften	
🞬 Neuer Ordner 🛛 🏘 Neue Datenquelle 🔓 Datei hochladen	🧱 Details anzeigen
ApplicationUsage Applications	Summary Users
ApplicationUsage Destinations	Traffic CachePerformance
ApplicationUsage Protocols	Traffic Connections
ApplicationUsage Users	Traffic DailyTraffic
BranchCache Utilization	Traffic Errors
Ips IntrusionAttempts	Traffic ProcessingTime
Ips TopProtocols	Traffic Protocols
ISA RS Db	Traffic Traffic
Malware Sites	Urlf BlockedCategories
Malware SitesDuration	Urlf Categories
Malware Statistics	Urlf RestrictedSites
Malware Threats	Urlf Statistics
Malware Users	I Urlf Users
III Master	UserActivity Sites
Security AuthorizationFailures	WebUsage HttpResponses
Security DroppedPackets	WebUsage ObjectType
SoftBlock Sites	WebUsage Protocols
SoftBlock Users	🗓 WebUsage Users
Summary ServerParticipation	🗓 <u>WebUsage Websites</u>
Figure 7: ISA 2008 Reports	

Please note: If you see the Report Server settings not in English but in your native language, you can change the language settings in your Internet Explorer advanced settings from your native language to English and after that change, the Report Manager settings should be displayed in English. I tested this with an English Windows Server 2008 R2 Operating system and an English version of Forefront TMG but with German language locale.

If you want to create additional SQL Server Reporting Services Roles to delegate the Administration of the SQL Server Reporting Services, it is possible to assign users or groups one or more roles to administer the SQL Server Reporting Services.

🌈 Report Manager - Windows Int	ernet Explorer	
	008/Reports_ISARS/Pages/Ed	itGroup.aspx?ItemPath=%2f&RedirectUrl=http%3a%2f%. 🗾 🗟 🐓 🗙 🔎 Bing
🖕 Favorites 🛛 👍 🙋 Suggested S	ites 👻 🦻 Web Slice Gallery	•
<i>⊜</i> Report Manager		🚹 🔻 🗔 👻 🚍 🚑 👻 Page 👻 Safety 👻 Tools
		Home Site Settings }
SQL Server Report New Role Ass	ting Services signment	Search for:
Use this page to define role Group or user name:	e-based security for H	lome.
Select one or more roles to	assign to the group	or user.
□ Role↓	Description	
Browser	May view folder	s, reports and subscribe to reports.
Content Manager	May manage co	ntent in the Report Server. This includes folders, reports and resources.
My Reports	May publish rep	orts and linked reports; manage folders, reports and resources in a users My Reports folder.
Publisher	May publish rep	orts and linked reports to the Report Server.
Report Builder	May view repor	t definitions.
OK Cancel		

Figure 8: SQL Server Reporting Role assignment

The SQL Server Reporting Services *Site settings* section allows you to configure how many historical Reports should be kept and the timeout for a Report execution can be configured.



Figure 9: SQL Server Reporting Services Site Settings

Let us switch back to the Reporting Services Configuration Manager wizard. As a next step it is possible to configure some E-mail settings for sending reports via E-Mail. Specify the Sender address and the SMTP Server for sending E-Mails. You cannot specify credentials here for connecting to the SMTP Server, so be sure that the Reporting Server can send E-Mail to the SMTP Server.



Figure 10: SQL Server Reporting E-mail Settings

For some special configurations it is possible to specify an Execution account in the SQL Reporting Services Configuration Manager. The Execution Account allows SQL Reporting Services to operate under certain circumstances when credentials are not supplied, for example for XML. As a best practice you should specify an account which is different from any of the other SQL service accounts. As a best practice you should create a dedicated service account which has sufficient rights to read the locations holding the data. The account will also need to have network login permissions.

