

Setting Up SSL on IIS6 for MEGA Advisor

Revised: July 5, 2012

Created: February 1, 2008



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CONTENTS

Contents	2
Principle	3
Requirements	4
Install the certification authority Service	5
Create a certificate request	7
Submit the certificate request	14
Issue and download the certificate	21
Install the certificate	24
Configure and test the certificate	28
Appendix A: Modify the certificate issuing strategy	35
Appendix B: Install a certificate	38

PRINCIPLE

By default, web browsing is performed through the use of the HTTP protocol, i.e. a connection between the client computer (using a web browser) and the web server (using IIS, Apache or any other sort of web server program). HTTP relies on TCP (Transmission Control Protocol) and uses port 80 on the listening server.

The main security issue with HTTP is the fact that all traffic between the client and the server is in the form of clear text, which means that anyone could potentially "listen" and grab valuable information from the net.

To secure the transmission of information between your web server running IIS 6.0 on Windows Server 2003 and your browser clients, you can encrypt the information being transmitted by using SSL (Secure Sockets Layer).

In order to successfully use SSL, you need to obtain a Server Certificate. This article only describes the case of obtaining a certificate from a local CA (Certificate Authority) or importing an already existing certificate. However, it is possible (and in many cases preferred) to use a Server Certificate issued by a trusted 3rd party CA, such as Verisign.

This document describes a concrete example of setup on a server with the following configuration:

- OS: Windows 2003 Sever SP2 Standard Edition
- IIS6
- Internet Explorer 6.0, SP2

Note:

You can deploy secured and unsecured Web sites on the same server however, the example in this document deals with a given web site (the MEGA Advisor web site) which does not remain accessible via HTTP but only via HTTPS.

REQUIREMENTS

This article assumes that you already have MEGA Advisor working on your IIS 6 Web server. The MEGA Advisor login page should be accessible via the <http://localhost:8080/advisor> URL.

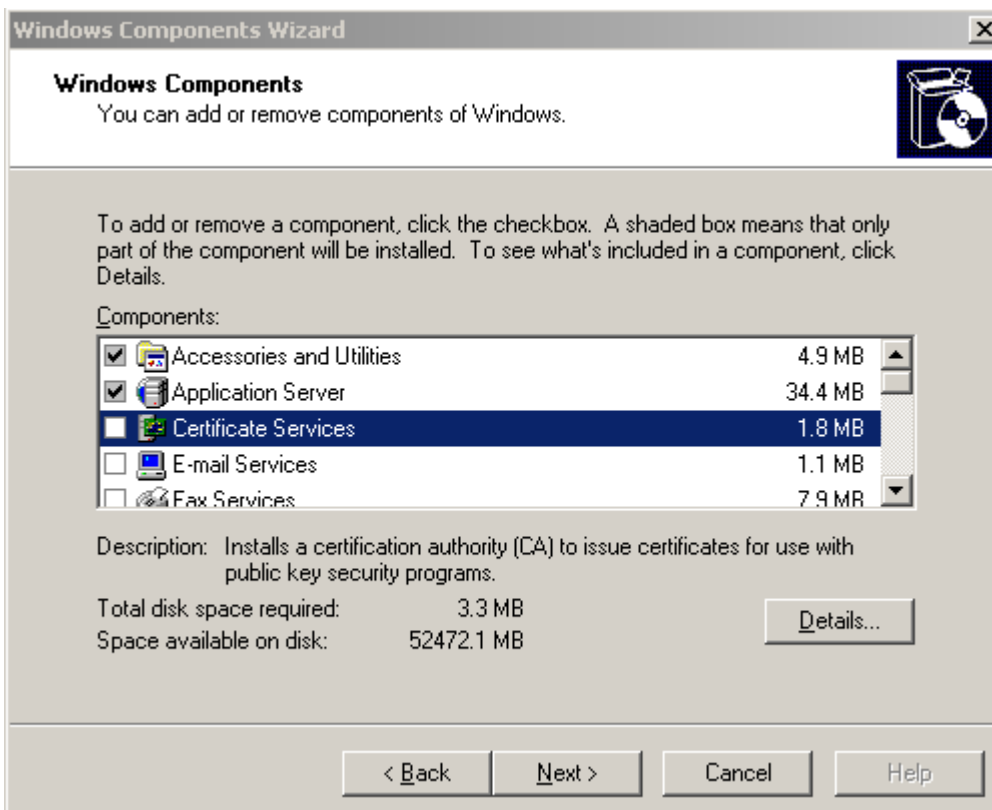
For further information on how to set up MEGA Advisor, please see the "MEGA Advisor Step by Step Setup on IIS6 (Windows 2003 Server)" document.

INSTALL THE CERTIFICATION AUTHORITY SERVICE

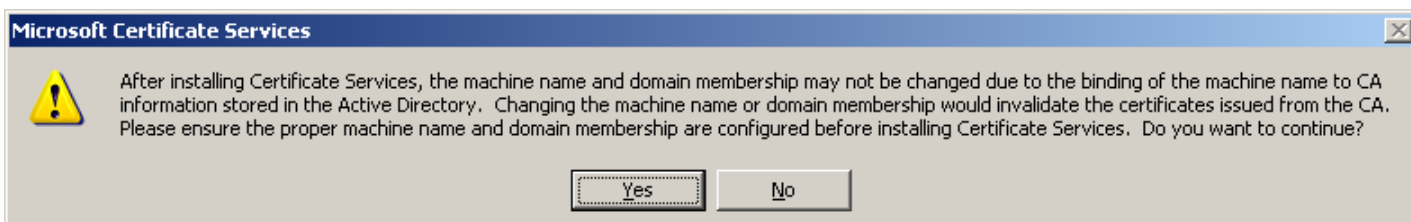
If the Certification Authority Service is already installed on your server, please skip this step.

To install the CA service:

1. Click **Start > Control Panel > Add or Remove Programs**.
2. In **Add or Remove Programs**, click **Add/Remove Windows Components**.
3. In the list of components, check **Certificate Services**.



A warning message appears concerning domain membership and computer renaming constraints.



4. Click **Yes** to continue.
5. On the CA **Type** page that appears, click **Enterprise root CA**, then click **Next**.
6. On the CA **Identifying Information** page, in the **Common name for this CA** box, type the name of the server, and then click **Next**.
7. On the **Certificate Database Settings** page, accept the defaults in the **Certificate database box** and the **Certificate database log** box, and then click **Next**.

You will get a prompt to stop Internet Information Services.

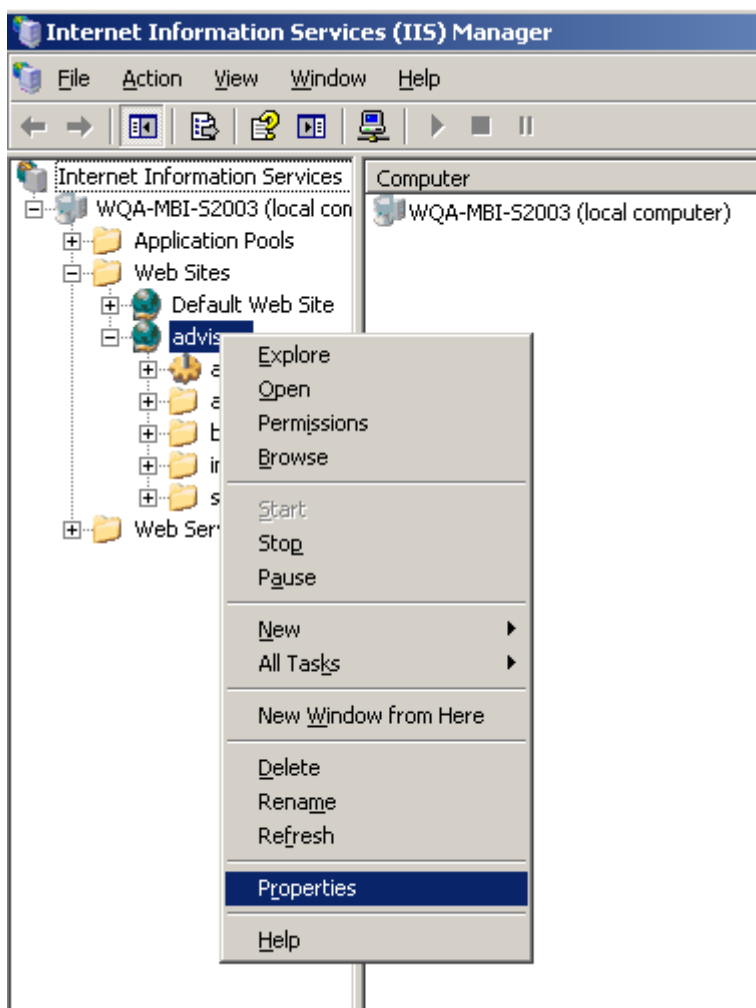
8. Click **Yes**.
9. Enable **Active Server Pages (ASPs)** by clicking **Yes**.
10. When the installation process is completed click **Finish**.

CREATE A CERTIFICATE REQUEST

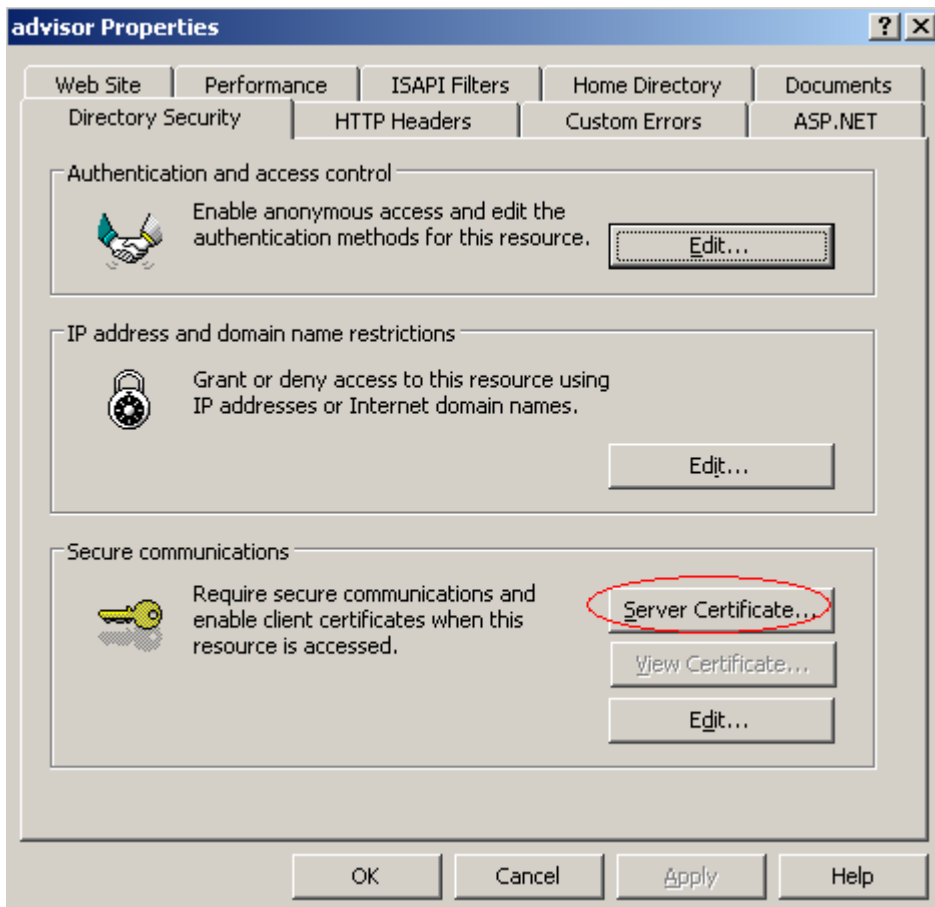
To enable SSL in IIS, you must first obtain a certificate that is used to encrypt and decrypt information transferred over the network. IIS includes its own certificate request tool that you can use to send a certificate request to a certification authority. This tool simplifies the process of obtaining a certificate.

In order to make a certificate request, follow the steps below:

1. Start the **Internet Service Manager (ISM)**, which loads the Internet Information Server snap-in for the Microsoft Management Console (MMC) via **Start > Programs > Administrative Tools > Internet Service Manager** or **Internet Information Services (IIS) Manager**.
2. Double-click the server name in order to display all the Web sites, and expand the **Web Sites** folder.
3. Right-click the Web site (advisor) on which you want to install the certificate, and then click **Properties**.

