Microsoft Forefront UAG – Overview of Microsoft Forefront UAG

Abstract

In this article, I will show you how to install and configure some basic settings of Microsoft Forefront UAG. I will also show you how to create a new Portal to publish Exchange Server 2010 Outlook Web App, former known as Outlook Web Access (OWA).

Let's begin

First please note that I'm writing about the release candidate of UAG, so it might be possible that some information are changed in the RTM version of Microsoft Forefront UAG.

Microsoft Forefront UAG, currently available as an RC1 build is the successor of Microsoft Forefront IAG (Intelligent Application Gateway). With the help of UAG it is possible to extend the functionalities of Microsoft Forefront Threat Management Gateway 2010 (TMG). UAG allows the configuration of SSL VPN, the new Direct Access feature of Windows Server 2008 R2 and it also extends the basic webserver publishing features from Microsoft Forefront TMG. With IAG it is possible to create your own publishing portals called a trunk in UAG terms. One of the publishing capabilities of Forefront UAG is the publishing of Microsoft Exchange features like Outlook Web App, Outlook Anywhere but it is also possible to publish Microsoft SharePoint Server services to the Internet.

Key features of Forefront UAG

- Remote access
- Application intelligence
- Security and access control
- Frontend and Backend authentication

System requirements

Microsoft Forefront UAG has the following system requirements

Component	Requirement
Processor	2,66 Ghz or faster, Dual Core CPU
Memory	8 GB RAM or more recommended
Hard drive	30 GB

Table 1: Forefront UAG system requirements

Software and deployment requirements

Servers

Forefront UAG can be installed on computers running Windows Server 2008 R2 Standard or Windows Server 2008 R2 Enterprise X64 bit editions.

Arrays

If you want to deploy an array of multiple Forefront UAG servers, each server that will join the array must be installed as a domain member before beginning Forefront UAG installation.

Network adapters

Forefront UAG must be installed on a computer with at least two network adapters.

Other applications

The computer on which you are installing Forefront UAG should have a clean Windows Server 2008 installation, with no other applications installed on it.

Default installation

By default, Forefront Threat Management Gateway (TMG) is installed during Forefront UAG Setup.

Permissions

When installing Forefront UAG, you must have administrator permissions on the local server. You must also be a domain user in the domain to which the Forefront UAG server belongs.

Installation

After the RC version of UAG is downloaded, we can start the installation process. First review the Hardware and software requirements and check the deployment checklist.



Figure 1: Installation of UAG

After the installation has finished you can launch the Getting Started Wizard from the UAG Management console. The Getting started wizard allows you some basic network configuration settings like UAG network card settings and the UAG Server topology. Forefront UAG can be installed as a standalone Server or in an UAG array to provide high availability and better performance.

🔣 Getting S	tarted Wizard	×
Welcome t This wiza	to Microsoft Forefront Unified Access Gateway 2010 ard helps you configure your network settings.	
\checkmark	Configure Network Settings Specify how Forefront UAG is connected to your network.	
\checkmark	Define Server Topology Optionally join this Forefront UAG server to an array.	
\checkmark	Join Microsoft Update Optionally join Microsoft Update to receive updates for Forefront UAG.	
	Close	

Figure 2: Getting started wizard

The define Network Adapter settings is important to tell UAG which network cards connects to the Internal (Trusted) network and which network card connects to the External (Untrusted) network.

Adapter name	Internal	External	Unassigned
GOOD	~		
SSL Network Tunneling			V
dapter properties:			

Figure 3: Define network adapters

After the Getting started wizard has finished, it is possible to more advanced settings before creating a new trunk but first let's have a look at the installed services during the Forefront UAG setup.

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Microsoft Exchange Anti-spam Update	The Micros	Started	Automatic	Local System
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Microsoft Exchange Monitoring	Allows appl		Manual	Local System
Microsoft Exchange Transport	The Micros	Started	Automatic	Network S
Search Exchange Transport Log Search	Provides re		Manual	Local System
🥋 Microsoft Fibre Channel Platform Registration Service	Registers t		Manual	Local Service
🔍 Microsoft Forefront Server Protection Controller	Starts and	Started	Automatic	Local System
Microsoft Forefront Server Protection Eventing Service	Processes	Started	Automatic	Network S
🧟 Microsoft Forefront Server Protection for Exchange	Ensures th		Automatic	Local System
Microsoft Forefront Server Protection Mail Pickup Ser	Delivers m	Started	Automatic	Network S
🔍 Microsoft Forefront Server Protection Monitor	Monitors E	Started	Automatic	Local System
Microsoft Forefront Server Protection VSS Writer Ser	Provides th	Started	Manual	Local System
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Figure 4: Installed UAG and TMG services

Forefront UAG Gateway Activation Monitor

Forefront UAG now provides an Activation Monitor that shows configuration activation activity. This feature is useful to monitor the status of UAG array members

when activation occurs on the array manager. Activation Monitor is available from the Forefront UAG options in the Start menu.

