PROXY SETUP WITH IIS USING URL REWRITE, APPLICATION REQUEST ROUTING AND WEB FARM FRAMEWORK OR APACHE HTTP SERVER FOR EMC® DOCUMENTUM® EROOM

Abstract
This white paper explains how to setup Proxy server on Internet Information Services (IIS) with ‘Application Request Routing’, ‘Web Farm Framework’, ‘URL Rewrite’ or with Apache Http server. This guide also explains about how to configure eRoom for using proxy server in Windows IIS server.

February 2014
Table of Contents

Executive Summary .................................................................................................................. 4
  Purpose.................................................................................................................................. 4
Audience ..................................................................................................................................... 4
Introduction ............................................................................................................................. 4
Prerequisites .............................................................................................................................. 8
Install eRoom on IIS Server and components ....................................................................... 9
  Test the application............................................................................................................... 21
  Test the application............................................................................................................... 28
References ............................................................................................................................... 28
Conclusion ............................................................................................................................... 28
Executive Summary

This white paper explains some basic information on Proxy Server Setup; this also explains the ideal way to successfully setup/configure Proxy Server using ‘Application Request Routing’, ‘Web Farm Framework’ and ‘URL Rewrite’ with IIS or with ‘Apache Http Server’ on Windows environment. In addition, this whitepaper also explains the configurations to be done on eRoom Server to use Proxy Server.

As part of the effort to improve and enhance the performance and capabilities of its product line, EMC, from time to time releases revisions of its hardware and software. Therefore, some functions described in this guide may not be supported by all revisions of the software or hardware currently in use. For the most up-to-date information on product features, refer to your product Release Notes document.

If a product does not function properly or does not function as described in this document, please contact your EMC representative.

Note: We vouch that the content in this document is accurate at the time of publication. However, as information is added, new versions of this document may be released to the EMC online support website. Check the website to ensure that you are using the latest version of this document.

Purpose

This document explains the process of setting up environment for eRoom to use Proxy Server on IIS server with ARR, Web Farm Framework and URL Rewrite, also with Apache HTTP Server and explains about configuring eRoom server to redirect requests from Proxy Server to eRoom Server with IIS server.

Audience

The audience for this white paper comprises personnel responsible for the configuration and administration of the Proxy Server setup with ARR, URL Rewrite, Web Farm Framework OR Apache Http Server production environment with regard to eRoom. This document is intended for internal/external EMC personnel, partners, and customers.

Introduction

This guide discusses basics of Proxy Server and how to implement Proxy model based security setup on IIS server using ARR, Web Farm Framework and URL Rewrite; Or also with using Apache Http server and configuring eRoom to use it.
In computer networking, a proxy server is a computer system that offers computer network service to allow client computers to make indirect network connections to other servers.

A client connects to the proxy server, requesting a service for a resource from required web-resource. The main purpose of the proxies is to connect to the available server so as to provide with the resources, on the behalf of the client.

A proxy server could be placed anywhere in the connection between the client and the server, which could include software on the client computers itself or on any computer in between.

It can improve network access speed by using a caching system. Caching saves recently viewed sites, images or any other files on a local disk so that they don’t have to be downloaded from web server again.

Benefits of Proxy Server
1. Proxy Server can keep web servers anonymous, hiding it from potential security threats
2. Speed up access to resources by using caching, preventing downloading the same content again and again
3. Better logs on accessibility
4. Data-loss prevention
5. Access enhancement by SSL
6. Internet content filtering to securely access network content
Types of Proxy Servers

1. Tunneling Proxy: A server that passes requests or responses with no modification.

2. Forward Proxy: Proxies where the client server names the target server to connect to. A forward proxy provides proxy services to a client or a group of clients. Thus, Forward Proxies take origin connections from the intranet from clients and connect them to servers out on the internet.

The proxy can serve as a single point of access and control, making it easier to enforce security policies.