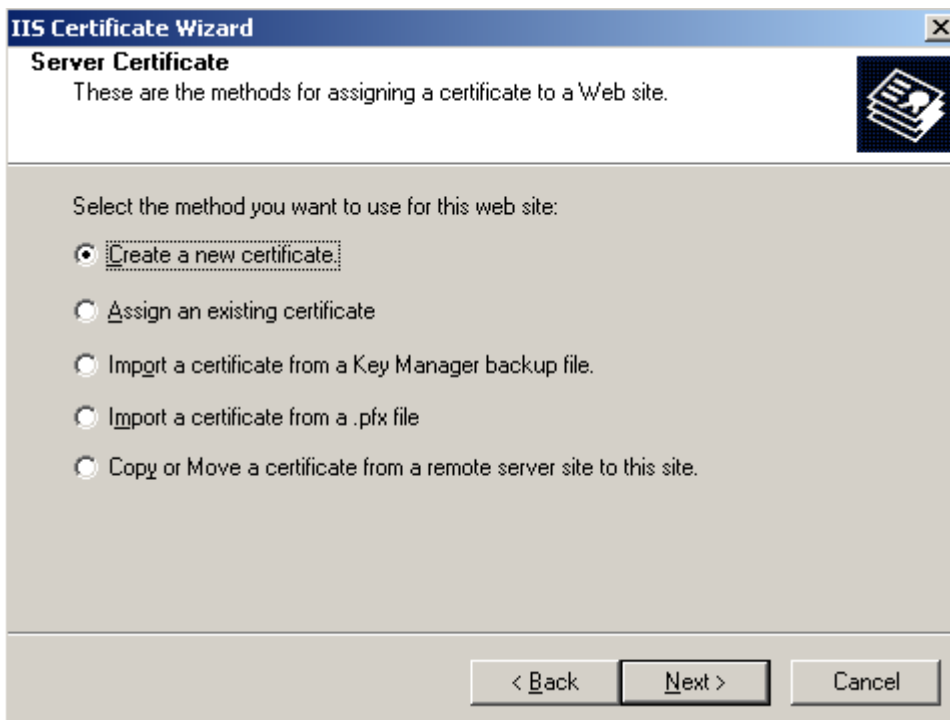


4. Click the **Directory Security** tab, and then under **Secure Communications**, click **Server Certificate** to start the Web Server Certificate Wizard.

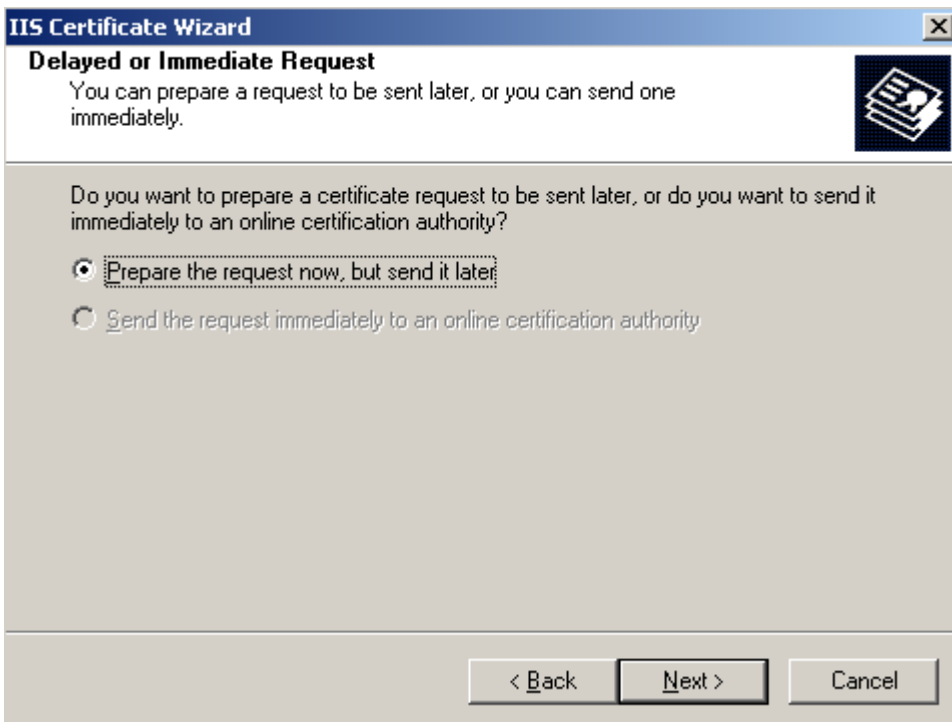




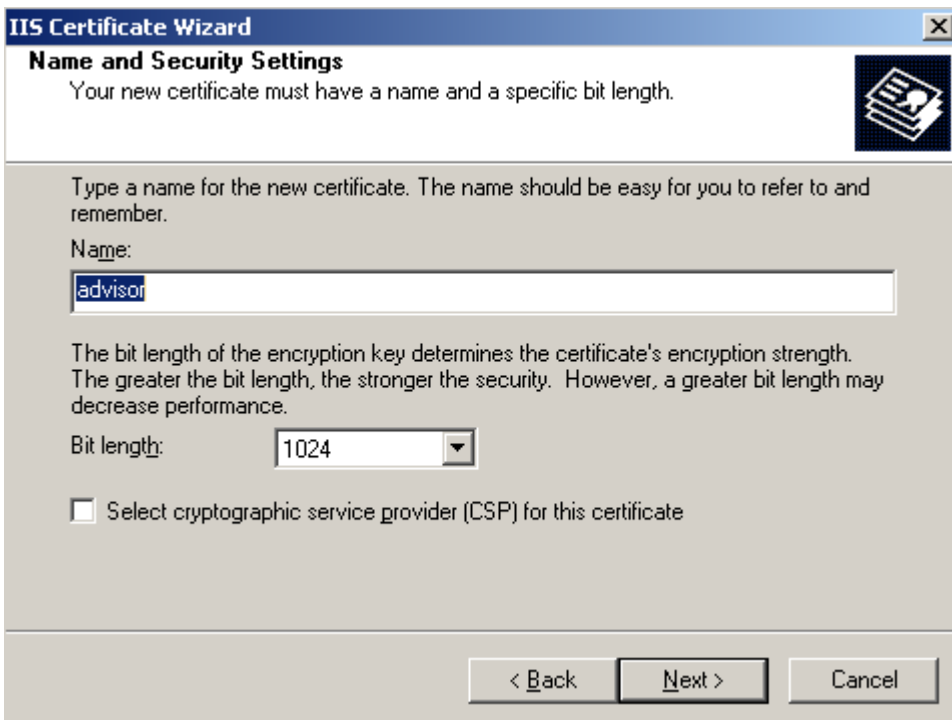
5. Click **Next**.
6. Select **Create a new certificate** and click **Next**.



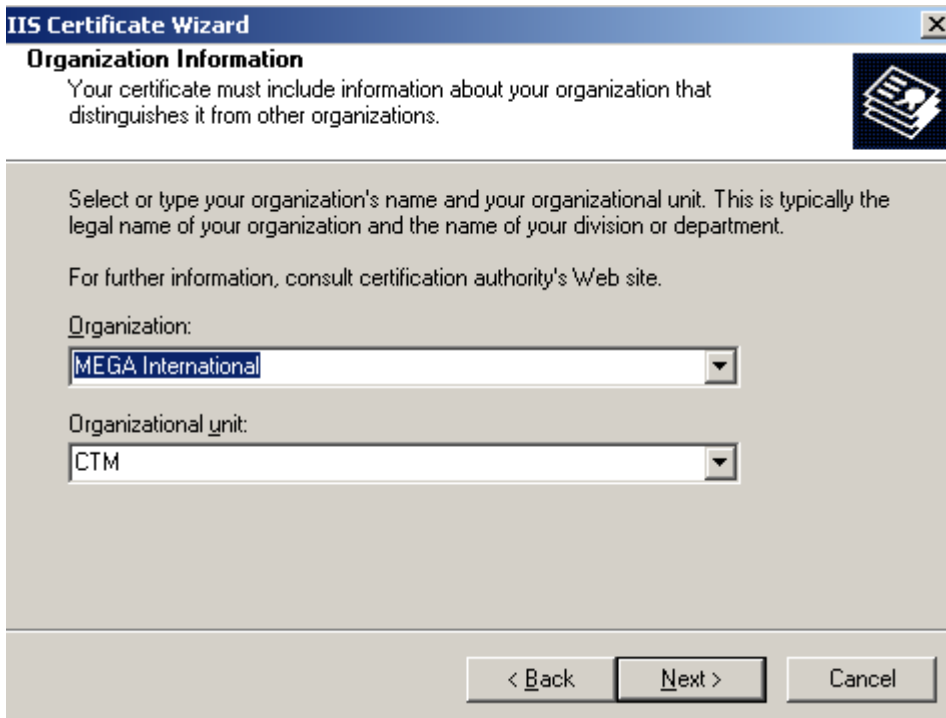
7. Select **Prepare the request now, but send it later** and click **Next**.



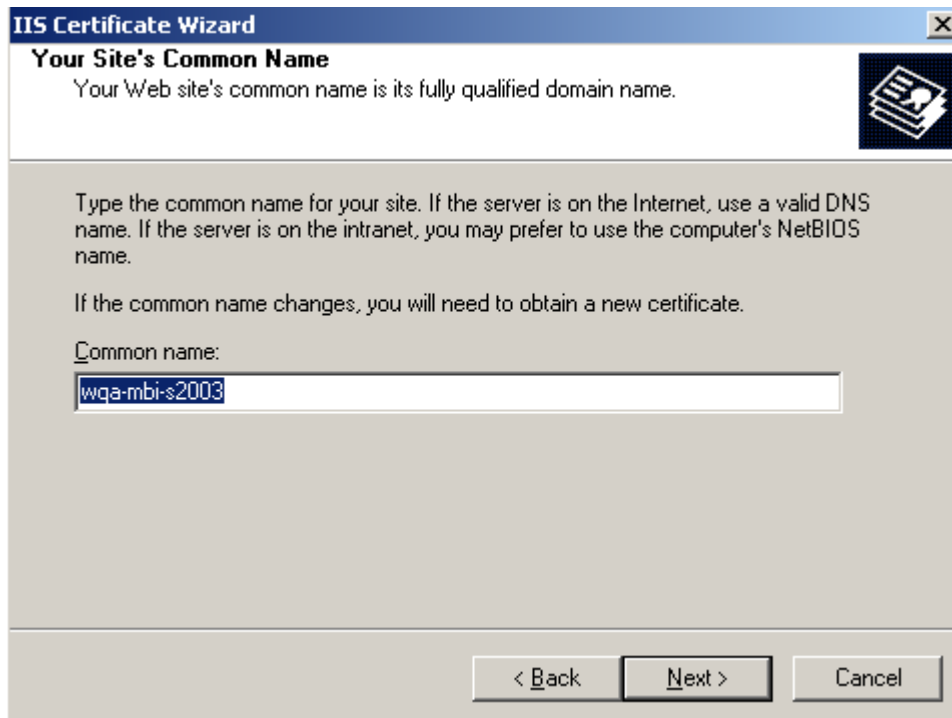
8. Type a name for the certificate (advisor). You may want to match the certificate name to the name of the Web site. Now, select a bit length (the higher the bit length, the stronger the certificate encryption) and click **Next**.



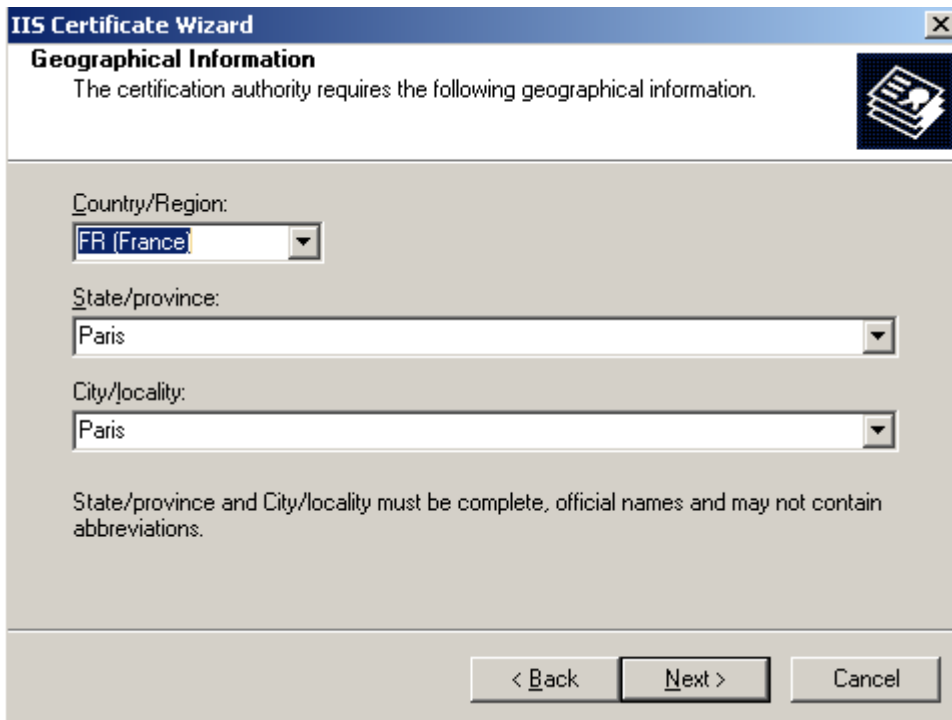
9. Type the name of your organization and the organizational unit and click **Next**.



