Implementing RPC over HTTPS in a single Exchange Server 2003 environment

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

Abstract

In this article I will show you how to deploy the RPC over HTTPS feature from Exchange Server 2003 and Outlook 2003 to connect to your Exchange Server with your favourite Outlook Client over HTTPS. This article specially deals with a single Exchange / Domain Controller environment for small organizations.

Let's begin

As I wrote above we will use a single Exchange / Domain Controller setup for this article. The configuration is as follow:

1 Exchange Server 2003 Standard with SP1 and Windows Server 2003 Standard SP1 as an Active Directory Domain Controller
1 Windows XP Professional Computer with SP2 and Microsoft Office Outlook 2003 with SP2

Step by Step

The following steps are necessary to implement RPC over HTTPS in a single Exchange Server environment:

- Configure an Exchange Server 2003 back-end server as an RPC proxy server
- Configure the RPC virtual directory for Basic authentication and SSL
- Configure the RPC proxy server to use specified ports for RPC over HTTP
- Set the NT Directory Services (NTDS) port on all global catalog servers that act as Exchange Server 2003 back-end servers
- Create a Microsoft Office Outlook 2003 Profile for your users to use with RPC over HTTPS
- Test the Connection

Configure an Exchange Server 2003 back-end server as an RPC proxy server

You must install the RPC over HTTP Proxy component on the Windows Server 2003. The RPC over HTTP Proxy component is responsible for the encapsulation of RPC pakets over HTTP(S) and is a component of Windows Server 2003 so you can install this feature like any other Windows feature with the help of the Add/Remove components wizard.

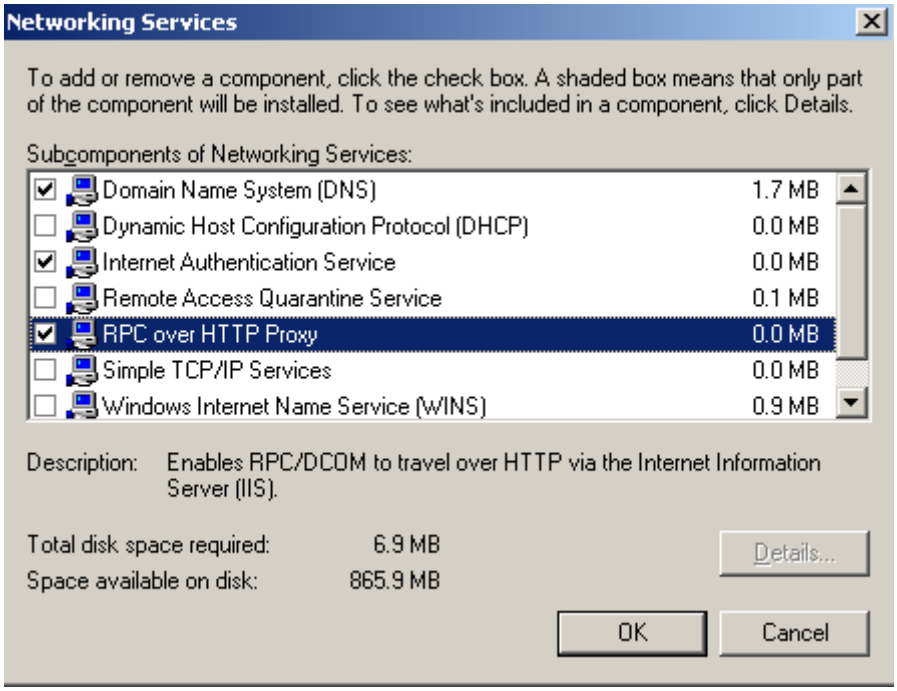

Figure 1: Installing the RPC over HTTP Proxy

Configure the RPC virtual directory for Basic authentication and SSL

The next step is to configure the newly created RPC virtual directory in IIS to use Basic Authentication and SSL.
Basic Authentication is required to work with RPC over HTTPS and if you use Basic Authentication you must use SSL because Basic Authentication sends the user credentials in cleartext.
Start the Internet Information Service Manager, navigate to the *Default Website* and rightclick the *RPC* Virtual Directory. Navigate to the *Directory Security* tab and disable the Checkbox for *Enable Anonymous Access* and enable the *Basic Autehntication* checkbox. You could leave the *Integrated Windows Authentication* checkbox unchanged.

