

EJBCA with GemSAFE Toolbox Part3

SSL

Introduction

This document is a continuation form 2 documents namely “EJBCA with GemSAFE Toolbox Part1 workstation logon” and “EJBCA with GemSAFE Toolbox Part2 sign and encrypt email”. This is the last document in the series.

The way to request SSL server certificate from EJBCA was described in sequential manner. But most of the EJBCA setting and configuration were described in the previous documents.

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1 -- Create SSL Certificate Profile

1. Go to EJBCA Administration GUI
2. Click “Edit Certificate Profiles”
3. Type "SSL" in the text box under “Add Profile”. Click “Add”
4. Choose “SSL” under “Current Certificate Profiles”

Edit Certificate Profiles

Current Certificate Profiles

DomainController
 ENDUSER (FIXED)
 Email
 GSSmartCardLogon
 OCSPSIGNER (FIXED)
 ROOTCA (FIXED)
SSL
 SUBCA (FIXED)

Edit Certificate Profile Delete Certificate Profile

Add Profile

Add

Rename Selected Use selected as template

5. Click “Edit Certificate Profiles”
6. Set SSL certificate’s profile’s parameters
 - a) Under key usage, select “Key agreement”
 - b) Under available CAs, Select only “GS_SCL_CA_v1”
7. leave all other setting by default and click “Save”
8. The following is the screen capture of the settings

Edit Certificate Profile

Certificate Profile : SSL

[Back to Certificate Profiles](#)

Validity (Days)	<input type="text" value="730"/>
Allow validity override	<input type="checkbox"/>
Allow extension override	<input type="checkbox"/>
Use Basic Constraints	<input checked="" type="checkbox"/>
Basic Constraints Critical	<input checked="" type="checkbox"/>
Use Path Length Constraint	<input type="checkbox"/>
Path Length Constraint	<input type="text"/>
Use Key Usage	<input checked="" type="checkbox"/>
Key Usage Critical	<input checked="" type="checkbox"/>
Use Subject Key ID	<input checked="" type="checkbox"/>
Use Authority Key Id	<input checked="" type="checkbox"/>
Use Subject Alternative Name	<input checked="" type="checkbox"/>
Subject Alternate Name Critical	<input type="checkbox"/>
Use Subject Directory Attributes	<input type="checkbox"/>
	<input type="checkbox"/>
Use CRL Distribution Point	<input type="checkbox"/>
CRL Distribution Point Critical	<input type="checkbox"/>
Use CA defined CRL Dist. Point	<input type="checkbox"/>
CRL Distribution Point URI	<input type="text"/>
CRL issuer	<input type="text"/>
Use FreshestCRL extension	<input type="checkbox"/>
Use CA Defined FreshestCRL extension	<input type="checkbox"/>
FreshestCRL extension URI	<input type="text"/>
Use OCSP No Check	<input type="checkbox"/>
Use Authority Information Access	<input type="checkbox"/>
Use CA defined OCSP locator	<input type="checkbox"/>
OCSP Service Locator URI	<input type="text"/>
<input type="button" value="Add"/> CA issuer URI	<input type="text"/>
Use Certificate Policies	<input type="checkbox"/>
Certificate Policies Critical	<input type="checkbox"/>

	Certificate Policy Id	<input type="text"/>
<input type="button" value="Add"/>	User Notice Text	<input type="text"/>
	CPS	<input type="text"/>
Use Qualified Certificate Statement <input type="checkbox"/>		
	Qualified Certificate Statement Critical	<input type="checkbox"/>
	Use PKIX QCSyntax-v2	<input type="checkbox"/>
	Semantics Id	<input type="text"/>
	RA Name	<input type="text"/>
	Use ETSI QC Compliance	<input type="checkbox"/>
	Use ETSI Secure Signature Creation Device	<input type="checkbox"/>
	Use ETSI transaction value limit	<input type="checkbox"/>
	Value Limit Currency	<input type="text"/>
	Value Limit Amount	<input type="text"/>
	Value Limit Exponent	<input type="text"/>
	Use ETSI retention period	<input type="checkbox"/>
	Retention Period (in years)	<input type="text"/>
	Use Custom QC-statement String	<input type="checkbox"/>
	Custom QC-statement OID	<input type="text"/>
	Custom QC-statement Text	<input type="text"/>
	Key usage	<div><div>Digital Signature</div><div>Non-repudiation</div><div>Key encipherment</div><div>Data encipherment</div><div>Key agreement</div><div>Key certificate sign</div><div>CRL sign</div><div>Encipher only</div><div>Decipher only</div></div>
	Allow Key Usage Override	<input checked="" type="checkbox"/>
	Use Extended Key Usage	<input type="checkbox"/>
	Extended Key Usage Critical	<input type="checkbox"/>

Extended Key Usage	<div>Any Extended Key Usage Server Authentication Client Authentication Code Signing Email Protection Time Stamping MS Smart Card Logon OCSPSigner MS Encrypted File System MS EFS Recovery Internet Key Exchange for IPsec SCVP Server Certificate Validation SCVP Request Authentication</div>
Use MS Template Value	<input type="checkbox"/>
Microsoft Template Value (Only the value not the actual template)	<div>DomainController</div>
Use CN Postfix	<input type="checkbox"/>
CN Postfix Text appended after first CN field	<div></div>
Use a Subset of Subject DN	<input type="checkbox"/>
Subset of SubjectDN	<div>Email, EmailAddress in DN UID, Unique Id CN, Common Name SerialNumber, Serial Number GivenName, Given Name Initials SurName, family name Title OU, Organization Unit O, Organization L, Location ST, State or Province: DC, Domain Component C, Country (ISO 3166) Unstructured Address, IP address</div>
Use a Subset of Subject Alt. Name	<input type="checkbox"/>
Subset of Subject Alt. Name	<div>Other Name RFC822 Name (email address) DNS Name IP Address X400 Address DirectoryName, Distinguished Name (DN)</div>
Available bit lengths	<div>0 Bits 192 Bits 239 Bits 256 Bits 384 Bits</div>