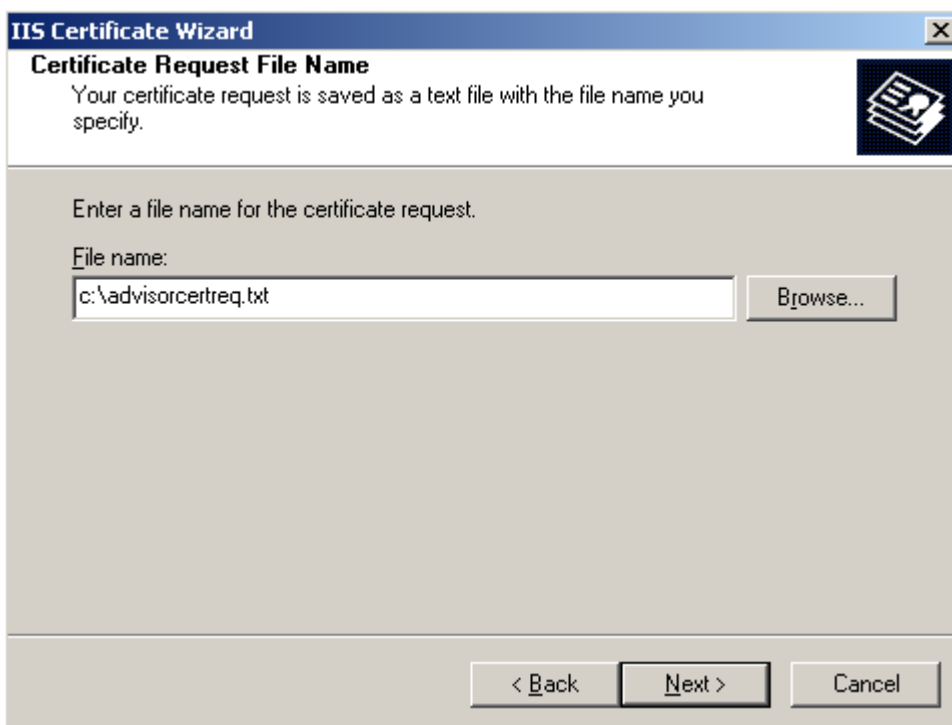
10. Type either the fully qualified domain name (FQDN) or the server name as the common name. If you are creating a certificate that will be used over the Internet, it is preferable to use a FQDN. Click **Next**.



11. Enter your location information, and then click **Next**.

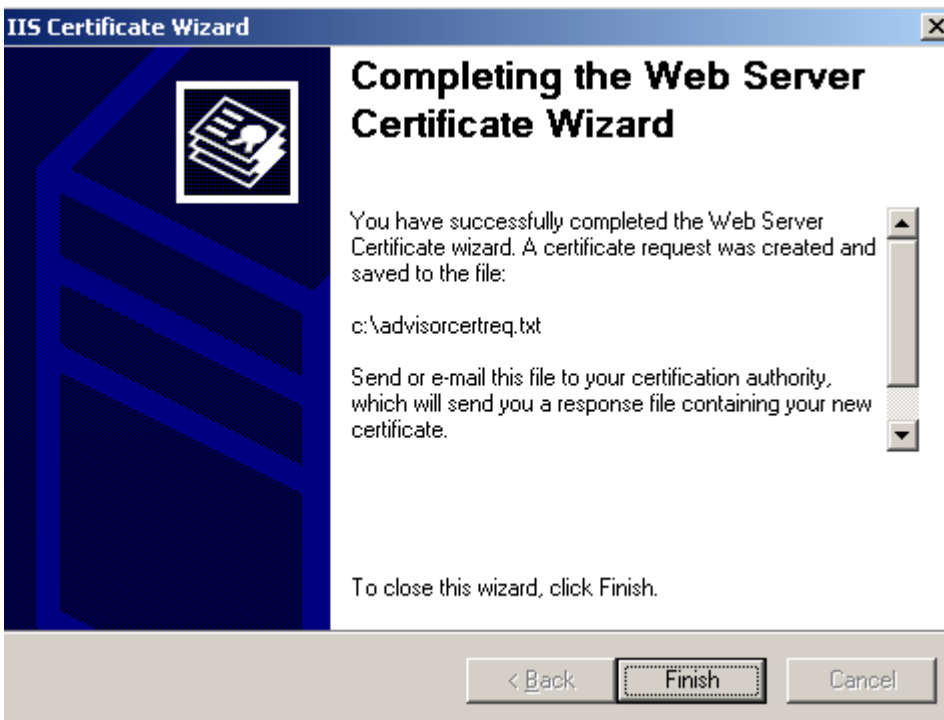
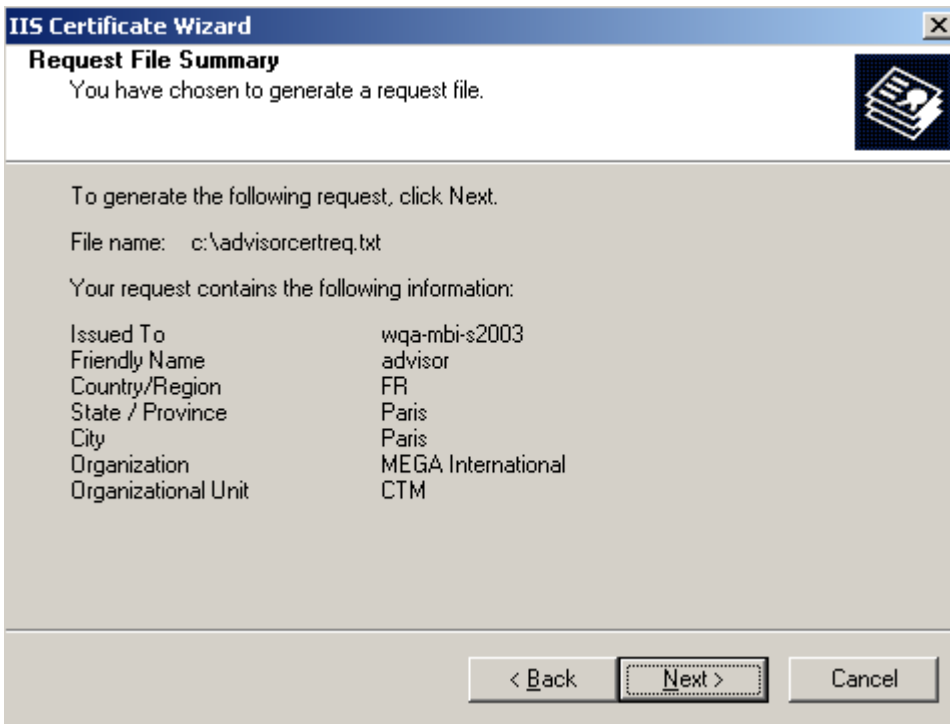


12. Type the path and name of the file to which the certificate information will be saved, and click **Next** to continue.



Note: If you type anything other than the default location and file name, be sure to note the name and location you choose, because you will have to access this file in later steps.

13. Verify the information you have typed then click **Next** to complete the process and create the certificate request.



SUBMIT THE CERTIFICATE REQUEST

The certificate request you just created needs to be submitted to a Certificate Authority (CA). This may be your own server with Certificate Server 2.0 installed on it or an online CA such as VeriSign. Contact the certificate provider of your choice and determine the best level of certificate for your needs.

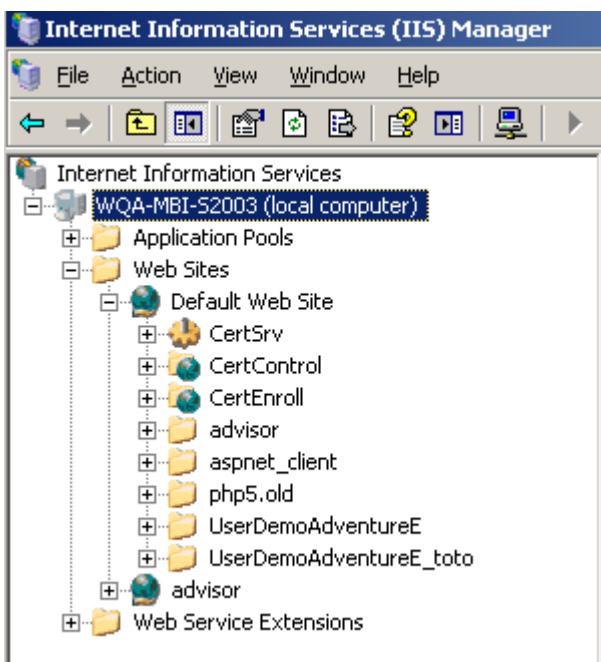
There are different methods of submitting your request. You can:

- Contact the Certificate Authority of your choice to request and receive your certificate.
- Create your own certificate with Certificate Server 2.0, but your clients must implicitly trust you as the Certificate Authority.

The steps indicated below are for submitting the certificate request if you are using Certificate Server 2.0 as the certificate provider.

Note: The IIS Certificate Wizard will only recognize the Default Web Server template. When you select an Online Enterprise CA, the Authority will not be listed unless the CA is using the Default Web Server template.

1. Open a browser and browse to <http://YourWebServerName/CertSrv/>.



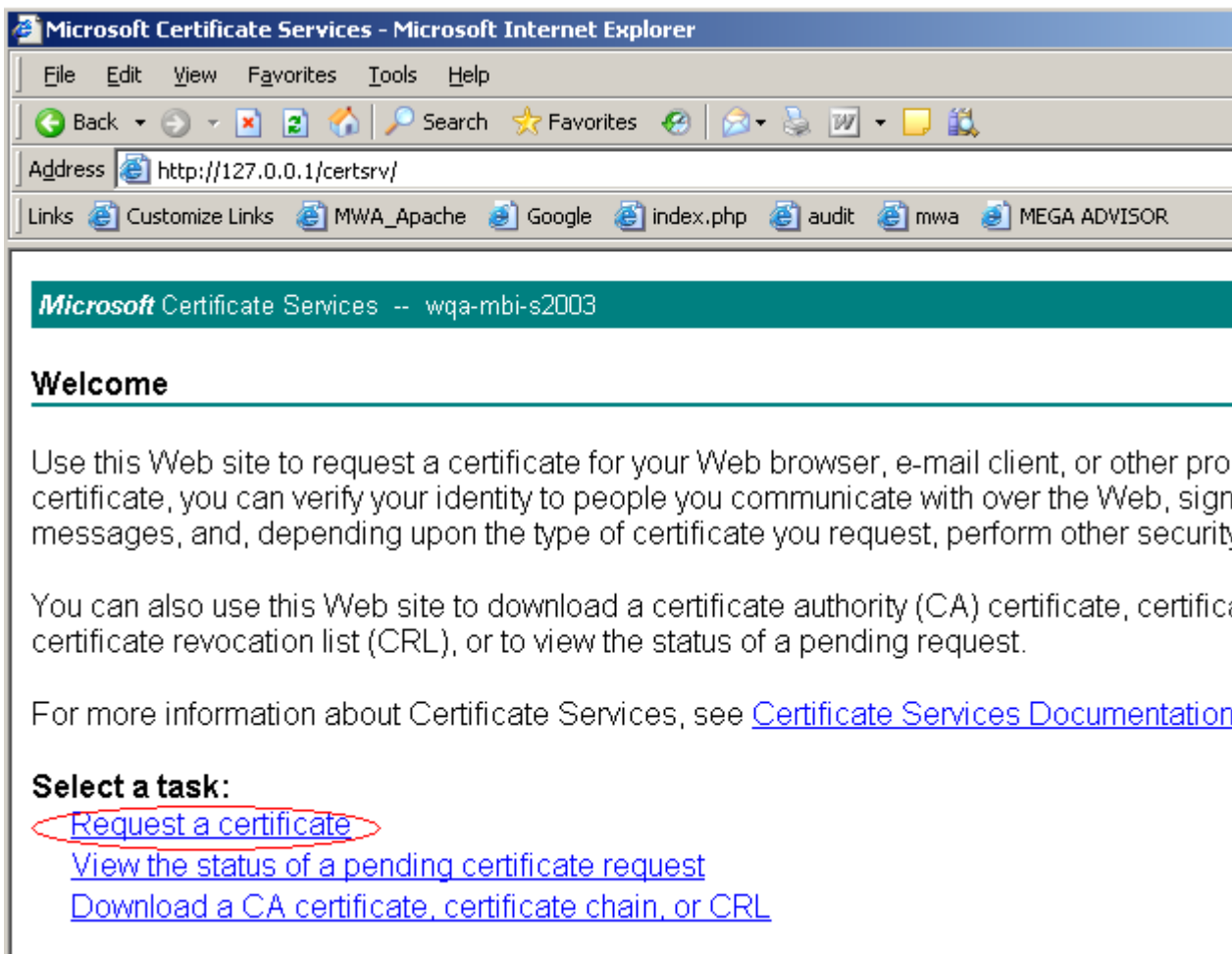
Note: If CertSrv does not appear under "Default Web Site" please execute the "certutil -vroot" command.