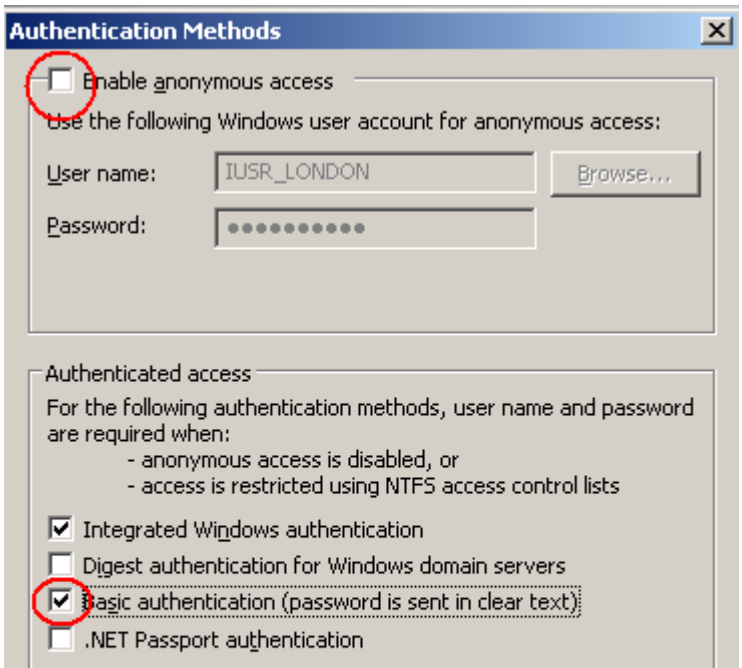

Figure 2: Configuration of the RPC Virtual Directory

If you enable the *Basic Authentication* checkbox you will get the following warning:

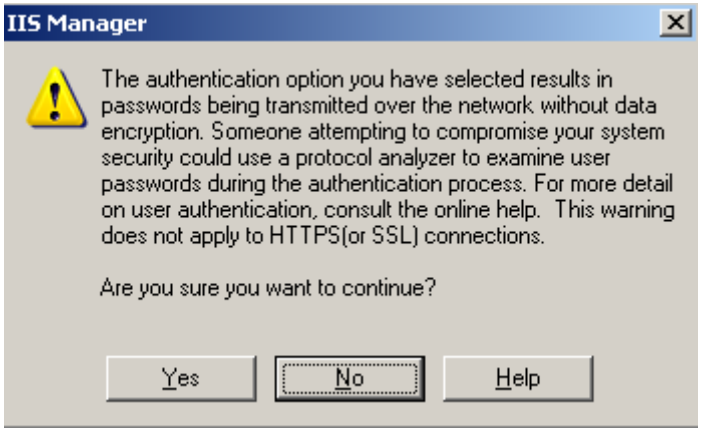

Figure 3: Basic Authentication warning

If you use SSL for the Virtual Directory you can safely ignore the Warning of the IIS Manager.

Next you must enable SSL for the RPC Virtual Directory. For this article I assume that you already have an SSL certificate implemented. Enable the checkbox *Require 128-bit encryption* for additional security.