A forward proxy is typically used in tandem with a firewall to enhance an internal network’s security by controlling traffic originating from clients in the internal network which are directed at hosts on the Internet. Thus, from a security standpoint, a forward proxy is primarily aimed at enforcing security on client computers in your internal network.
Benefits of Forward Proxy
a. Content Filtering
b. Email security
c. Compliance and reporting

3. Reverse Proxy: Reverse proxy takes the requests from internet and forwards them to servers, in other words, a proxy server that retrieves resources on behalf of a client from one or more servers. A reverse proxy accepts requests from external clients on behalf of servers stationed behind it.

In the above example, it is the reverse proxy that is providing file transfer services. The client is oblivious to the file transfer servers behind the proxy, which are actually providing those services. In effect, whereas a forward proxy hides the identities of clients, a reverse proxy hides the identities of servers.
Benefits of Reverse Proxy
   a. Server Obfuscation
   b. Application Firewall
   c. SSL Offload/Acceleration (SSL Multiplexing)
   d. Load Balancing
   e. Data compression
   f. Caching static and dynamic content

Prerequisites

Below are the environment details where this setup was configured and tested. This is one of the working scenarios, not requirement of OS.

IIS server machines:
Windows Server 2008 OS 32 bit machine
Install the IIS Server version 6 or 7 with its components and eRoom server.

Database machines:
Windows Server 2008 OS 32 bit machine
Install the SQL 2008 server in windows server machine (eRoom server can be in the same machine or in different machine).

eRoom version
eRoom 744 SP1 is used to install in the IIS server.

Client machine and browser:
Windows XP/Windows 7 with 32 bit Internet explorer as browser.
**Install eRoom on IIS Server and components**

Install IIS features and Roles (.Net, Web Server etc) required for eRoom.

Get the eRoom package bundled with required type and version of eRoom server along with its components such as language packs, Index Server, Heartbeat etc. Install the eRoom executable on the machine with necessary settings.

Next, create site on the eRoom database server or join to the existing site.

Verify the site connection in eRoom MMC.

**Types of Proxy Setups explained in this document**

1. Proxy Setup with ‘Application Request Routing’, ‘Web Farm Framework’ and ‘URL Rewrite’ on IIS.
2. Proxy Setup with Apache HTTP Server.

**Proxy Setup with ‘Application Request Routing’, ‘Web Farm Framework’ and ‘URL Rewrite’ with IIS.**

In this document IIS is configured to use port 80 and FME Server’s Web Application Server port is 8080. It is assumed that all components are installed on the same machine, but this is not required.

The process of installing and configuring the IIS server for Proxy Server Setup with ‘ARR’, ‘Web Farm Framework’ and ‘URL Rewrite’ for eRoom, involves the following steps:

**Installing the IIS server**

ARR and URL Rewrite are two extensions of IIS. The order of installations of these extensions are as follows:

- URL Rewrite
- Web Farm Framework
- ARR
- External cache

Create/prepare a machine with genuine Microsoft Windows 2008 server as OS with necessary requirements in language and other features. Go to My Computer and right click to select ‘Manage’ to open Server manager.

Install the IIS server from Windows features with required configurations.
(Please stop the service to install the other components)

**Note:** To Install IIS, including .NET 3.5.1 and Tracing. Run this command to add all the required features.

```powershell
Import-Module ServerManager

```

Next: The components,

1. Download and install URL Rewrite from here,
   - 64 bit: [http://download.microsoft.com/download/6/7/D/67D80164-7DD0-48AF-86E3-DE7A182D6815/rewrite_amd64_en-US.msi](http://download.microsoft.com/download/6/7/D/67D80164-7DD0-48AF-86E3-DE7A182D6815/rewrite_amd64_en-US.msi)
2. Complete the installation of URL rewrite by executing the file which you can download it directly, or install it through the Web Platform Installer (http://www.iis.net/downloads/microsoft/url-rewrite).