Reporting Services Configuration Manager: TMG-EN\ISARS					
Microsoft SQL Server 2008 Reporting Servic Reporting Services Confi	guration Manager				
nect	Execution Account				
TMG-EN\ISARS					
Service Account	Specify this account to enable the use of report data sources that do not require credentials or to connect to remote servers that store external images used in reports. Be sure to specify a domain user account with minimal permissions for performing read-only operations. Avoid using an account that has more permissions than you				
🦽 Web Service URL	compromise security on your report server instance.				
🗍 Database	Execution Account				
🔇 Report Manager URL	Use the following options to set the account, then click Apply.				
🚖 E-mail Settings	Account:				
A Execution Account	Password:				
Recryption Keys	Confirm Password:				
ੂ ^ਸ ੂ Scale-out Deployment	Results				

Figure 11: SQL Server Reporting Execution Account

Encryption keys are used in SQL Server Reporting services to encrypt credentials, connection strings and other sensitive data that is stored in the Reporting Services configuration database. It is possible to Backup, Restore and change the encryption key in the Reporting service configuration wizard.

Connect	Encryption Keys
TMG-EN\ISARS	
service Account	Reporting Services uses a symmetric key to encrypt credentials, connection strings, and other sensitive data that is stored in the report server database. You can manage this key by creating a backup. If you migrate or move the report server installation to another computer, you can restore the key to regain access to encrypted content.
🍰 Web Service URL	
🗍 Database	Backup A Backup the key to a password protected file for report server recovery in case of emergency. Backup Backup
🔇 Report Manager URL	Restore
🚖 E-mail Settings	To restore the encryption key, dick the Restore button. You must know the password that was used to protect the encryption key file.
Execution Account	Change
R Encryption Keys	This operation replaces the encryption key with a newer version. Change
스 Scale-out Deployment	Delete Encrypted Content
	All stored connection strings, credentials, and encrypted values in a subscription will be deleted. After you delete this content, you must redefine all data source connections and subscriptions used on the report server.
	Results

Because scale-out Deployment is not available in SQL Server 2008 Express editions, I would not tell you more about this configuration.

Reporting Services Configuration Ma	anager: TMG-EN\ISA	RS		_02
Microsoft SQL Server 2008 Reporting Se Reporting Services Cor	nfiguration Mana	ger		
	Scale-out Dep	loyment		
TMG-EN\ISARS	Use enc	e this page to view inform rypted data in a commor	nation about a scale-out deployment. Report Serve 1 Report Server database. Servers that are waiting	rs that are joined to the scale-out can store to join the scale-out deployment must be
🧀 Web Service URL	auc	ieu by a keport server in	stance that is aready part of the deployment.	
🗍 Database	Scale-out Dep	loyment Status Server Name:	.\ISARS	
Report Manager URL	Datal Repo	base Name: rt Server Mode:	ReportServer\$ISARS Native	
Execution Account	Server TMG-EN		Instance ISARS	Status Joined
Encryption Keys				
ن ^۳ ظ Scale-out Deployment				
			Add Server	Remove Server
	Results			
Ø				Apply Exit
oure 13: Scale-out Deploym	ent			

Conclusion

In this article I gave you some additional information how to configure the SQL Server 2008 Express Reporting Services which will be used from Microsoft Forefront TMG to provide Reporting Services built into Forefront TMG. With this additional information you should now be able to customize some Microsoft SQL Server Reporting aspects.

Related links

Troubleshooting reporting http://technet.microsoft.com/en-us/library/ff849731.aspx Logging Enhancements in Microsoft Forefront Threat Management Gateway (TMG) 2010 http://www.isaserver.org/articles/Logging-Enhancement-Microsoft-Forefront-Threat-Management-Gateway-TMG-2010.html Configuring Forefront TMG logs http://technet.microsoft.com/en-us/library/bb794937.aspx Microsoft Forefront TMG – Logging options in Forefront TMG http://www.isaserver.org/tutorials/Microsoft-Forefront-TMG-Logging-options-Forefront-TMG.html How to View TMG Logs when using SQL Server Express for Logging http://blogs.technet.com/b/isablog/archive/2010/03/31/how-to-view-tmg-logs-whenusing-sql-server-express-for-logging.aspx