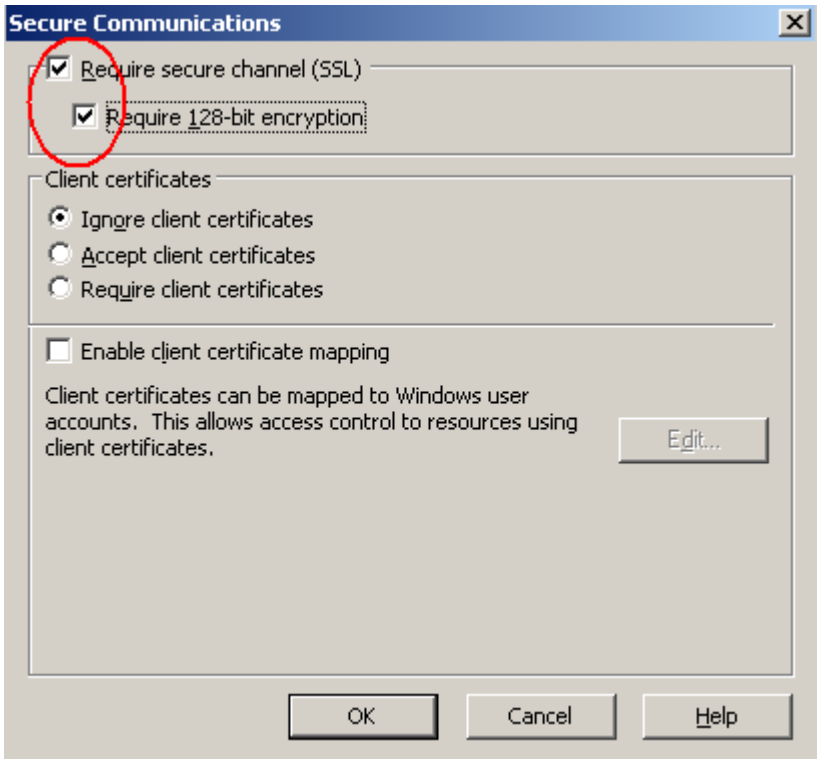

Figure 4: Enable SSL for the RPC Virtual Directory

Configure the RPC proxy server to use specified ports for RPC over HTTP

Now we need to configure the RPC Proxy Server on Exchange Server 2003 to use a specific Port Range. The Registry Key already exists but you must modify the Data. The path to the Registry is:

HKEY_LOCAL_MACHINE\SOFTWARE\MICROSOFT\RPC\RPCPROXY.

Change the data as you can see in the following picture. You must use the Port Range 6001-6002 for the NetBIOS and DNS FQDN and the Port 6004 also for the NetBIOS and DNS FQDN.