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

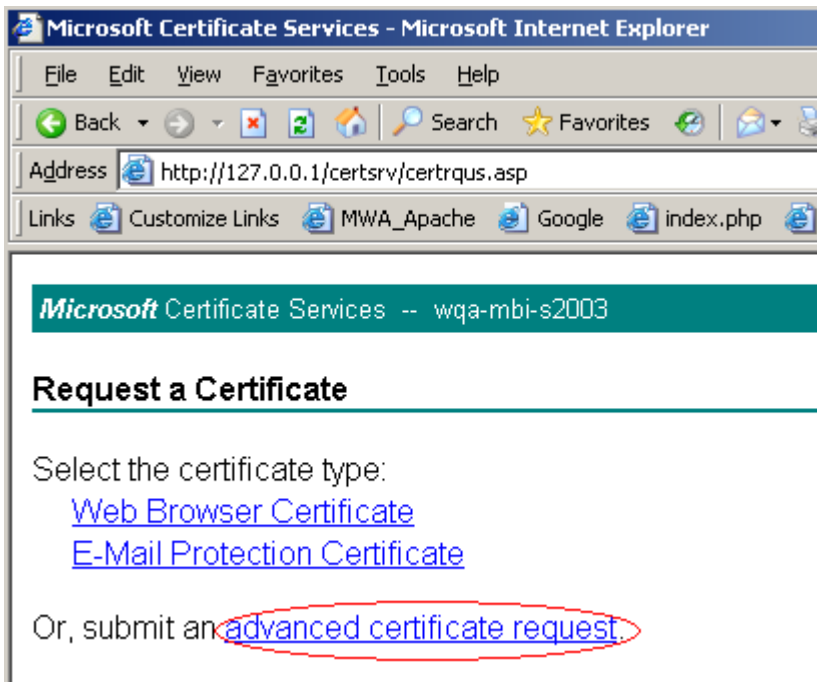
C:\Documents and Settings\mbi>certutil -vroot
Web Virtual Root Created
Enabled Active Server Pages (ASP)
File Share Already Exists
CertUtil: -vroot command completed successfully.

C:\Documents and Settings\mbi>_
```

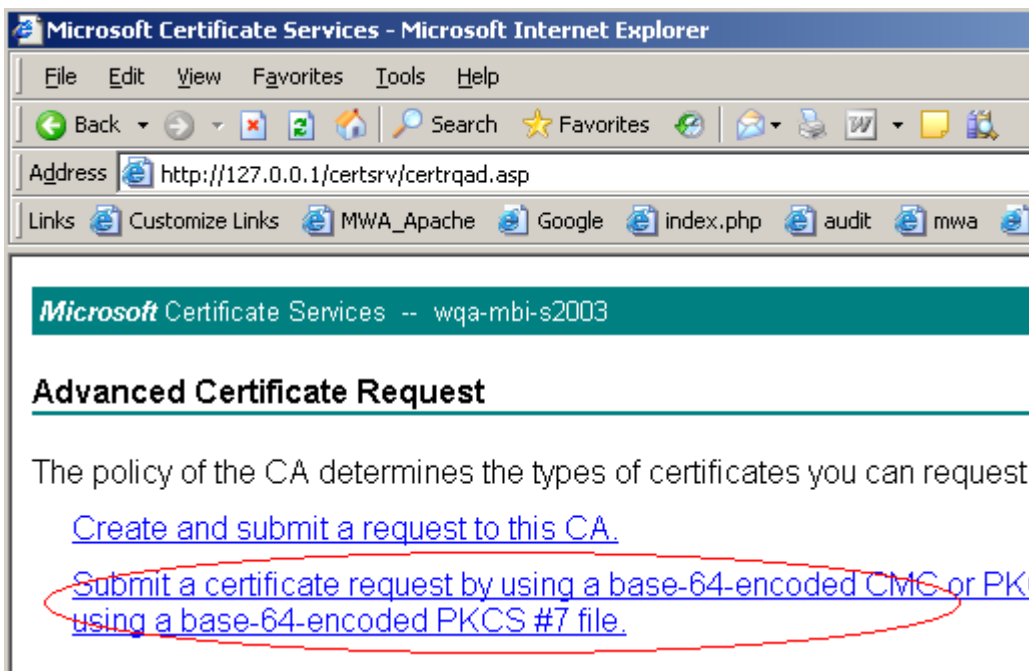
2. Click **Request a certificate**.



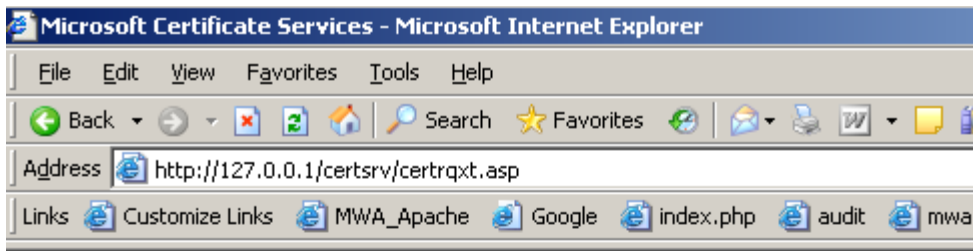
3. Click **advanced certificate request**.



4. Click **Submit a certificate request by using a base-64-encoded CMC or PKCS #10 file**, or submit a renewal request by using a base-64-encoded PKCS #7 file.



5. Click **Browse for a file to insert.**



Microsoft Certificate Services -- wqa-mbi-s2003

Submit a Certificate Request or Renewal Request

To submit a saved request to the CA, paste a base-64-encoded CMC renewal request generated by an external source (such as a Web serv

Saved Request:

Base-64-encoded certificate request (CMC or PKCS #10 or PKCS #7):

A large, empty text area with a light gray background and a thin border. It has a vertical scrollbar on the right side and horizontal scrollbars at the bottom.

[Browse for a file to insert.](#)

Additional Attributes:

Attributes:

A smaller, empty text area with a light gray background and a thin border. It has a vertical scrollbar on the right side and horizontal scrollbars at the bottom.

Submit >

Microsoft Certificate Services - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print

Address <http://127.0.0.1/certsrv/certrqxt.asp>

Links [Customize Links](#) [MWA_Apache](#) [Google](#) [index.php](#) [audit](#) [mwa](#) [MEGA ADVISOR](#)

Microsoft Certificate Services -- wqa-mbi-s2003

Submit a Certificate Request or Renewal Request

To submit a saved request to the CA, paste a base-64-encoded CMC or PKCS #10 certificate request generated by an external source (such as a Web server) in the Saved Request field.

Saved Request:

Base-64-encoded certificate request (CMC or PKCS #10 or PKCS #7):

[Browse for a file to insert.](#)

Full path name:

Additional Attributes:

Attributes:

Microsoft Certificate Services -- wqa-mbi-s2003

Submit a Certificate Request or Renewal Request

To submit a saved request to the CA, paste a base-64-encoded CM renewal request generated by an external source (such as a Web server) into the text box below.

Saved Request:

Base-64-encoded certificate request (CMC or PKCS #10 or PKCS #7):