Available CAs

Any CA
AdminCA1
GS_SCL_CA_v1

Publishers

Type

End Entity

Save Cancel

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2 -- Create SSL End Entity profile

1. Go to EJBCA Administration GUI
2. Click “Edit End Entity Profiles”
3. Type "SSL" in the text box under “Add Profile”. Click “Add”
4. Choose “SSL” under “Current End Entity Profiles”

Edit End Entity Profiles

Current End Entity Profiles

DomainController
EMPTY
Email
GSSmartCardLogon
SSL

Edit End Entity Profile Delete Profile

Add Profile

Add

Rename Selected Use selected as template

5. Click “Edit Certificate Profile”
6. Set SSL certificate’s profile’s parameters
 - a) Under “Email Domain (Use only the domain part of the address, without the '@' char)” uncheck “Use”
 - b) Under “Default Certificate Profile” choose “SSL”
 - c) Under “Available Certificate Profile” choose “SSL”
 - d) Under “Default CA” choose “GS_SCL_CA_v1”
 - e) Under “Available CAs” choose only “GS_SCL_CA_v1”
7. leave all other setting by default and click “Save”
8. The following is the screen capture of the settings

Edit End Entity Profile

Profile : SSL

[Back to End Entity Profiles](#)

	Username	<input type="text"/>	
	Required	<input checked="" type="checkbox"/>	Modifiable <input checked="" type="checkbox"/>
	Password	<input type="password"/>	
	Autogenerated	<input type="checkbox"/>	Required <input checked="" type="checkbox"/>
	Batch generation (clear text pwd storage)	Use <input type="checkbox"/>	
	Default	<input type="checkbox"/>	Required <input type="checkbox"/>
Select for Removal	Subject DN Fields	<input type="text" value="Email, EmailAddress in DN"/>	<input type="button" value="Add"/>
<input type="checkbox"/>	CN, Common Name	<input type="text"/>	
	Required	<input checked="" type="checkbox"/>	Modifiable <input checked="" type="checkbox"/>
<input type="button" value="Remove"/>			
Select for Removal	Subject Alternative Name Fields	<input type="text" value="Other Name"/>	<input type="button" value="Add"/>
<input type="button" value="Remove"/>			
	Reverse Subject DN and Subject Alt Name Checks	<input type="checkbox"/>	
	Email Domain (Use only the domain part of the address, without the '@' char)	<input type="text"/>	
	Use	<input type="checkbox"/>	Required <input type="checkbox"/> Modifiable <input type="checkbox"/>
Select for Removal	Subject Directory Attribute Fields	<input type="text" value="Date of birth (yyyymmdd)"/>	<input type="button" value="Add"/>
<input type="button" value="Remove"/>			
	Certificate Validity Start Time (e.g. 5/13/08 2:24 AM or days:hours:minutes)	<input type="text"/>	
	Use	<input type="checkbox"/>	Modifiable <input checked="" type="checkbox"/>
	Certificate Validity End Time (e.g. 5/13/08 2:24 AM or days:hours:minutes)	<input type="text"/>	
	Use	<input type="checkbox"/>	Modifiable <input checked="" type="checkbox"/>
	Default Certificate Profile	<input type="text" value="SSL"/>	

Available Certificate Profiles	<div>DomainController ENDUSER Email GSSmartCardLogon OCSPSIGNER SSL</div>
Default CA	<div>GS_SCL_CA_v1</div>
Available CAs	<div>AdminCA1 GS_SCL_CA_v1</div>
Default Token	<div>User Generated</div>
Available Tokens	<div>User Generated P12 file JKS file PEM file</div>
Number of allowed requests	Use <input type="checkbox"/> Default <div>1</div>
Types:	
Administrator	Use <input type="checkbox"/> Default <input type="checkbox"/> Required <input type="checkbox"/>
Send Notification	Use <input type="checkbox"/> Default <input type="checkbox"/> Required <input type="checkbox"/>
<div>Add Delete all</div>	Notification Sender (Email Address) <input type="text"/>
	Notification Recipient <div>USER</div>
	Notification Events <div>STATUSNEW STATUSFAILED STATUSINITIALIZED STATUSINPROCESS STATUSGENERATED STATUSREVOKED STATUSHISTORICAL</div>
	Notification Subject <input type="text"/>
	Notification Message

Printing of user data Use ☐
Default ☐ Required ☐

Printer Name

Bullzip PDF Printer

Printed Copies

1

Current Template No Printing template is uploaded.