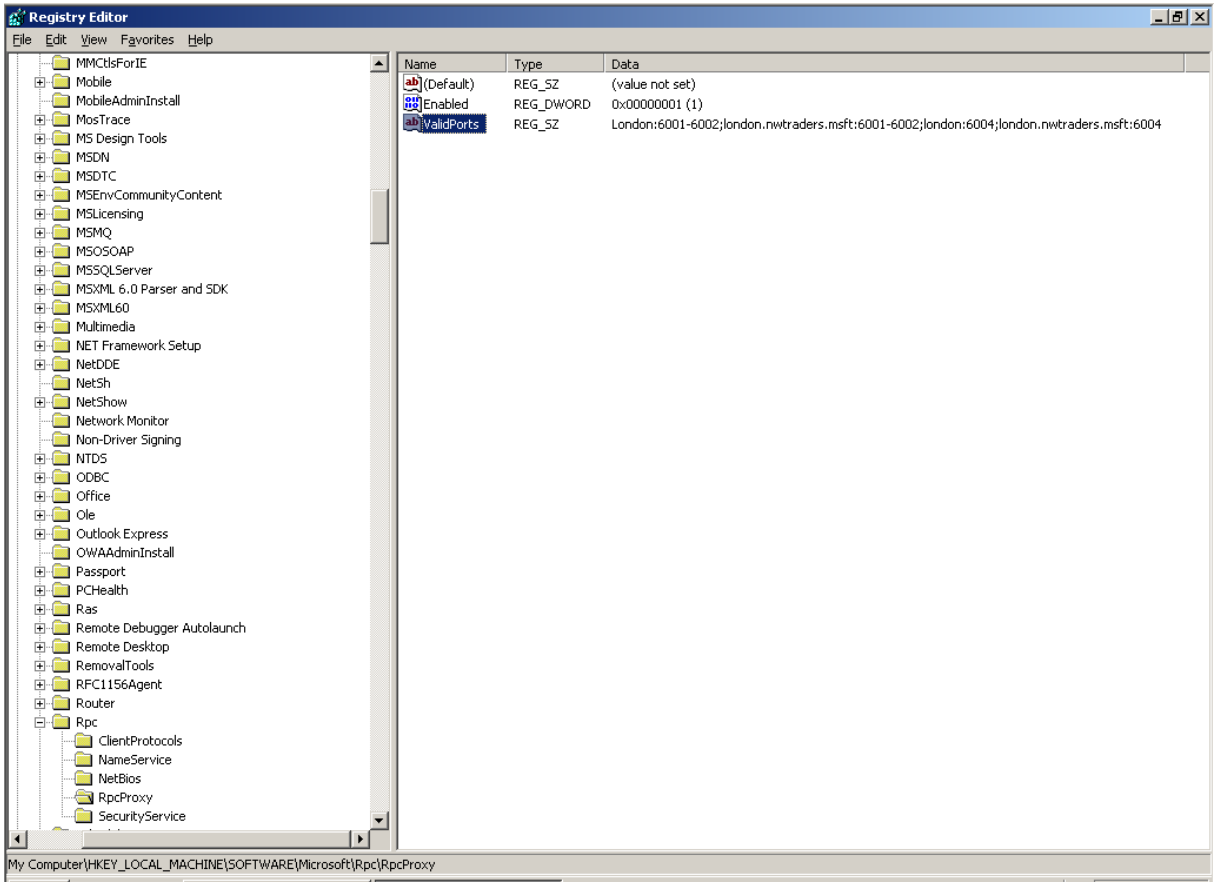

Figure 5: Configuring the RPC Proxy Directory

Set the NT Directory Services (NTDS) port on all Global Catalog Servers that act as Exchange Server 2003 back-end Servers

Again we must modify the Registry to specify a static port for the NSPI (Name Service Provider Interface) Interface settings.

Start Regedit and navigate to:

HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES\NTDS\PARAMETERS.

Create a *REG_MULTI_SZ* Record named *NSPI interface protocol sequence* with the data NCACN_HTTP:6004 as you can see in the following picture.