```
-----BEGIN NEW CERTIFICATE REQUEST-----
MIIDSzCCArQCAQAwcDELMAkGA1UEBhMCRIIxIjAM
VQQHEwVQYXJpczEhMBkGA1UEChMSTUVHQSBJbnRl
EwNDVEOxYjAUBgNVBAMTDXdxYS1tYmktczIwMDMw
gYOAMIGJAoGBALE8YX8JOL6s+CMtLpbEiuHOXO6u
XKPpqT9sc1CZ+1cPLLv1G0Yt3sjoMVO/FoDG9fLe
-----
```

[Browse for a file to insert.](#)

Additional Attributes:

Attributes:

6. Click **Submit**.

If Certificate Server is set to "Always Issue the Certificate" (See Appendix A for more details), you can access and download the certificate immediately. If this is not the case, the next step consists of issuing the certificate.

Microsoft Certificate Services - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address <http://127.0.0.1/certsrv/certifnsh.asp>

Links Customize Links MWA_Apache Google index.php audit mwa

Microsoft Certificate Services -- wqa-mbi-s2003

Certificate Pending

Your certificate request has been received. However, you must wait for an requested.

Your Request Id is 4.

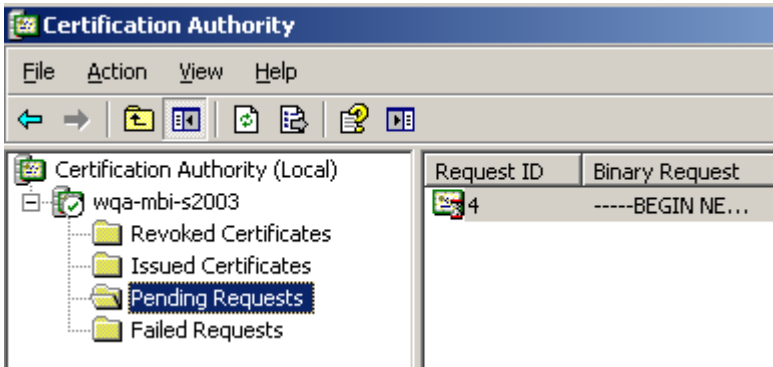
Please return to this web site in a day or two to retrieve your certificate.

Note: You must return with **this** web browser within 10 days to retrieve your certificate

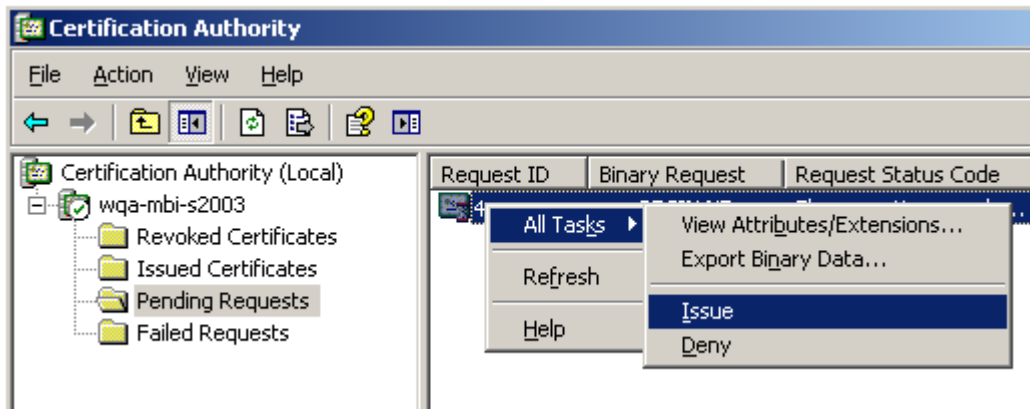
ISSUE AND DOWNLOAD THE CERTIFICATE

To issue a certificate in Certificate Server, follow the steps below:

1. Open the CA MMC snap-in. To do so, click **Start > Programs > Administrative Tools > Certificate Authority**.
2. Expand folder with the name of the server.



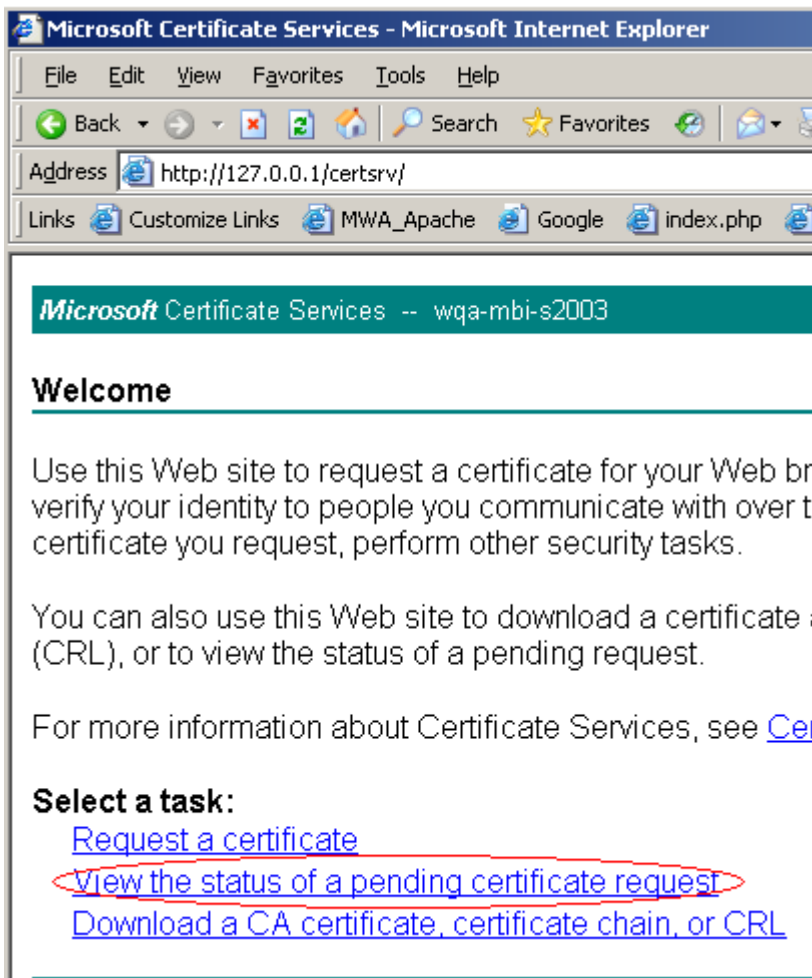
3. Right-click the pending certificate request you just submitted, select **All Tasks**, and then click **Issue**.



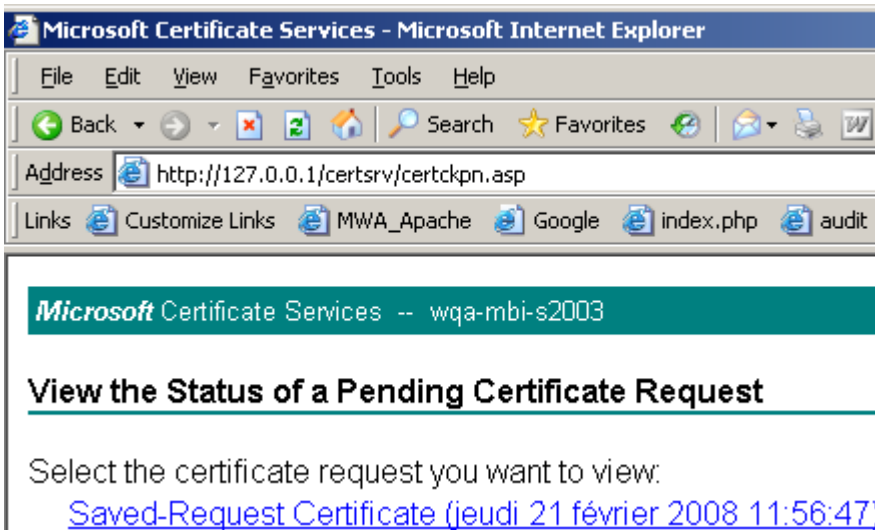
Note: after selecting Issue, the certificate is no longer displayed in this window or in the **Pending Requests** folder. It is now located in the **Issued Certificate** folder.