Upload Template

Upload Template

Save

Cancel

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3 -- Create SSL End Entity

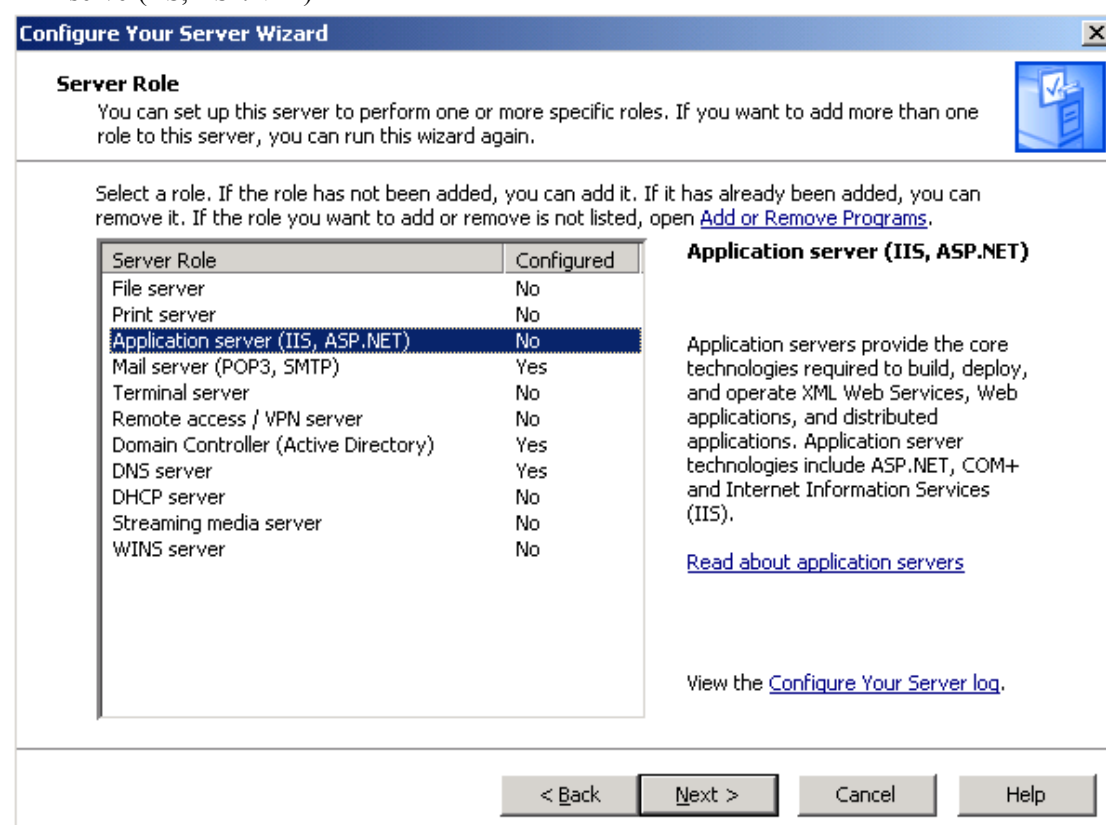
1. Go to EJBCA Administration GUI
2. Click “Add Edit Entity”
3. Set SSL end entity’s parameters
 - a) End Entity Profile=SSL
 - b) User Name=SSL1
 - c) Password=foo123
 - d) Confirm Password=foo123
 - e) CN, Common Name=SSL1
4. leave all other setting by default and click “Add End Entity”
5. The following is the screen capture of the settings

Add End Entity

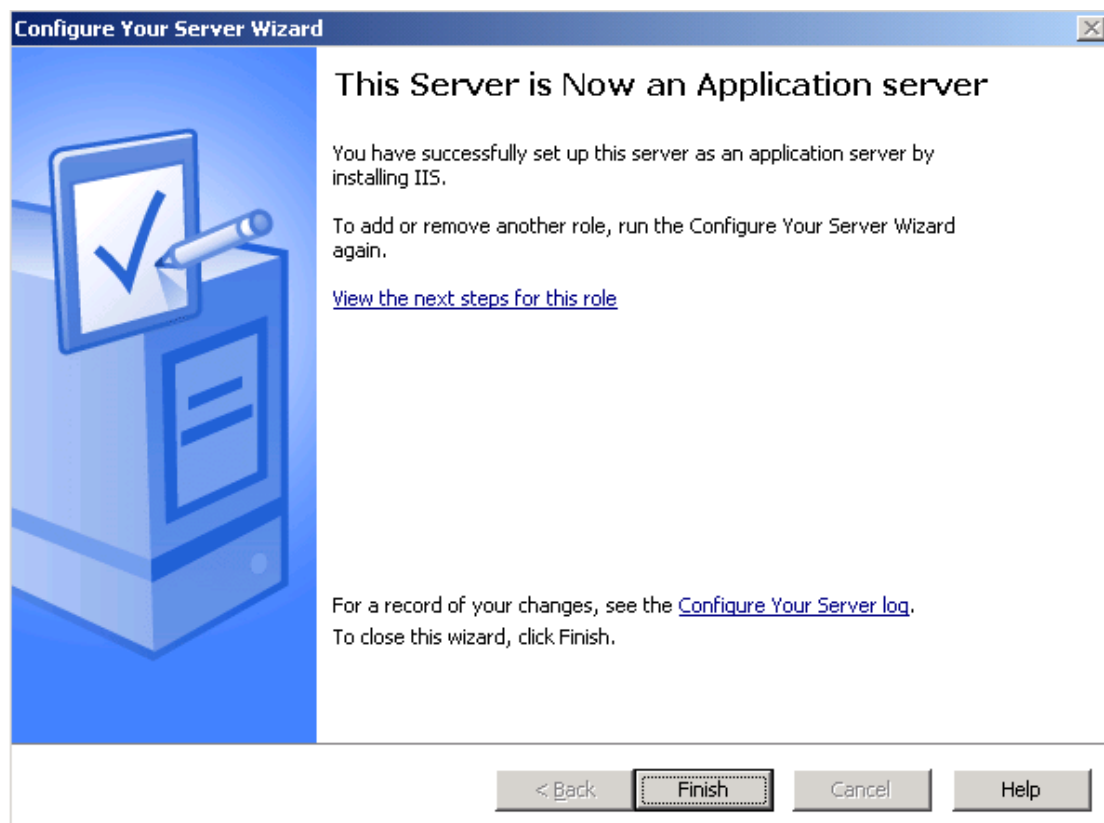
End Entity Profile	SSL	Required
Username	SSL1	<input checked="" type="checkbox"/>
Password	••••••	<input checked="" type="checkbox"/>
Confirm Password	••••••	
Subject DN Fields		
CN, Common Name	SSL1	<input checked="" type="checkbox"/>
Certificate Profile	SSL	<input checked="" type="checkbox"/>
CA	GS_SCL_CA_v1	<input checked="" type="checkbox"/>
Token	User Generated	<input checked="" type="checkbox"/>
<div> <input type="button" value="Add End Entity"/> <input type="button" value="Reset"/> </div>		