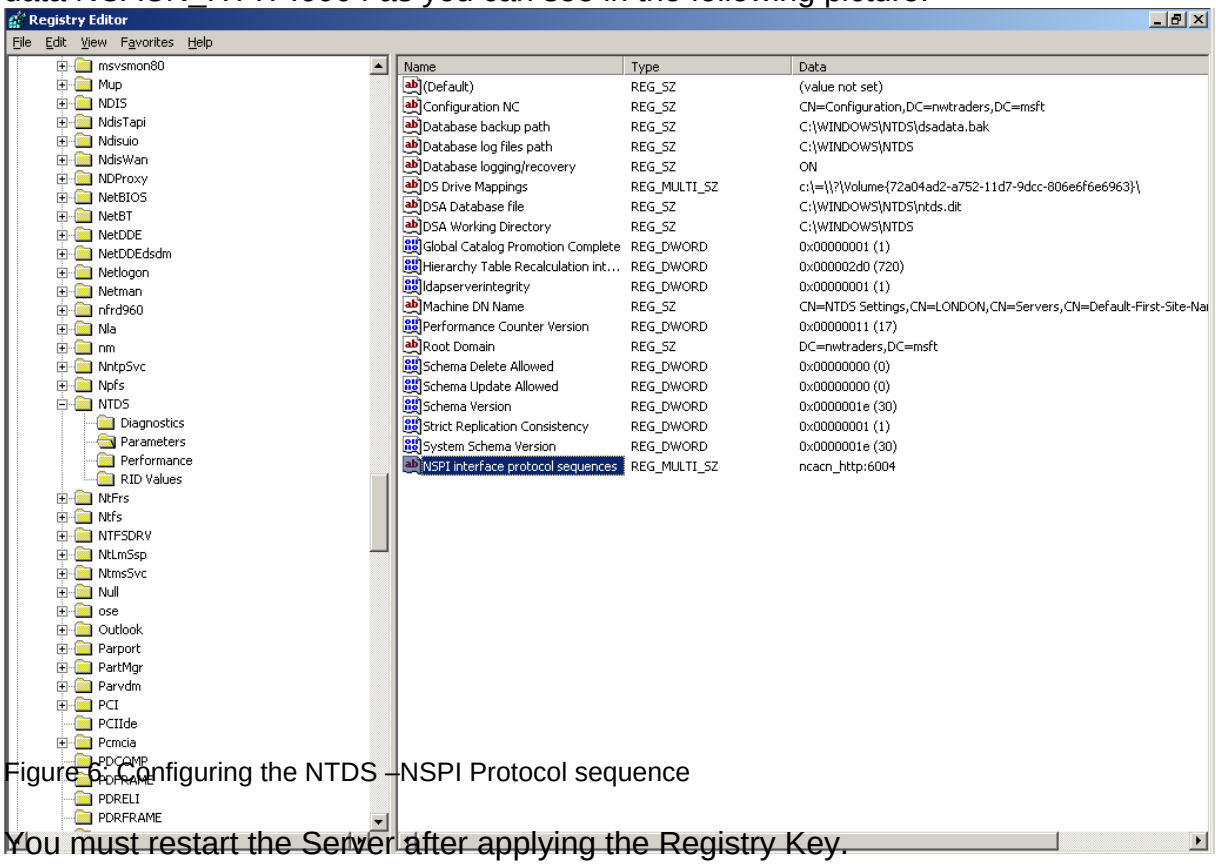

Figure 6: Configuring the NTDS –NSPI Protocol sequence

You must restart the Server after applying the Registry Key.

Create a Microsoft Office Outlook 2003 Profile for your users to use with RPC over HTTPS

As a next step we must configure the Microsoft Outlook 2003 Profile to use RPC over HTTPS.

Navigate to the *Control Panel* at your Windows XP Professional Workstation and click the *Mail* icon. Add a new Mail profile or modify an existing Profile. Navigate to the Connection Tab and enable the Checkbox *Connect to my Exchange mailbox using HTTP* and then click the *Exchange Proxy Settings* Button.