Sorefront Unified Access 6	ateway Activatio	n Monitor
🔹 Refresh 🔡 Options		
UAG Array Members	Severity	Message
TMG	State	Validating configuration settings.
	Warning	Warning: The trunk "owa" generated the following warning: The server certificate 'TMG' does not m
	Warning	Waming: The trunk "owa" generated the following waming: The server certificate 'TMG' does not m
	Warning	Warning: The trunk "owa" generated the following warning: The server certificate 'TMG' does not m
	Warning	Waming: The trunk "owa" generated the following waming: The server certificate 'TMG' does not m
	State	Starting activation.
	Debugging	Locking the mutex [Global\FilterCfgMutex_owa].
	Information	Configuring NLB settings.
	Information	NLB settings were configured successfully.
	Information	Configuring SSL Network Tunneling (SSTP).
	Information	The SSL Network Tunneling (SSTP) settings were configured successfully.
	Information	The Network Connector service was stopped successfully.
	Information	Activating Network Connector.
	State	Writing the configuration files.
	Debugging	Writing the file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\Reporter.xr
	Debugging	Writing the file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\Repository
	Debugging	Writing the file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\Role.xml].
	Debugging	Writing the machine [TMG] [192.9.200.37] to the High Availability file.
	Debugging	Writing the file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\Monitor\HA.xml]
	State	Configuring Web sites.
	Debugging	Creating directory [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\WebSite
	Information	Writing the site 'owa' configuration.
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\WebSites\owa\co
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\WebSites\owa\ci
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\trunks_config\UAG\ow
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\InternalSite\conf\owaA
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\InternalSite\conf\owa0
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\InternalSite\conf\owa1
	Debugging	The file [C:\Program Files\Microsoft Forefront Unified Access Gateway\von\conf\WebSites\owa\ci
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Figure 5: UAG activation monitor

Microsoft Forefront UAG configuration console

The UAG configuration console allows the configuration of default settings and the creation of new trunks. The console access is divided into three nodes called

- HTTP connection
- HTTPS connection
- DirectAccess

The HTTP and HTTPS connection node is used to create new trunks (aka publishing rules in TMG) to publish services like Outlook Web App in Exchange Server 2010 or many other applications.

The DirectAccess node is used to create Microsoft Windows Server 2008 DirectAccess trunks.

S Microsoft Forefront Unified Access Gatewa	y Management	
File View Admin Messages Help		
🔚 🔇 🔜		
Forefront Unified Access Gateway TMG HTTP Connections HTTPS Connections OWA DirectAccess		
Message Time Message Type	Messane	
measage nine [message type]	measuye	
Ready		

Figure 6: UAG GUI

To configure some default settings which can be used later for creating trunks, you can use the Admin settings. At this point it is possible to configure things like Authentication and Authorization Servers, Network Policy Servers (NPS), Load Balancing settings and many more. The settings you change here, or the objects created in this UI can be used when you create new trunks.



Figure 7: Advanced UAG administration

As you can see in the following screenshot, UAG supports many directory services like Netscape LDAP Server, Novell Directory services and a lot of more Directories.

S Microsoft Forefront Unified Access	Gateway Management	
File View Admin Messages Help		Add Authentication Server
🔚 🚳 🍕		Server type:
Grefront Unified Access Gater TMG TTP Connections TTTPS Connections OWA OWA DirectAccess	Authentication and Authorization	Server name: Active Directory Netscape LDAP Server Notes Directory Connection settings Novell Directory © Define domain RADIUS © Use local Active RSA SecurID Search settings WINHTTP Specify the search Other Base DN:
	AD	Indude subfolders Level of nested groups: Server access Specify credentials used to access Active Directory for retrieving user information and changing passwords. User (domain\user): Password:
		Default domain name Provide a default domain when users log on. This setting is required if you want to use this repository when authenticating users to published applications with single sign-on (SSO). Domain:
Message Time Message	Type Message	

Figure 8: UAG authentication and authorization settings

Network Load Balancing settings

UAG provides its own Network Load Balancing configuration which is really easy to configure. Like the Integrated Network Load Balancing in Microsoft Forefront TMG, UAGs NLB sits on top of the NLB features of the underlying operating system.

rtual IP	Interface Type	Subnet	Address Type	In Use	Add
					Edit
					Remove

Figure 9: Network Load balancing in UAG

Portal publishing

For the examples in this article, I created a new Exchange Server 2010 Outlook Web App (known as OWA in previous versions of Exchange Server) portal. The wizard does a lot of work and eases the creation of a new portal so I will only show you the results of the Wizard, so let's have a look at the Portal settings, created with the wizard. The first page gives you an overview about the basic Portal settings like the Public host name, the IP address and used HTTPS port.