4 -- Install IIS

1. Start\Manage Your Server\Add or remove a role\click “Next”\Choose “Application server(IIS, ASP.NET)”



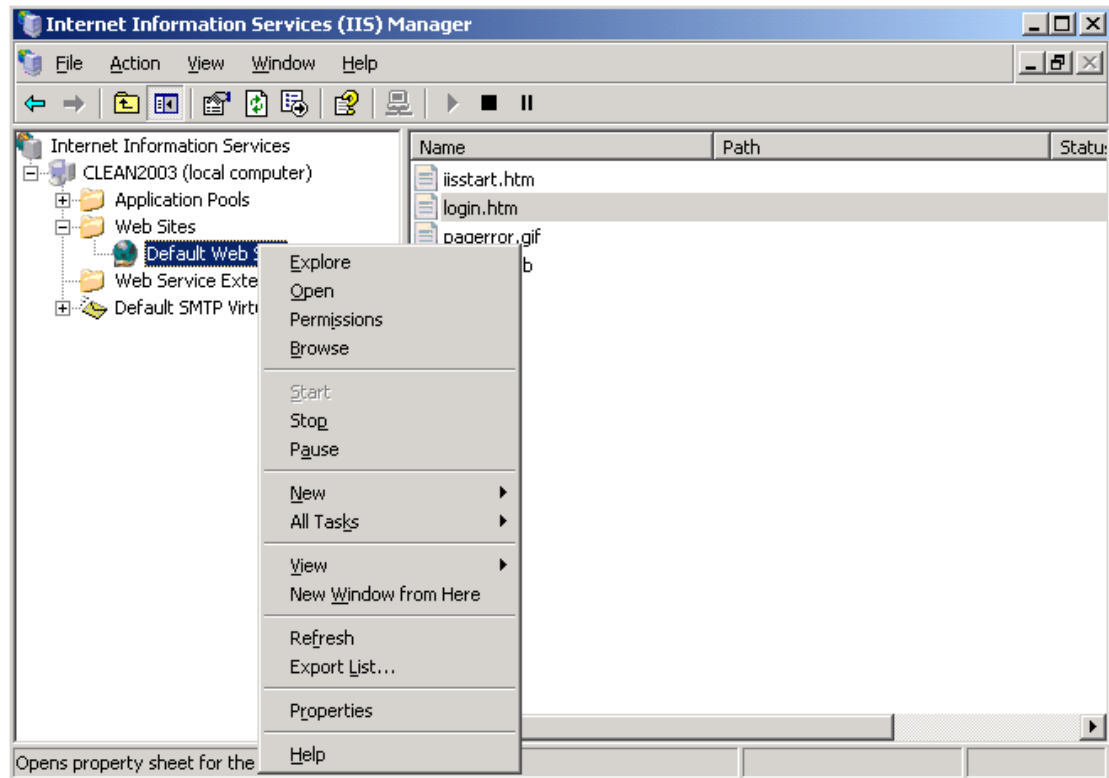
2. Click “Next” 3 times
3. You may be prompted to insert Windows 2003 server CD during installation process