After having issued (and authorized) the certificate, you can return to the Certificate Server Web interface to select and download the certificate. To do so:

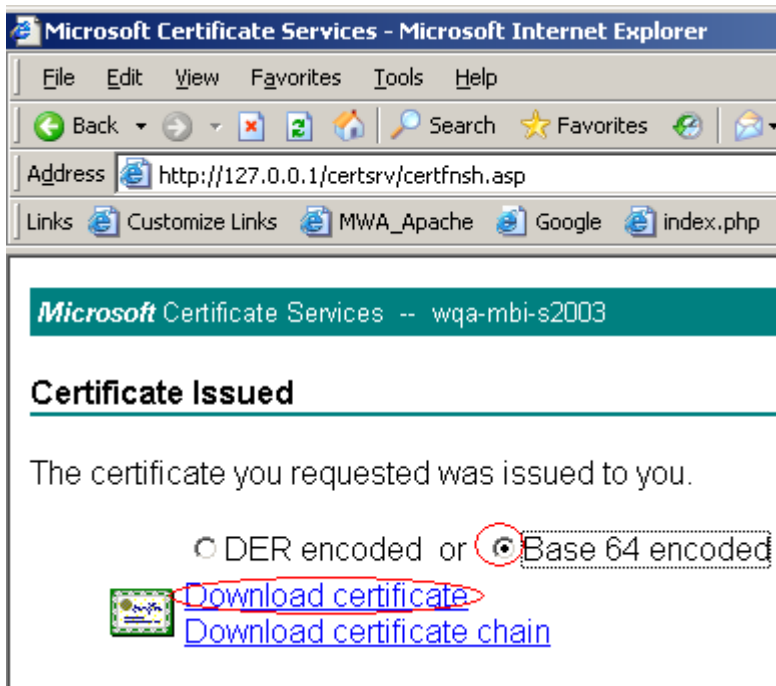
1. Browse to <http://YourWebServerName/CertSrv/>.
2. On the default page, click **View the status of a pending certificate request**.



3. Select your pending certificate, then click **Next** to go to the download page.



4. On the download page, click **Download certificate** (DO NOT click Download certificate chain).



5. When prompted, select **Save this file to disk** and save the certificate to a location you will remember.

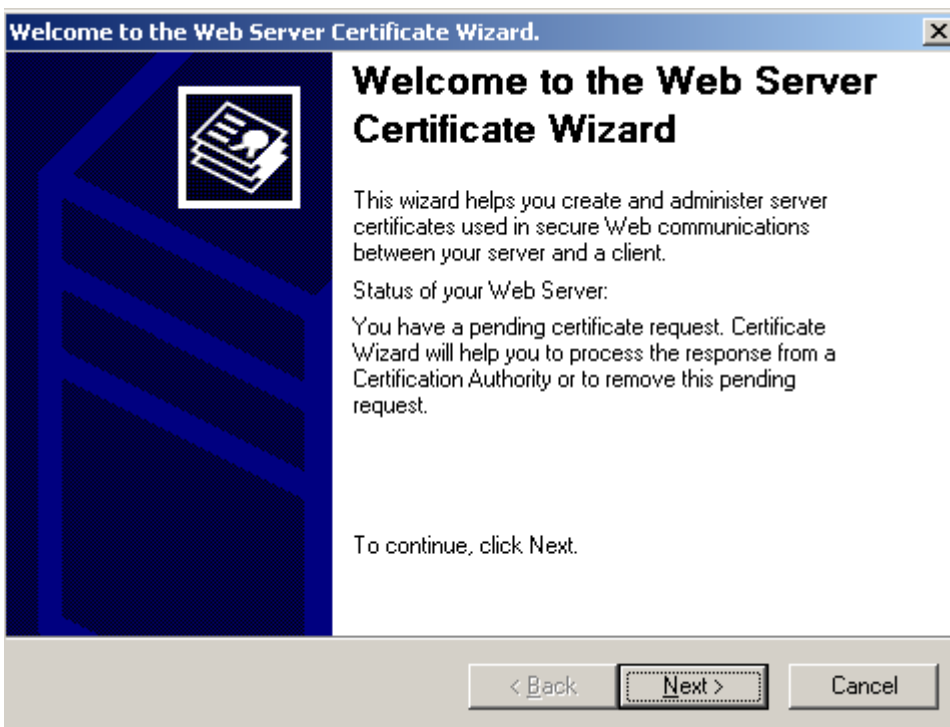
INSTALL THE CERTIFICATE

To install the certificate:

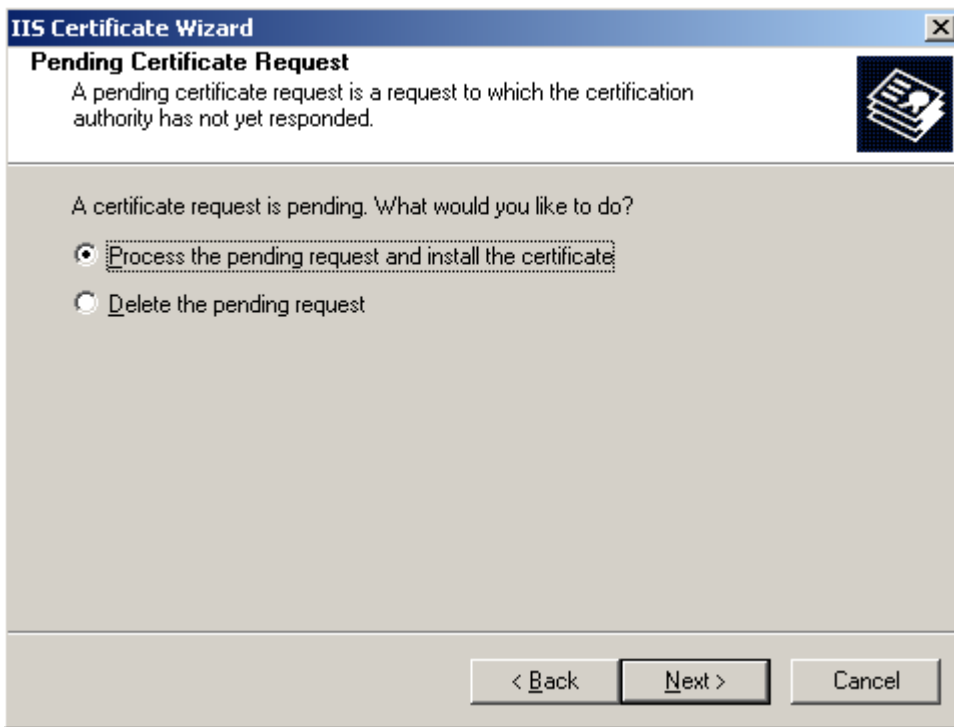
1. Open the **Internet Services Manager** and expand the server name so that you can view the Web sites.
2. Right-click the Web site for which you created the certificate request and click **Properties**.
3. Click the **Directory Security** tab and under **Secure Communications**, click **Server Certificate**.

This starts the **Certificate Installation Wizard**.

4. Click **Next** to continue.



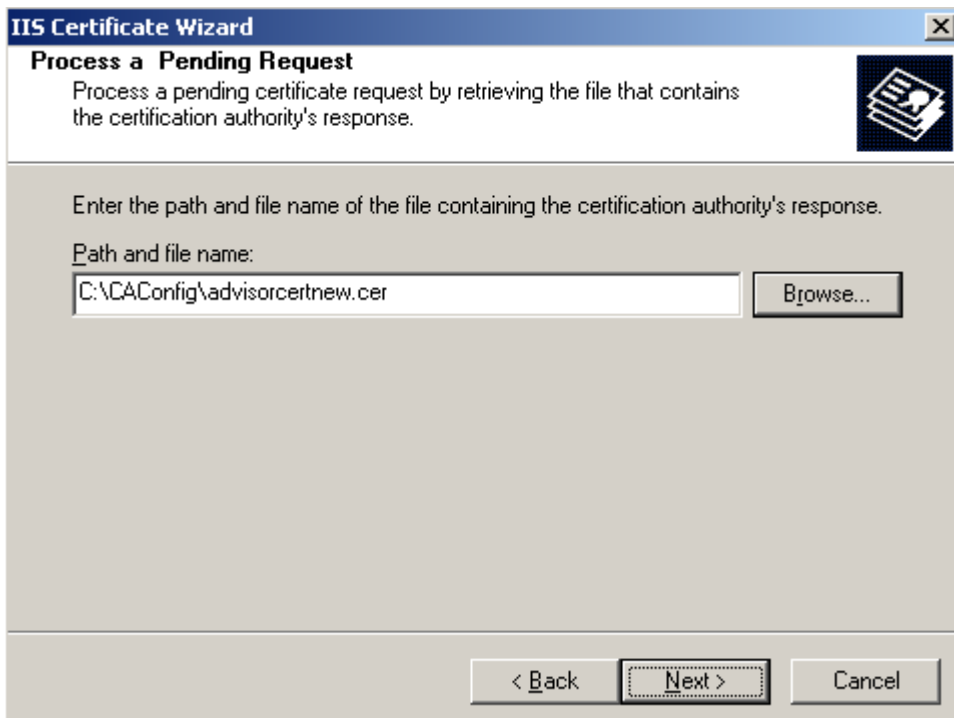
5. Select **Process the pending request and install the certificate** and click **Next**.

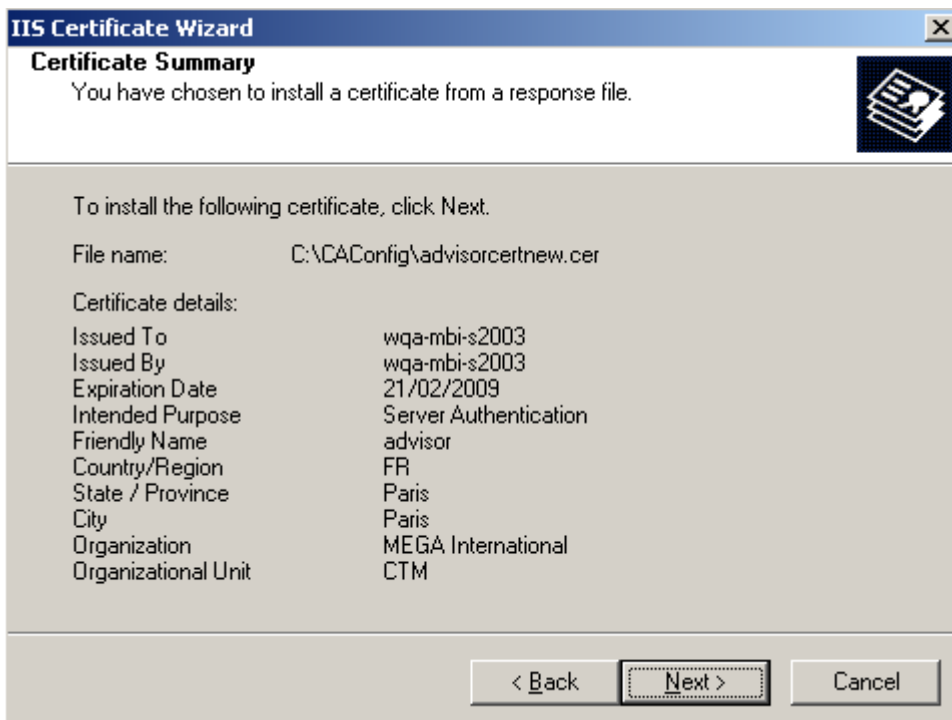
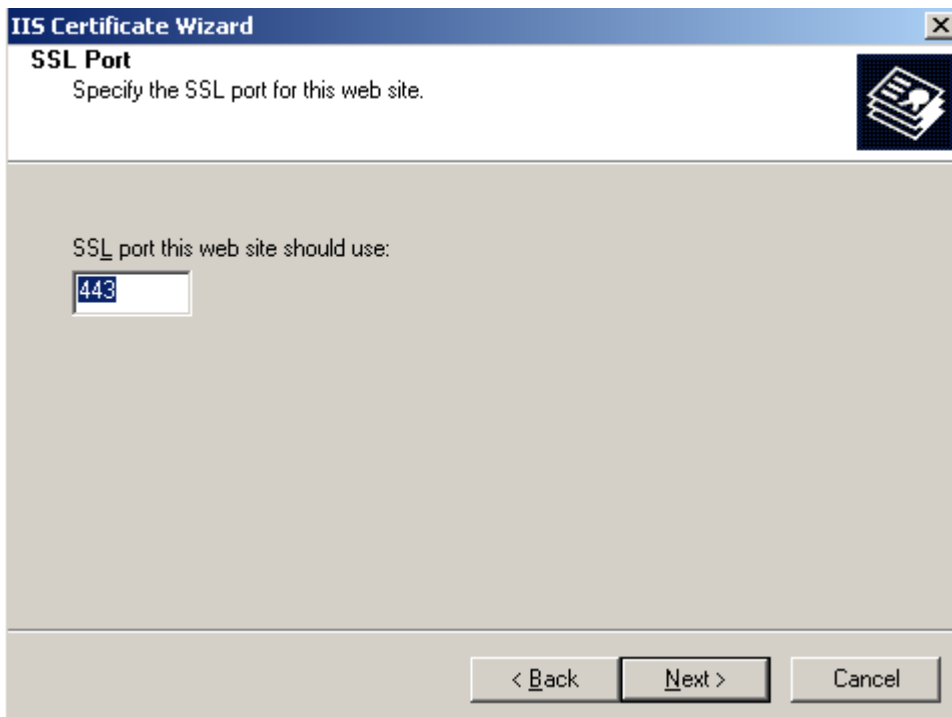


6. Type the location of the certificate you downloaded in the "Issue and download a certificate" section, then click **Next**.

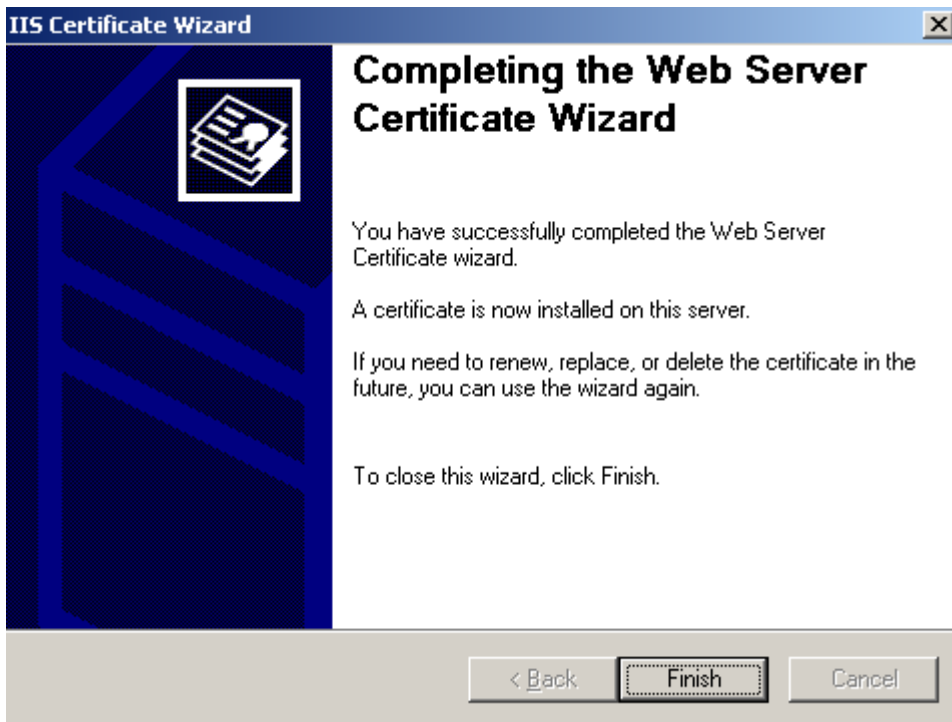
The Wizard displays the Certificate Summary.

7. Verify that the information is correct, then click **Next** to continue.





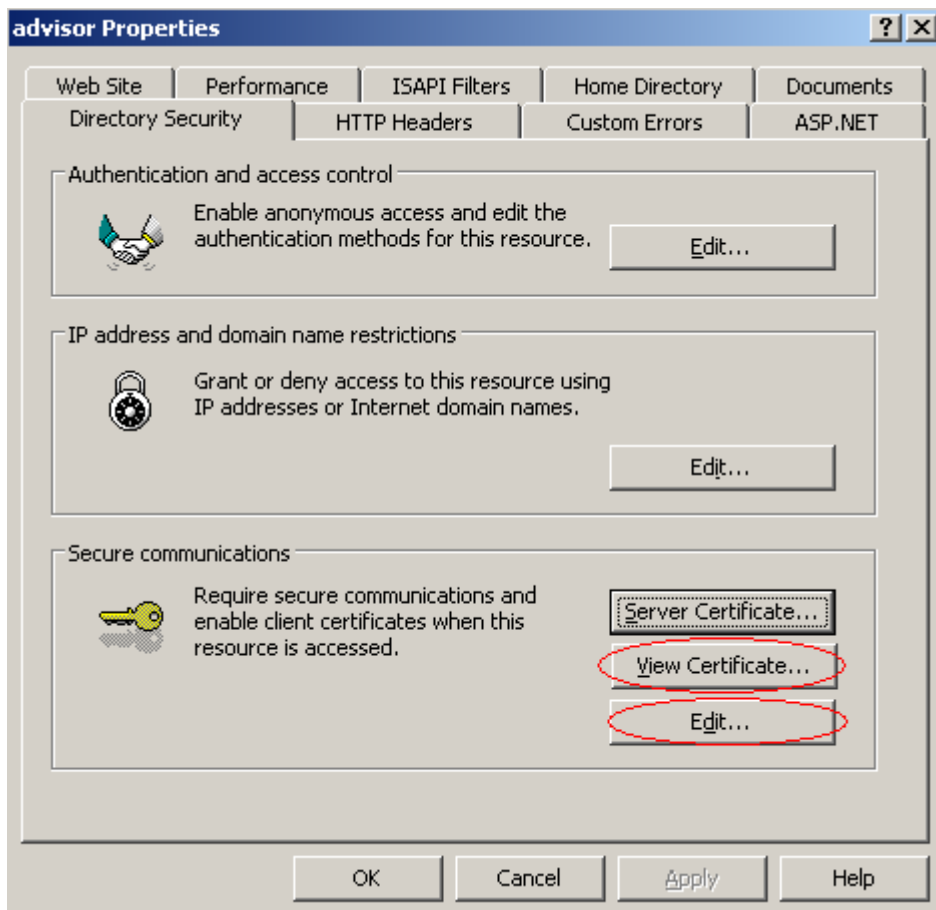
8. Click **Finish** to complete the process.



CONFIGURE AND TEST THE CERTIFICATE