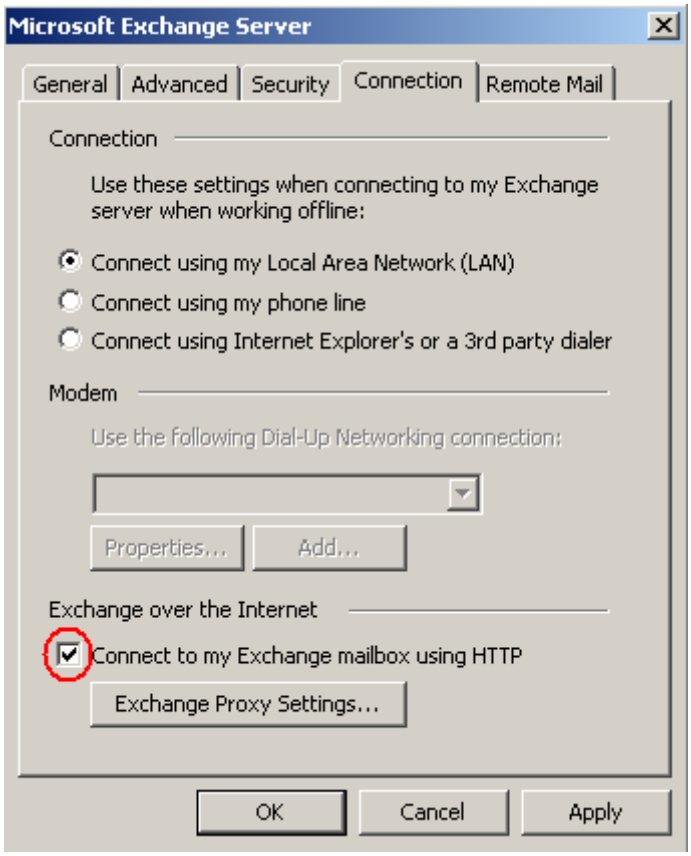

Figure 7: Enable RPC Proxy Settings

Enter the following information (with your Server Information) you can see in the following picture.

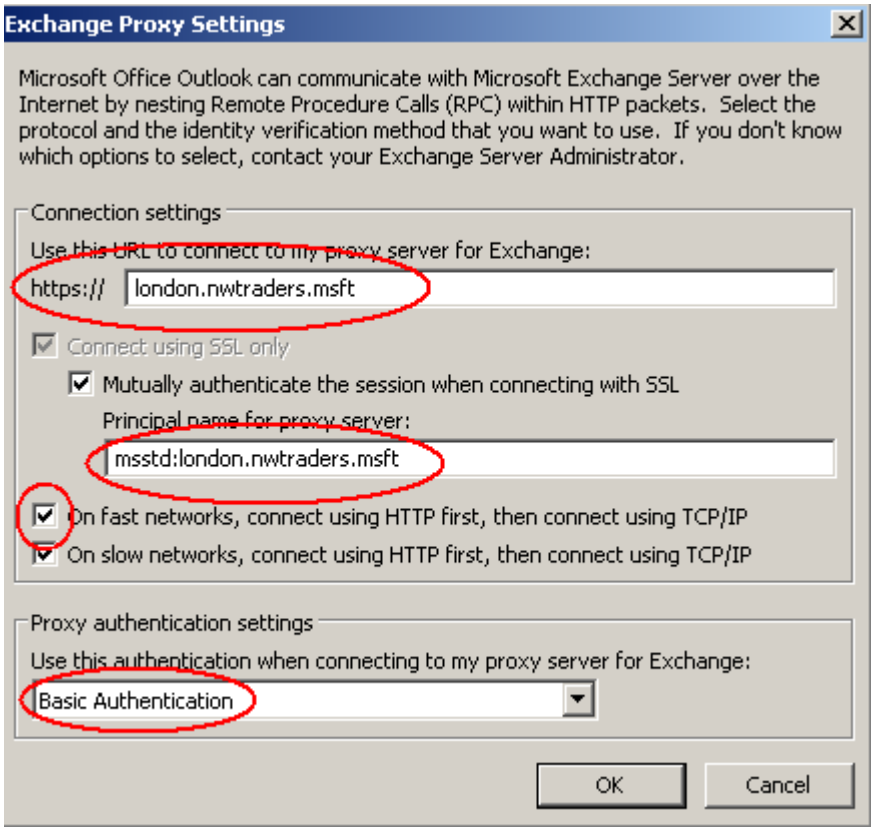

Figure 8: Exchange Proxy Settings

Test the Connection

After enabling the RPC Proxy settings your Outlook connection to the Exchange Server should be established successfully. The question is now: How to determine that it is a RPC over HTTPS connection?
The answer is simple. Right click the Outlook icon in the taskbar while you are holding the CTRL Key. The Context menu opens and now you have the option to see the Exchange Server Connection Status.