S Microsoft Forefront Unified	Access Gateway Management			_ 8 ×
File View Admin Messages He	elp			
🔚 🔇 🔜				
Forefront Unified Accee	OWA Public host name: mail.it-training-grote.de Port: 443 External Web site HTTPS Port: 443 IP address: 10 10 12	Applications Application Name Portal OWA - Autodiscover OWA - EWS Add	Application Type Portal Microsoft Exchange Server Microsoft Exchange Autods Microsoft Exchange Web Se Microsoft Exchange Web Se	3
		Limit applications to the followi	ing subnets:	
		Subnet Address	Subnet Mask	
	Initial Internal Application	1		
	Initial application : OWA			
	Use portal frame		Add Edit,, Remove	
	Trunk Configuration			
	Configure trunk settings: Configure			.
Magazan Timo	Monagan Tuma Monagan		1	

Figure 10: UAG OWA Trunk settings

If you click *Configure* in the Trunk configuration settings, you will see the power of Microsoft Forefront UAG. The trunk configuration settings allows you to configure so many settings more than Microsoft Forefront TMG, so that you have all the options to provide a more detailed configuration of nearly any setting regarding the configuration of Outlook Web App used in this scenario. For example it is possible to configure the maximum number of concurrent connections to the Outlook Web App Server. It is possible to configure detailed URL inspection and URL set configuration. In the *Application Customization* tab it is possible to customize the Portal experience for Endusers.

🥷 Portal	S URL Inspection	Global URL Settings	URL Set
🍪 General	Authentication 🥼 Sessi	ion 🔗 Endpoint Access Settings	Application Customization
Connections			
Maximum	500		
External Web Site -		r Web Site Logging	
IP address:	10 , 10 , 10 , 12 🔻	Enable Web server logging	
		🗖 Include user name in log	
HTTP port:	<u> </u>		
HTTPS port:	443	- Debugging	
Site name:	owa	Debug mode	
olici fianic.			
Server Certificate —			
Server certificate:	TMG		
Certificate hash:	B8 87 C7 3E 9B A6 94 6F 5D D4 8F 2	28 CB 59 0C AD 55 EE D6 DE	

Figure 11: UAG trunk setting details

One of the most powerful feature in Forefront UAG in my opinion are the Endpoint Access settings which allows you to select specific policies from a long list of policies which allows more granular access to the portal for example for specific operating systems or specific application features. It is possible to create your own policies and expressions in Forefront UAG. UAG compares the policies against a client which wants to access the portal and gives the client access to the portal based on these policies.

anced Trunk Config	uration [OWA]		<u>×</u>
🐏 Portal	URL Inspection	P Global URL Settings	📄 URL Set
😵 General	🎎 Authentication 🛛 🍇 Session	🚱 Endpoint Access Settings	Application Customization
		Policy Editor	
C Deny acres	ess Protection (NAP) policies s to longe name from endopiets that do not hav anage Policies and Expressions	Policy Settings	
NAP policics a	Microsoft CRM 4 Download Microsoft CRM 4 Upload	Name: Microsoft OWA 2010 Download	d mercaner
Select NPS se	Microsoft CRM 4 Enhanced Secu OWA Private Computer SharePoint 2003 Admin Zones	 	uniessage. curity policy requirements of this A administrator.
	SharePoint 2003 Download SharePoint 2003 Enhanced Secu	Create a policy from platform-specific policies	
Session access	SharePoint 2007 Download SharePoint 2007 Upload CheckIn SharePoint 2007 Enable Explorer	Windows: Microsoft OWA 2010 Download (W	indows) Manage Windows Policie
Access method:	Microsoft SharePoint 2010 Beta L Microsoft SharePoint 2010 Beta L	Microsoft OWA 2010 Download (Ma	ac OS) Manage Mac OS Policies
Endpoint Policy:	Microsoft OWA 2007 Download Microsoft OWA 2007 Upload	Other: Never	
Microsoft C	Microsoft OWA 2010 Download Microsoft OWA 2010 Upload Sygate Virtual Desktop	Create a policy from expressions	
	Always Never	Select expressions.	Create Expression
Do not block this	B - Expressions	Available expressions: Select Always Any Antivirus Any Personal Firewall Any WMI Anti Spyware	ted expressions:
Prompt user befo	e retrieving information from endpoint	Any WMI Antivirus Any WMI Personal Firewall Corporate Machine Diable Chris Client Printer Mapp Enable SharePoint Integration w Endpoint Detection is Disabled Never	
		R Help	OK Cancel

Figure 12: Advanced policy settings

After the creation of the new portal trunk is finished, the settings made by UAG are stored in the TMG configuration storage. You can see this storage configuration in the UAG Activation monitor. As you can see in the following screenshot, the configuration of the Portal trunk in UAG results in some new Firewall Policy rules in Microsoft Forefront TMG.