To configure and test the certificate, follow the steps below.

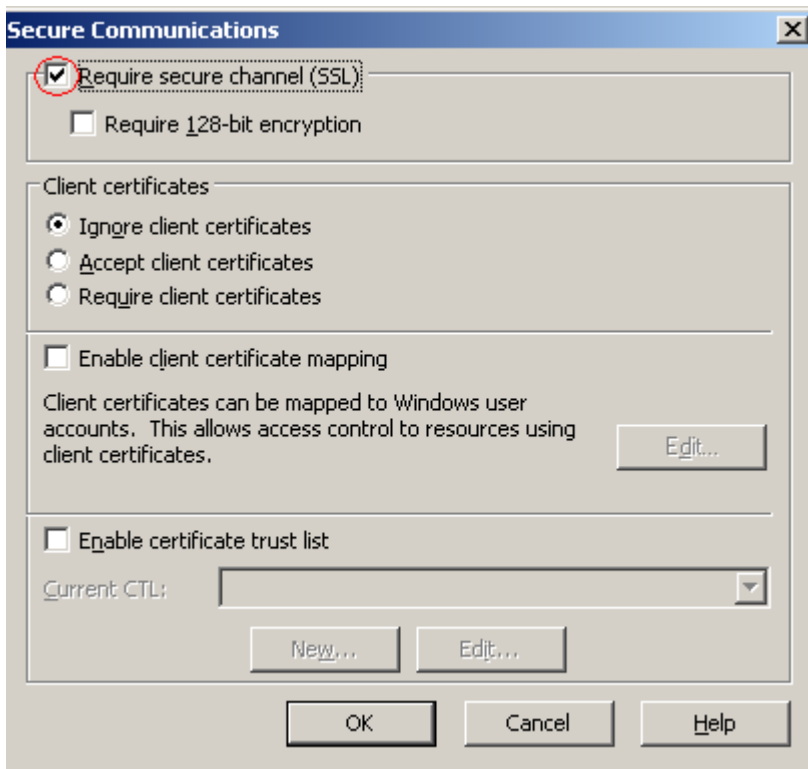
In the Directory Security tab and under Secure communications, there are now three available options.



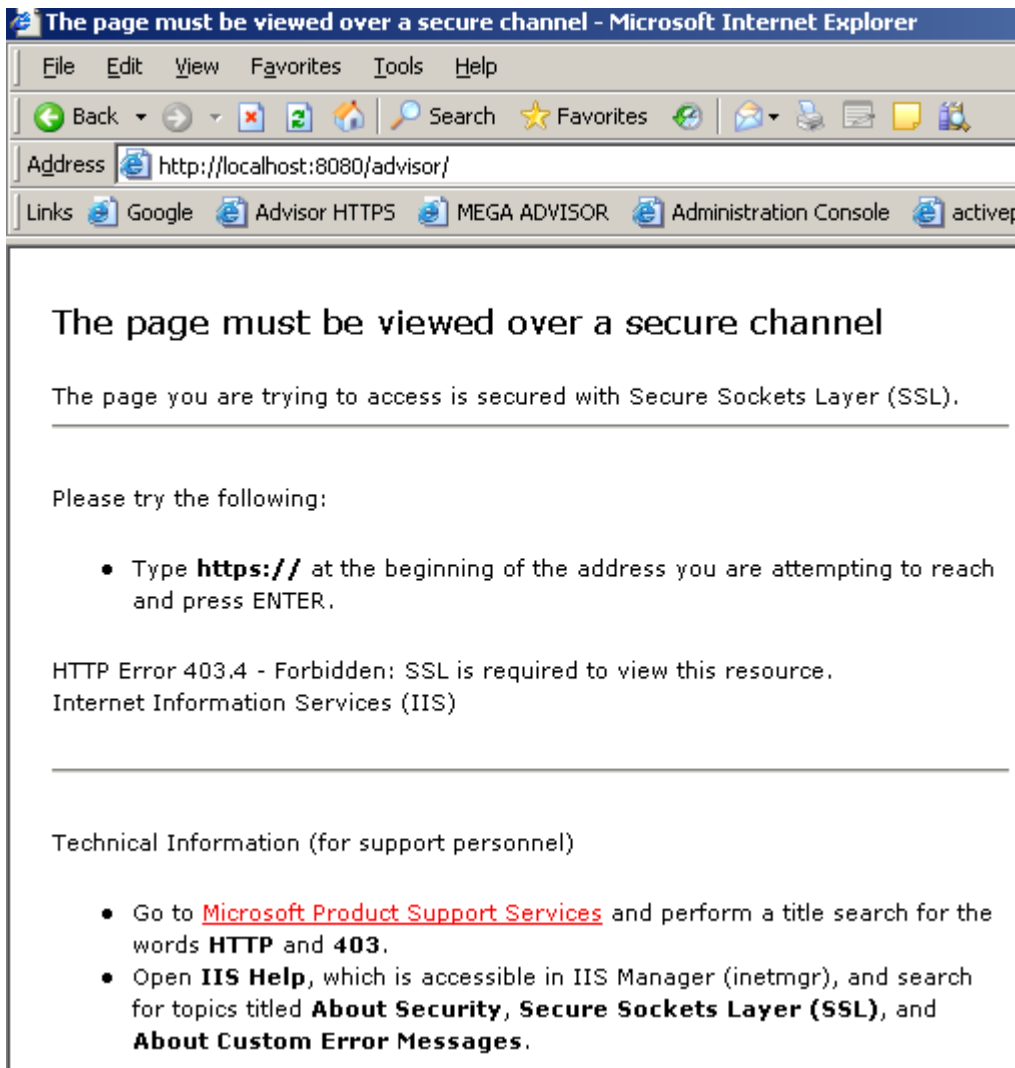
To set the Web site to require secure connections:

1. Click **Edit**.

The Secure Communications dialog box appears.

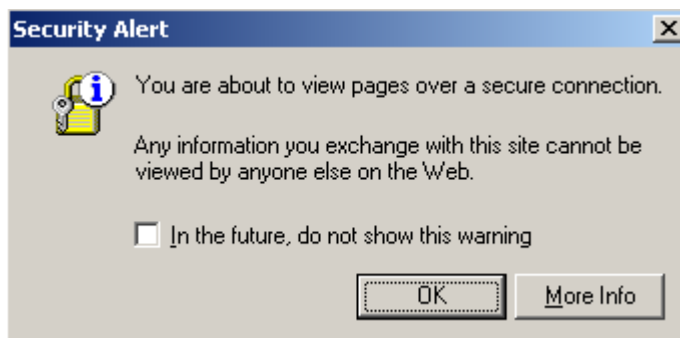


2. Select **Require secure channel (SSL)** and click **OK**.
3. Click **Apply** and then **OK** to close the property window.
4. Browse to the site and verify that it works. To do so, follow these steps:
 - a. Access the site through HTTP by typing <http://localhost:8080/advisor> in the browser. You receive an error message that resembles the following:



- b. Try to browse to the same Web page using a secured connection (HTTPS) by typing `https://CommonNameYouEnteredForTheCertificate/advisor/` (<https://wqa-mbi-s2003/advisor>) in the browser.

A security alert may appear if the "Warn if changing between secure and not secure mode" security option of your browser is active.



You may also receive a security alert which states that the certificate is not from a trusted root CA.

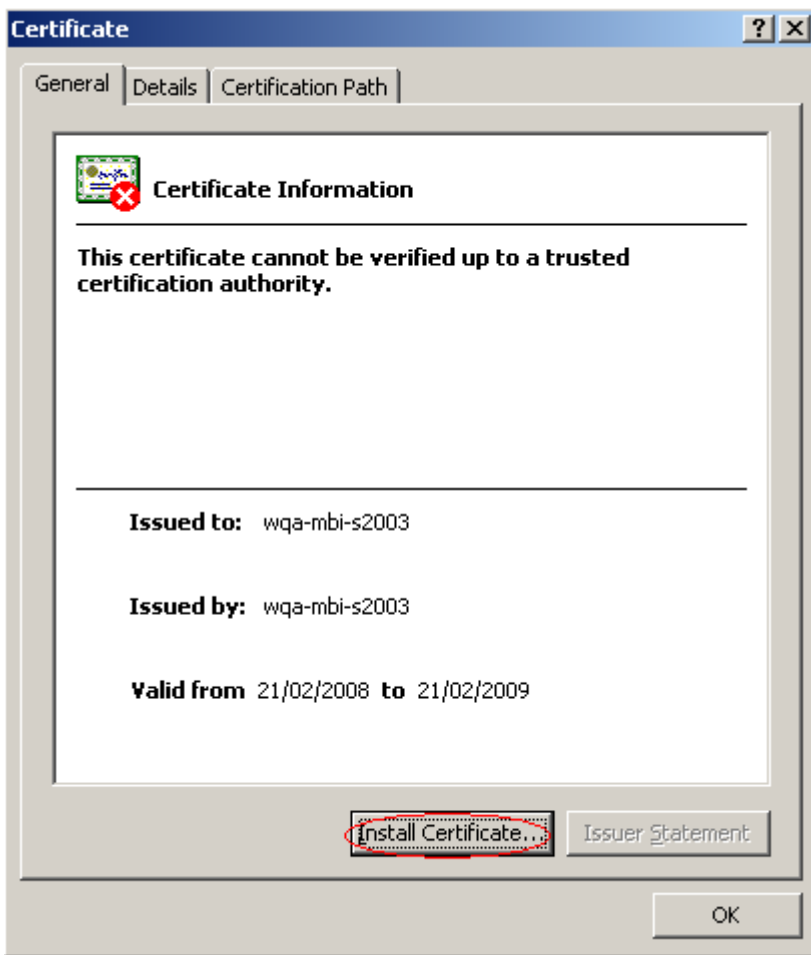


You can click **Yes** to continue to the Web page or install the certificate in order to not show this warning in the future.

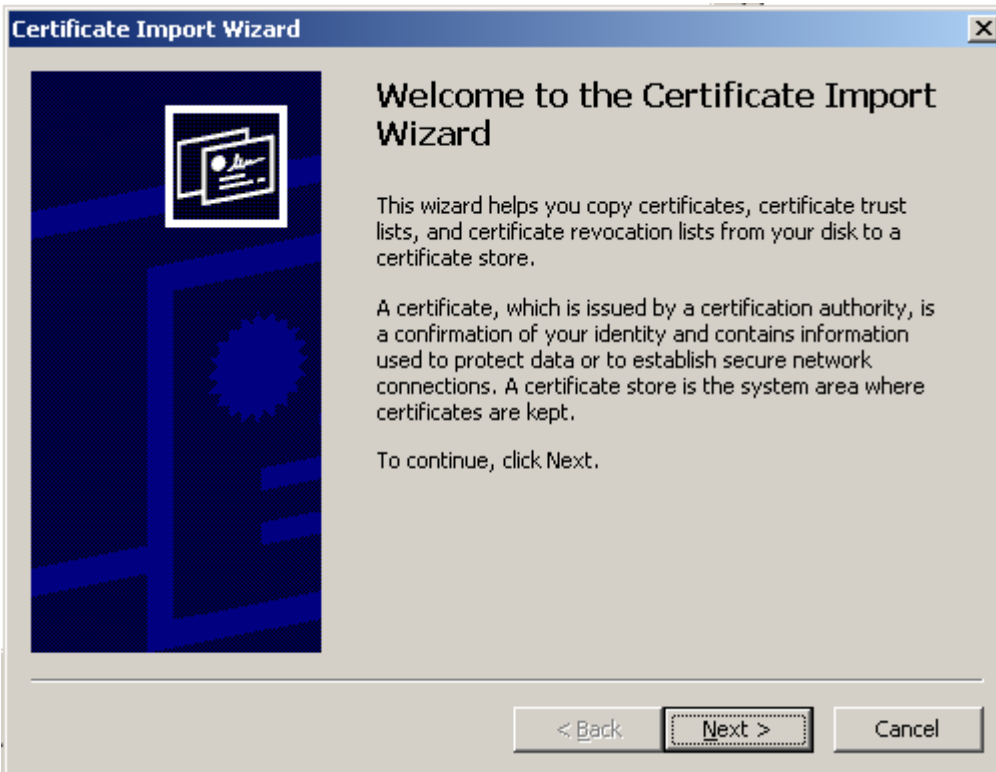
Note: You can also add the certificate to the trusted certificate list later on (See Appendix B for more details).

If you choose the second option, please follow these steps:

- Click **View Certificate**.



- Click **Install Certificate** in order to launch the "Certificate Import Wizard".



- Click **Next**.





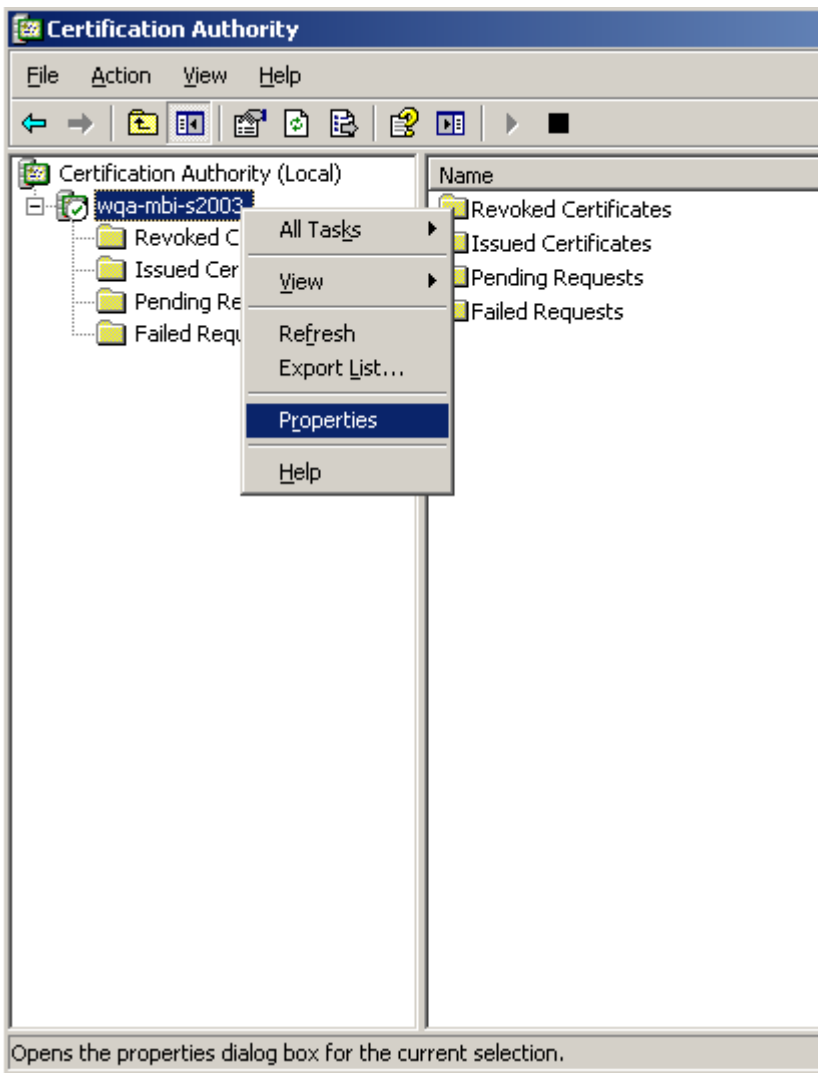
If the page below appears, you have successfully installed your certificate.