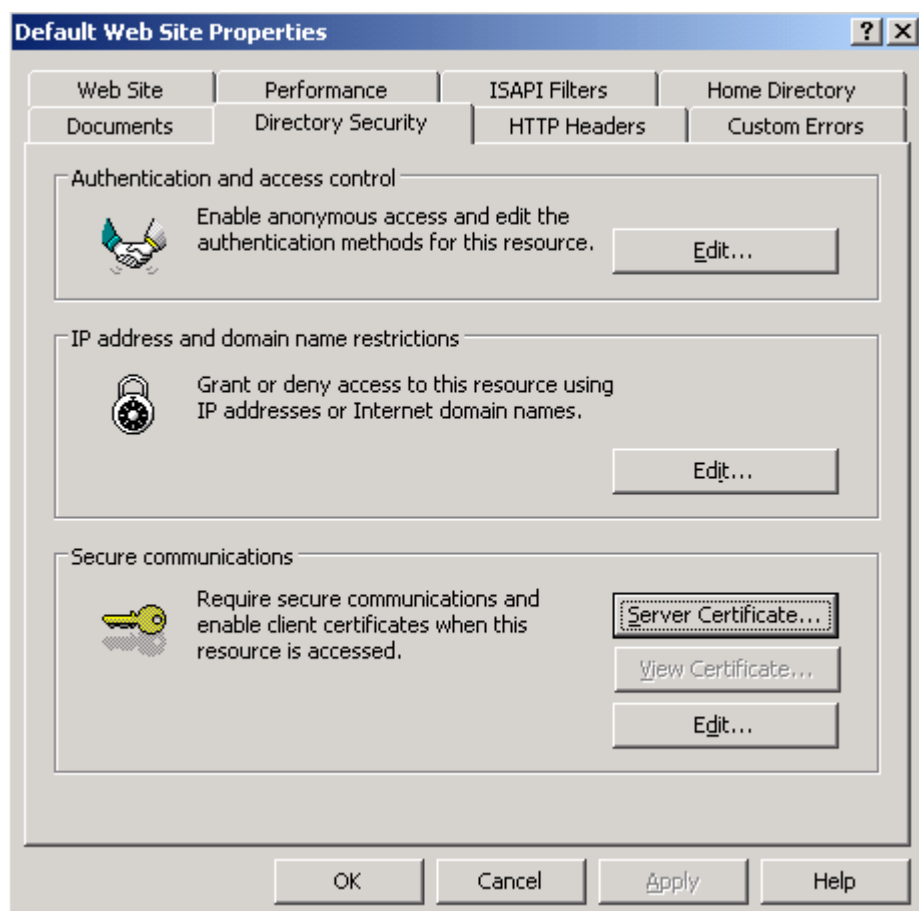


4. Click "Finish"

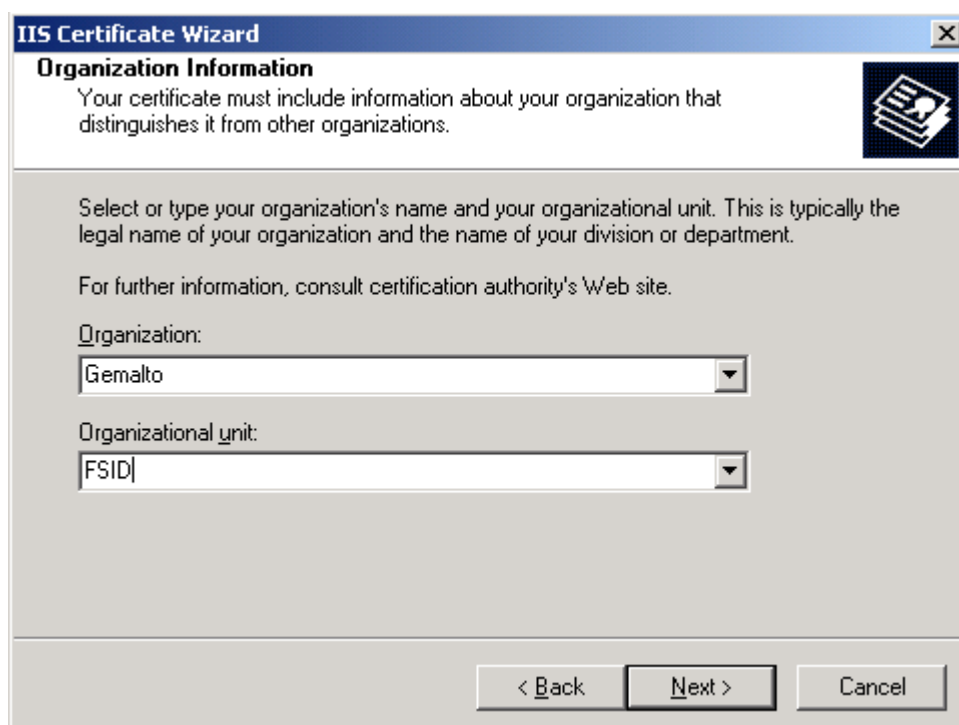
5 -- Send SSL Certificate Request

1. Start\All Programs\Administrative tools\ Internet Information Services (IIS) Manager\CLEAN2003 (local computer)\ Web Sites\right click “Default Web Site”\Properties

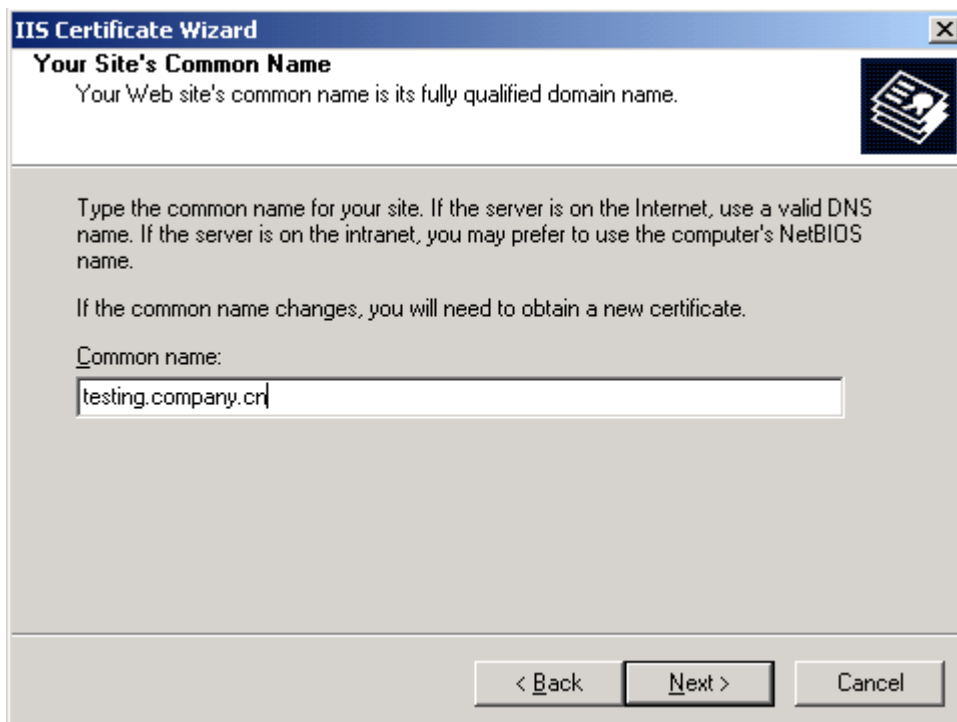




2. Directory Security\Server Certificate...
3. Click "Next" 4 times
4. "Organization"= Gemalto
5. "Organization Unit"=FSID