I Forefront TMG						_ 8 ×
File Action View Help						
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Microsoft Forefront Threat Managemer	Microsoft"					Firewall Policy
Section Control (MG) Dashboard	Forefr	ront				
Monitoring	Inreat	Management Gateway 2010				Enterprise
Firewall Policy	Apply	Discard To save change	s and update the configu	ration, click Apply.		
E-Mail Policy						
Intrusion Prevention System	All Firewall Po					Toolbox Tasks Help
Networking	Search	P Examples				Protocols 🛞
System	Order 🔺	Name	Action	Protocols	From / Lister 🔺	<u>U</u> sers 🛞
Logs & Reports	1	DirectAccess Prerequisites	Allow	🔍 HTTPS	👍 Local Hos	Content Types 🛞
Troubleshooting	2	PublishingRule::Anchor::Begin	🚫 Deny	🖳 All Outbound		Schedules 🛞
	? 3	PublishingRule::Custom#011	Allow	🖳 PublishingRul	👍 Local Hos	Networ <u>k</u> Objects 🛞
	1	PublishingRule::Custom#010	🖉 Allow	🖳 PublishingRul	👍 Local Hos	New - Edit Delete
	7 5	PublishingRule::Custom#009	🖉 Allow	🖳 PublishingRul	👍 Local Hos	Detworks Detwork Sets
	1 6	PublishingRule::Custom#008	🖉 Allow	🖳 PublishingRul	👍 Local Hos	Computers
	7	PublishingRule::Custom#007	Allow	🖳 PublishingRul	👍 Local Hos	Computer Sets Address Ranges
	1 8	PublishingRule::Custom#006	Allow	🖳 PublishingRul	👍 Local Hos	Subnets
	9	PublishingRule::Custom#005	🖉 Allow	🖳 PublishingRul	👍 Local Hos	URL Sets URL Categories
	10	PublishingRule::Custom#004	Allow	🖳 PublishingRul	👍 Local Hos	URL Category Sets
	11	PublishingRule::Custom#003	🖉 Allow	🖳 PublishingRul	👍 Local Hos	Domain Name Sets Web Listeners
	12	PublishingRule::Custom#002	🖉 Allow	🖳 PublishingRul	👍 Local Hos	Server Farms
	13	PublishingRule::Custom#001	Allow	🖳 PublishingRul	👍 Local Hos	
	14	FTP allow	Allow	🖳 FTP	👍 Internal	
	15	Allow HTTP	🖉 Allow	🖳 НТТР	👍 Internal	
	16	PublishingRule::Monitor#003	⊘ Allow	🖳 PublishingRul	👍 Local Hos	
	17	PublishingRule::Monitor#002	🖉 Allow	🖳 PublishingRul	👍 Local Hos 🚽	
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Figure 13: Created firewall rules in TMG

DirectAccess

As the last step in our short UAG overview article lets have a look at the DirectAccess capabilities of Forefront UAG. As some of you know, the DirectAccess configuration windows in UAG looks similar to the DirectAccess Management console in Windows Server 2008 R2 so it should be easy to configure DirectAccess in UAG for Administrators which are experienced configuring DirectAccess in Windows Server 2008 R2.



Figure 14: UAG Direct Access configuration dialog box

Conclusion

In this article, I gave you an overview about the installation and configuration process of the new Microsoft Forefront UAG product. As a basic example I highlighted the steps that are required to publish the Microsoft Exchange Server 2010 Outlook Web App feature (former known as Outlook Web Access (OWA)). Microsoft Forefront UAG has many new and enhanced features to securely publish Microsoft services and products from other vendors. This article can only provide an overview about the powerful UAG. If you are interested to learn more about Forefront UAG let me know, it could be possible to write more articles about UAG in the future on www.isaserver.org.

Related links

Microsoft Forefront UAG overview <u>http://www.microsoft.com/forefront/edgesecurity/iag/en/us/UAG-Beta.aspx</u> Microsoft Forefront UAG supported configurations with TMG <u>http://technet.microsoft.com/en-us/library/ee522953.aspx#BKMK_SupportedConfig</u> Microsoft Forefront UAG – FAQ <u>http://www.microsoft.com/forefront/prodinfo/roadmap/uag-faq.mspx</u> Microsoft Forefront UAG RC download on Connect <u>https://connect.microsoft.com/</u> Forefront Unified Access Gateway Beta System Requirements <u>http://www.microsoft.com/forefront/edgesecurity/iag/en/us/UAG-system-requirements.aspx</u>