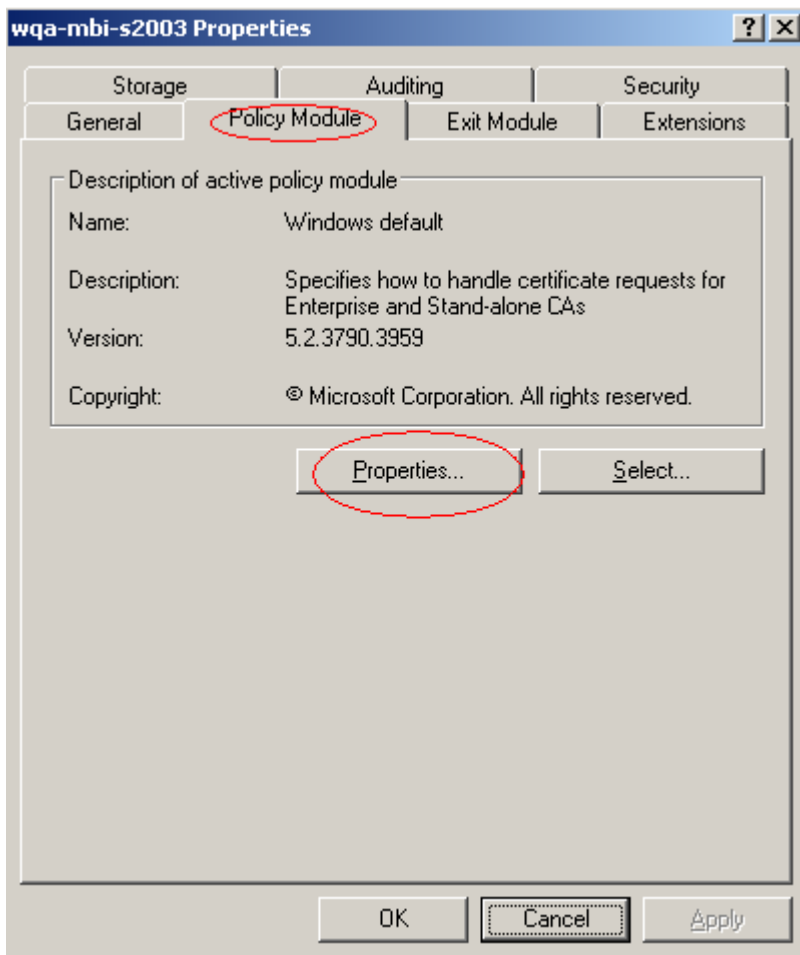
APPENDIX A: MODIFY THE CERTIFICATE ISSUING STRATEGY

To set the default action upon receipt of a certificate request, please follow the steps below:

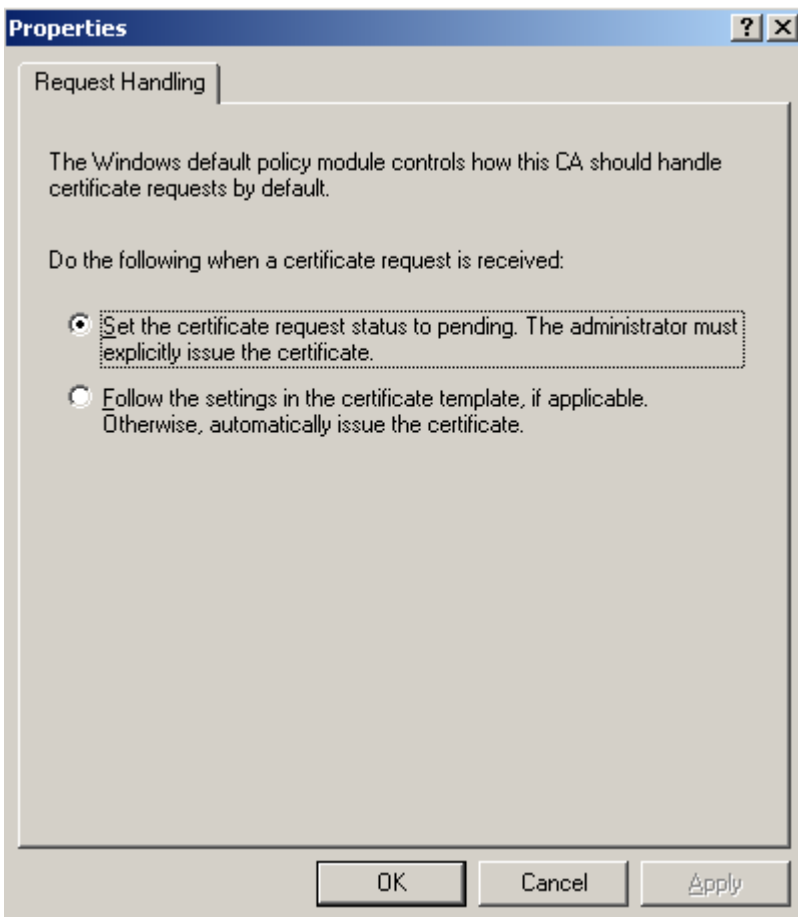
1. Log on to the system as a Certification Authority Administrator.
2. Open the CA MMC snap-in. To do so, click **Start > Programs > Administrative Tools > Certificate Authority**.
3. In the console tree, click the name of the certification authority (CA).



4. Click **Properties > Policy Module tab > Properties**.



5. Click the option you prefer.



6. Stop and restart the Certificate Services service.

Caution

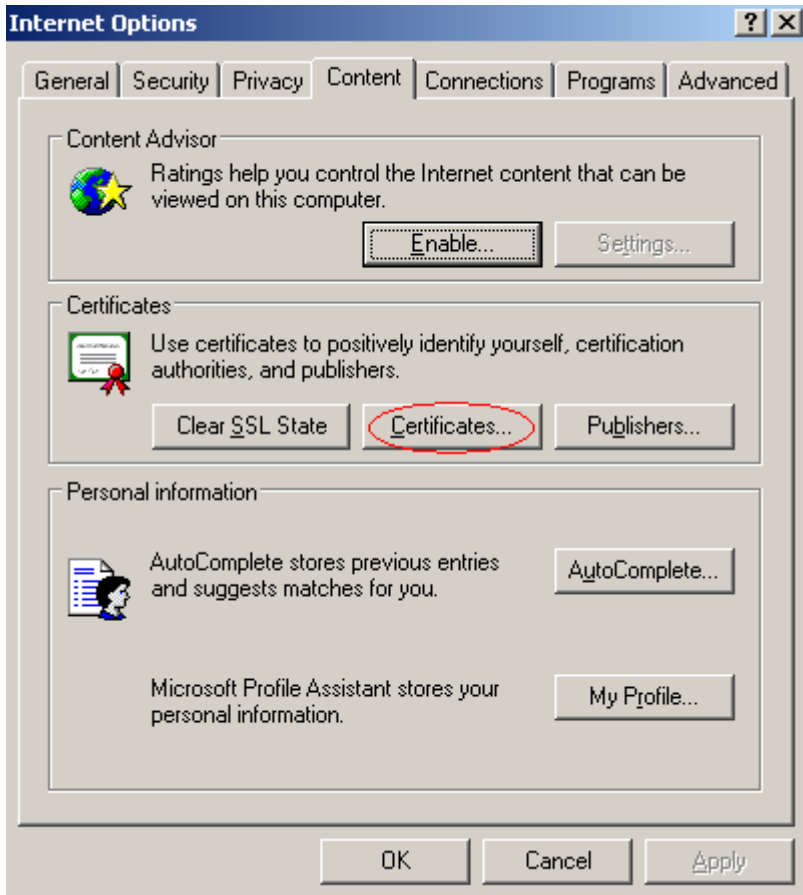
In most cases, for security reasons, it is strongly recommended that all incoming certificate requests to a stand-alone CA be marked as "pending". Unlike enterprise certification authorities, stand-alone CAs do not use the Active Directory directory service, even if it is available, to verify that an individual or computer is authorized to be issued a certificate from the CA automatically. For stand-alone CAs, the CA administrator is responsible for verifying the identity of the certificate requestor.

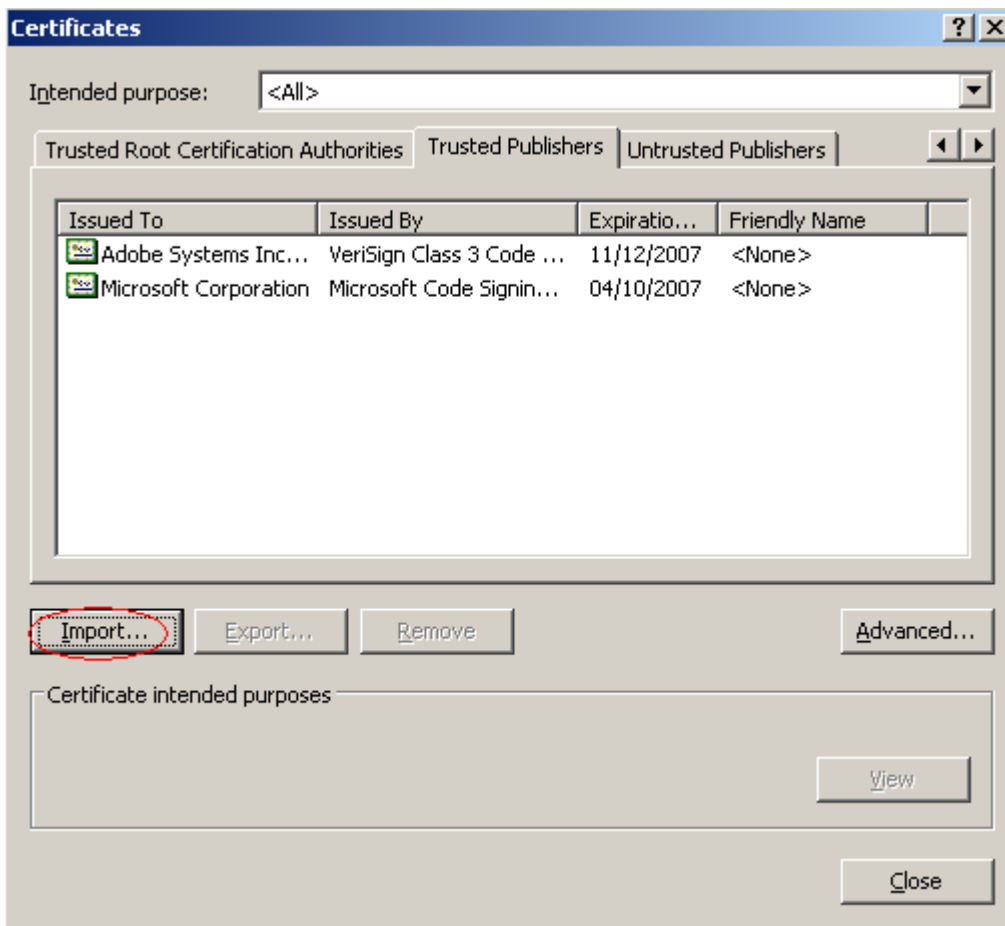
Note

If you change the setting from "Set the certificate request status to pending" to "Follow the settings in the certificate template...", this will only apply to certificate requests submitted to the CA after the default action has been changed. If there are pending requests held by the CA, these requests will remain as pending until the CA administrator issues the certificates or denies the requests.

APPENDIX B: INSTALL A CERTIFICATE

The "Certificate Import Wizard" is available via the Internet options.





Please follow the steps described in the "Install the certificate" chapter.