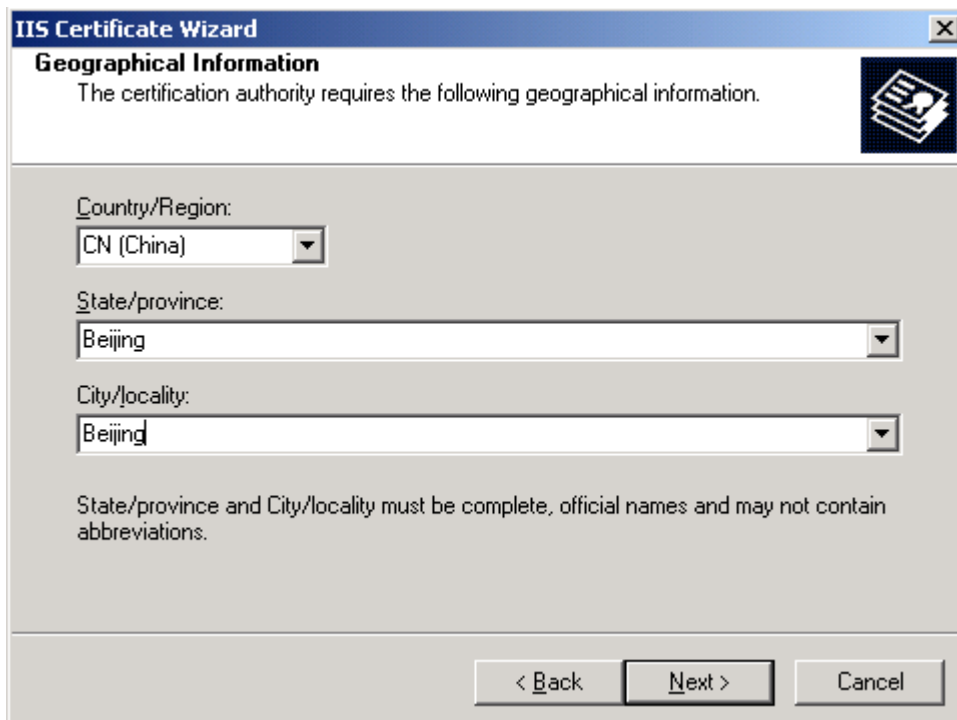


6. Click “Next”
7. Input website’s “common name”, here I use “testing.company.cn” as example



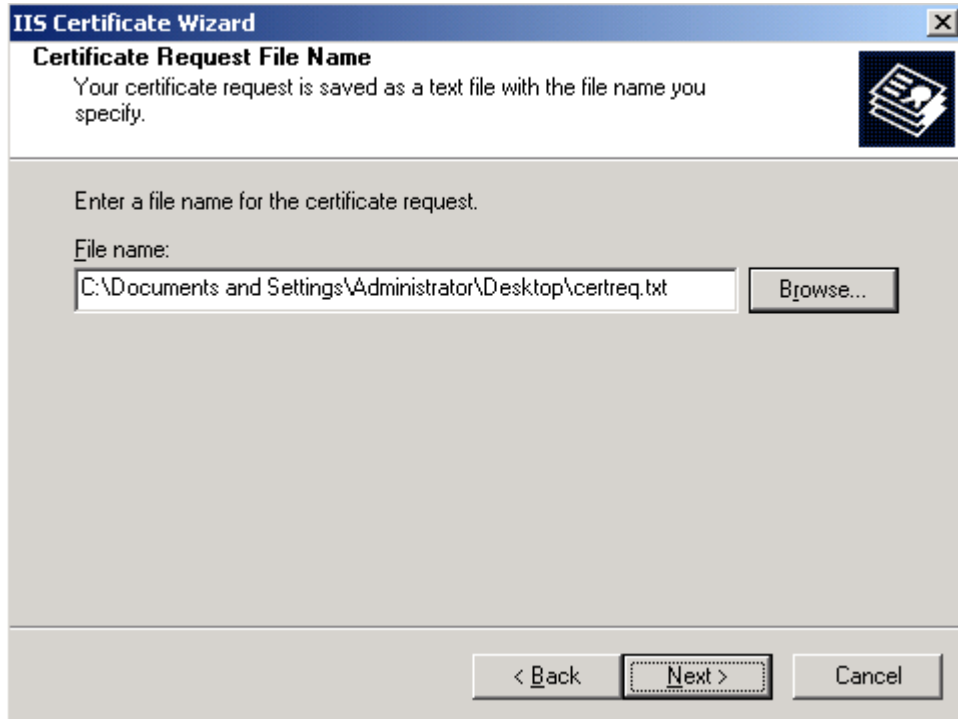
The screenshot shows the 'IIS Certificate Wizard' window at the 'Your Site's Common Name' step. The title bar reads 'IIS Certificate Wizard'. The main heading is 'Your Site's Common Name'. Below it, a message states: 'Your Web site's common name is its fully qualified domain name.' To the right is an icon of a document with a key. The main text area contains instructions: 'Type the common name for your site. If the server is on the Internet, use a valid DNS name. If the server is on the intranet, you may prefer to use the computer's NetBIOS name.' and 'If the common name changes, you will need to obtain a new certificate.' Below this is a label 'Common name:' followed by a text input field containing 'testing.company.cn'. At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