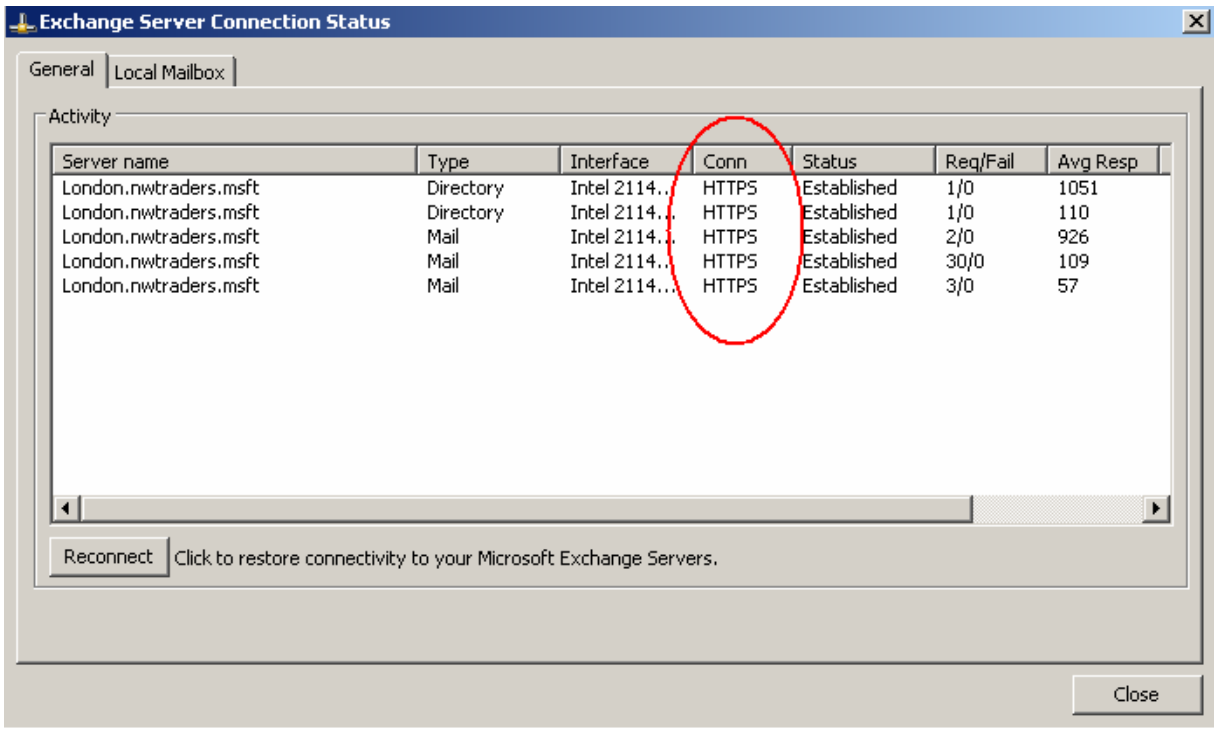

Figure 9: Test the RPC over HTTPS connection

Congratulations! You have successfully enabled your Exchange Server 2003 / Microsoft Outlook 2003 environment to use the RPC over HTTPS feature.

Conclusion

Implementing Exchange Server 2003 with RPC over HTTPS in a single Exchange / Domain Controller environment is really simple if you follow the instructions from this article or the RPC over HTTP Deployment Scenarios Guide for Exchange Server 2003. With this feature enabled, all your external users can use Outlook over the Internet as they were locally connected to your LAN. If you have an ISA Server 2004 at your Firewall you can benefit from the advanced Features of ISA Server 2004 to publish the Exchange Server over RPC/HTTPS.

Related Links

RPC over HTTP Deployment Scenarios Guide for Exchange Server 2003
http://www.microsoft.com/technet/prodtechnol/exchange/2003/library/ex2k3rpc.mspx
Configuring the Outlook 2003 RPC over HTTP Client
http://www.msexchange.org/tutorials/outlookrpchttp.html

Troubleshooting RPC over HTTPS (Part 1)
http://www.msexchange.org/tutorials/Troubleshooting-RPC-over-HTTPS-Part1.html