Once it is installed, you will see a new "Url Rewrite" icon in the IIS management console.

3. Download and install Web Farm Framework from here,
   - 64 bit: http://download.microsoft.com/download/3/4/1/3415F3F9-5698-44FE-A072-D4AF09728390/webfarm_amd64_en-US.msi

The installation of WFF is also as URL Rewrite by direct download or using Web Platform Installer.

4. Download and install ARR from here,
   - 32 bit: http://download.microsoft.com/download/1/8/7/187EE270-A0B3-4CC8-8A71-254988DF1F49/requestRouter_x86_en-US.msi
   - 64 bit: http://download.microsoft.com/download/A/A/E/AAE77C2B-ED2D-4EE1-9AF7-D29E89EA623D/requestRouter_amd64_en-US.msi

The installation of ARR is also as URL Rewrite by direct download or using Web Platform Installer.
5. Download and install External Cache from here,

The installation of External Cache is also as URL Rewrite by direct download or using Web Platform Installer.

6. Restart the IIS server

**Configuring ARR, Web Farm Framework and URL Rewrite**

1. Open IIS manager and go to the eRoom site OR Default Web Site if eRoom is default web site in IIS, and click on Add Rule(s).
You might get a warning if ARR is not installed as below,

2. Say 'Yes' to install Application Request Routing.
   (You can use Web Platform Installer to install all of the components).
3. Once done, restart IIS and go to IIS manager

You will see ARR as above, open ARR and select Server Proxy Settings.
4. Check the box for 'Enable Proxy'.
What this will do is allow any request in the server that is rewritten to a server that is not the local machine will be routed to the right place automatically without any further configuration.

If ARR is already installed, you will get the following message,

5. Say ‘OK’.
   It will open the below window. Provide hostname for Inbound Rules section,

6. Check the box for Outbound Rules and provide the sitename you wish to use in To section as below.
7. Click OK to save the settings.
8. Now install Web Farm Framework on IIS,
9. Once installed, You can see ‘Server Farms’ in IIS tree.
10. Click on ‘Create Server Farm’.
11. Provide Server Farm Name as ‘eroom’ and click Next.
13. Change the ‘httpPort’ to 8080 and provide IP of the machine for ‘Server address’.
14. Click finish to create Server Farm for eroom.

15. Expand ‘eroom’ farm to see Servers.
16. Right-click on the server created and say ‘Connect to Server’.

17. Now, open ‘URL Rewrite’ for the Default Web Site and double click to open the rule created earlier, which will open the Edit Inbound Rule pane.

18. Expand the ‘Conditions’ section.
19. Click ‘Add’ button to add a new condition to the rule.
20. Change the Condition Input field to {HTTP_HOST} from {QUERY_STRING}.
21. Provide the pattern or the desired URL for the eRoom site and say ‘OK’.
22. Remember to click ‘Apply’ in the right pane to save the changes.
**Note:** Please be cautious when adding the site pattern details in rules as there are chances that misconfiguration leading to wrong URL.

Which will then return ‘Bad Request’ error in browser as “The request cannot be routed because it has reached the Max-Forwards limit. The server may be self-referencing itself in request routing topology”

Note the changes saved in Edit Inbound Rule. Especially the ‘Rewrite URL’.

### Test the application

Now, If you access eRoom from browser with URL as ‘http://eroomsmtpt/eroom’ where ‘eroomsmtpt’ is sitename mentioned in outbound rules, it should redirect to the actual eroom site. In our case, ‘http://ermsmtpt/eroom’.

The same setup can be used with machines under a domain and can be made accessible via http://domainname.com/eroom.
**ARR with IIS for using caching services:**

There is an added advantage using ARR with IIS by using caching services.

**Steps for Setting up Caching for ARR are as below,**

With ARR we can enable disk caching so that the requests are cached locally in the site, so that not every single request ends up paying the price to go to the backend servers.