8. Click “Next”
9. “Country/Region”=(CN) China
10. “State”=Beijing
11. “City/locality”=Beijing

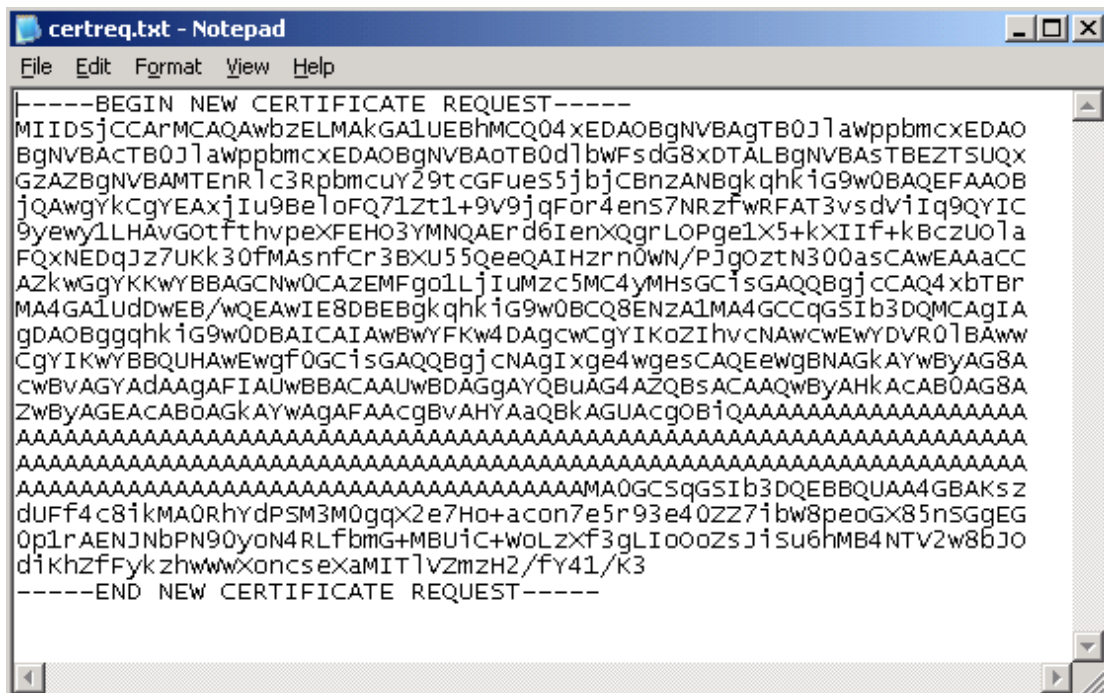


The screenshot shows the 'IIS Certificate Wizard' window at the 'Geographical Information' step. The title bar reads 'IIS Certificate Wizard'. The main heading is 'Geographical Information'. Below it, a message states: 'The certification authority requires the following geographical information.' To the right is an icon of a document with a key. The main text area contains three labels with corresponding input fields: 'Country/Region:' with a dropdown menu showing 'CN (China)', 'State/province:' with a dropdown menu showing 'Beijing', and 'City/locality:' with a dropdown menu showing 'Beijing'. Below these fields is a note: 'State/province and City/locality must be complete, official names and may not contain abbreviations.' At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

12. Click “Next”
13. Save the certificate request at desktop



14. Click “Next” 2 times
15. Click “Finish”
16. A text file will be created at desktop
17. Open the text file, “certreq.txt”, copy the content, which is started by “-----BEGIN NEW CERTIFICATE REQUEST-----” and ended by “-----END NEW CERTIFICATE REQUEST-----”



18. Go to EJBCA public webpage\Create Server Certificate
19. User name=SSL1
20. Password=foo123

21. Paste the request to the text area below

22. Select “Result type” as “PKCS7”

Please give your username and password, paste the PEM-formated PKCS10 certification request into the field below and click OK to fetch your certificate.

A PEM-formatted request is a BASE64 encoded PKCS10 request starting with

-----BEGIN CERTIFICATE REQUEST-----

and ending with

-----END CERTIFICATE REQUEST-----

Enroll

Username

SSL1

Password

foo123

```

-----BEGIN NEW CERTIFICATE REQUEST-----
MIIDSjCCArMCAQAwbzELMAkGA1UEBhMCQ04xEDAOBgNVBAGTB0JlaWppbmxcEDAO
BgNVBACTB0JlaWppbmxcEDAOBgNVBAoTB0dlbWfsdG8xDTALBgNVBAStBEZTSUQx
GzAZBgNVBAMTEhRlc3RpbmcuY29tcGFueS5jbjCBnzANBgkqhkiG9w0BAQEFAAOB
jQAwgYkCgYEAxjIu9BelofQ71Zt1+9V9jqFor4enS7NRzfwRFAT3vsvdViIq9QYIC
9yewy1LHAvGOtftthvpeXFEH03YMNQAErd6IenXQgrLOPge1X5+kXIIf+kBczU0la
FQxNEDqJz7UKk30fMAsnfCr3BXU55QeeQAIHzn0WN/PJgOztN300asCAwEAaACC
AZkwGgYKKwYBBAGCNwOCAsEMFgo1LjIuMzc5MC4yMHsGCisGAQQBgjcCAQ4xbTBr
MA4GA1UdDwEB/wQEAwIE8DBEBGkqhkiG9w0BQC8ENzA1MA4GCCqGSIb3DQMCAGIA
gDAOBggqhkiG9w0DBAICAIAwBwYFKw4DAgcwCgYIKoZIhvcNAwcwEwYDVRO1BAww
CgYIKwYBBQUHAEwgfOGCisGAQQBgjcNAgIxge4wgesCAQEeWgBNAgkAYwByAGSA
cwBvAGYAdAAgAFIAUwBBACAAUwBDAGGAYQBuAG4AZQBsACAAQwByAHkAcABOAGSA
ZwByAGEAcABOAGkAYwAgAFAAcGbvAHYAaQBkAGUAcgOBiQAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