1. Launch IIS Manager and click the server node in the tree view.
2. Double click the “Application Request Routing Cache” icon
3. Select the “Add Drive...” task in the Actions panel.
4. Specify a directory where you want to keep your cache. Note that this can be any subfolder in your system.
5. Make sure that “Enable Disk Cache” checkbox is marked in the Server Proxy Settings mentioned above.

**Proxy Setup with ‘Apache Http Server’ with eRoom.**

**Prerequisite:**

All the machines, eRoom server, Apache http server and client should be in the same DNS or same domain

Install eRoom on IIS server as defined above on IIS server.

To start with,

1. **Download and install Apache HTTP server on the same or different machine which is under same domain from here,**
   
   [http://httpd.apache.org/download.cgi](http://httpd.apache.org/download.cgi)

   We used Apache Http Server version “httpd-2.2.22-win32-x86-openssl-0.9.8t.msi” in this setup.

2. Double-click on the .msi file to install Apache Http Server.
3. Click Next.
4. Select the radio button to accept the License and Terms and click Next.
5. Click Next on the Apache information window.
6. Enter details for,
   Network Domain: hostname of the current machine or the domain name.
Server Name: hostname.domainname.com
Administrator’s Email Address: Any mail ID as per requirement.

7. Click Next.

8. Select ‘Typical’ and click Next.

9. Choose installation directory or leave it to default and click Next.
10. On the Summary page, click 'Install' to proceed with installation.

11. Click 'Finish' to complete the installation.
The Apache Http server will create an icon at the taskbar and start the server.

**Editing httpd.conf for proxy configurations**

Now, to configure proxy server for eRoom,

1. Open httpd.conf file from
   “C:\Program Files\Apache Software Foundation\Apache2.2\conf”
   Or from the ‘conf’ folder from installation directory.
2. Change the Listener port to the desired port number. In our case it is 81.
3. Enable below LoadModule settings, or if not available, please add.
   ```
   LoadModule include_module modules/mod_include.so
   LoadModule log_config_module modules/mod_log_config.so
   LoadModule mime_module modules/mod_mime.so
   LoadModule proxy_module modules/mod_proxy.so
   LoadModule proxy_connect_module modules/mod_proxy_connect.so
   LoadModule proxy_http_module modules/mod_proxy_http.so
   ```
4. Add the Proxy Server and eRoom server details at the end of httpd.conf as below,
   ```
   <VirtualHost *
   ServerName eroom112  
   ProxyRequests Off
   ProxyVia Off
   ProxyPreserveHost On
   
   <Proxy *
   Order deny,allow
   Allow from all
   </Proxy>
   
   #ProxyPass /r/ http://127.0.0.1:8081/r/
   </VirtualHost>
   ```
   
   ProxyPass / http://eroom112/  
   ProxyPassReverse / http://eroom112/  
5. Restart both IIS and Apache HTTP server.

**Enabling Proxy on eRoom Server (Optional)**

1. Go to your eRoom MMC eRoom server and rightclick to choose ‘Edit Server’.
2. Check the box for ‘This eRoom server is being used through a reverse proxy server’.

![Edit eRoom Server](image)

3. Verify the ‘http’ server name and click OK to save the settings.

The same setup can be modified to use SSL along with proxy with required modifications.
Test the application

Now,

1. Access eRoom from browser with following URL,
   
   http://domainname:port/eroom
   
   Ex in our case,
   
   http://eroomsmtp.com:81/eroom
   
   Which will redirect to the actual eRoom site.

References

http://www.apachetutor.org/admin/reverseproxies
http://www.slashroot.in/how-configure-basic-apache-reverse-proxy

Conclusion

This white paper explains process of setting up environment for Reverse Proxy on IIS server using Application request Routing, URL Rewrite and Web Farm Framework; and also using Apache Http Server. It also configuring eRoom server to redirect requests from user defined site URL to eRoom server.