```

Result type

PKCS7

OK

23. Click “OK”

24. A page of result will be shown.

-----BEGIN PKCS7-----

```

MIAGCSqGSIb3DQEHAAqCAMIACAQExCzAJBgUrDgMCGGUAMIAGCSqGSIb3DQEHAAcA
JIAEBUUVKQkNBAAAAAAAAAAoIAwggIiMIIBi6ADAgECAGhCrVt1SejMZTANBgkqhkiG
9wOBAQUFADA2MRUwEwYDVQQDDAxHUyBTQ0wgQ0EgdjExEDAOBgNVBAAoMBONvbXBh
bnkxCzAJBgNVBAYTAkNOMB4XDTA4MDUxMzA4MDAwNFoXDTEwMDUxMzA4MDAwNFow
DzENMAsGA1UEAwwEU1NMMTCBnzANBgkqhkiG9wOBAQEFAAOBjQAwgYkCgYEAxjIu
9BelofQ71Zt1+9V9jqFor4enS7NRzfwRFAT3vsdViIq9QYIC9yewy1LHAvG0tftH
vpeXFEHO3YMNQAERd6IenXQgrLOPge1X5+kXIIf+kBczU0laFQxNEDqJz7UKk3Of
MAsnfCr3BXU55QeeQAIHzn0WN/PJgOztN300asCAwEAAaNgMF4wHQYDVROOBBYE
FINT1RB5QFPam9joFbkul4Pb7dh3MAwGA1UdEwEB/wQMAAwHwYDVROjBBgwFoAU
ixmb7OF1ggO29VCJB599nK1/NcUwDgYDVROPAQH/BAQDAgMIMAOGCSqGSIb3DQEB
BQUAA4GBACybtGpc/mURuxRtXEDUnB3G4SD2zQBjvPxLUjWkPIGz4/RhHRY6jrTG
xSq3ps8jp9Amj5Y3z9KpW0y9io4OJeLlpQgKfuJNbNGbs/t9Kzrqnmphu8VNxqww
k/q7pXGNzUwX2SqqS/YZiCeGANwrnpAC68BgDPBSy1z2HEm4aTtuMIICTDCCAbWg
AwIBAgIIa+H+KxJakcgwDQYJKoZIhvcNAQEFBQAwNjEVMBMGA1UEAwwMR1MgUONM
IENBIHYxMRAdBgYDVQQKDAdDb21wYW55MQswCQYDVQQGEwJDTjAeFw0wODA1MDYx
OTU3NDNaFw0xODA1MDQxOTU3NDNaMDYxFTATBgNVBAMMDEdITFNDTCBDQSB2MTEQ
MA4GA1UECgwHQ29tcGFueTELMAMGA1UEBhMCQ04wgZ8wDQYJKoZIhvcNAQEBBQAD
gYOAMIGJAoGBAJ1fsrvld6hgc5scE+Jrat8K9SkQJaGI5D06/DV3JVL2oBUOXat
oSUZxJnRe6HK+9h6dAPXxCjgAx8h+5pqOBLF1FuwVZV1UJ7EORo1vaEphY51LJOM
NXqk16UGAvOTvMgHvhJnXKKkrXesjRLJbmzG/zrk24ZPodBoG5ixOLQ5AgMBAAGj
YzBhMBOGA1UdDgQWBBSLGGZvs4WWCA7b1UIkHn32crX81xTAPBgNVHRMBAf8EBTAD
AQH/MB8GA1UdIwQYMBAAFIzZm+zhZYIDtvVQiQeffZytfzXFMA4GA1UdDwEB/wQE
AwIBhjANBgkqhkiG9wOBAQUFAAOBgQBYzWAjvnWxFlmUmSJlNiBgWGOaKUorwvjO
j2WglG1G4AJFGqP3cfwKAOrwBnkTZhfm54sC6J9rkNkJqgi7M/01Ek19/r1RdO/B
4x1/quJxIOHvKOzlxotUzZ93X5B/mFfjvTYerpKgxYohU8W+j8NBZAUxjaXax2AC
SH5EpOfzEwAAMYIBRzCCAUMCAQEWQjA2MRUwEwYDVQQDDAxHUyBTQ0wgQ0EgdjEx
EDAOBgNVBAAoMBONvbXBhbnkxCzAJBgNVBAYTAkNOAGhr4f4rElqRyDAJBgUrDgMC
GgUAoF0wGAYJKoZIhvcNAQkDMQsGCsGSIb3DQEHAATAcBgkqhkiG9wOBCQUxXcnN
MDgwNTEzMDgxMDAOWjAjBgkqhkiG9wOBCQQxFgQUYcQkfK76BhgMMv85scKNGMDU
e1cwDQYJKoZIhvcNAQEBBQAEgYBMkQE+zn1JLcAB1nCvcS6tQR429p1zOnUWIk/Z
SBO1sAEe3f8DyYl27Er1jukO175PpIcdT3PALhQdAvhtgnTQ2yICHOPUuQ37sjO7
gj8KykOUyJEv6W1csXu+IN/JOHgNA9EUwfJh28adJm8B+/n/ccm6y5g0/CtNoRrO
mGkgKAAAAAAAAAA==

```

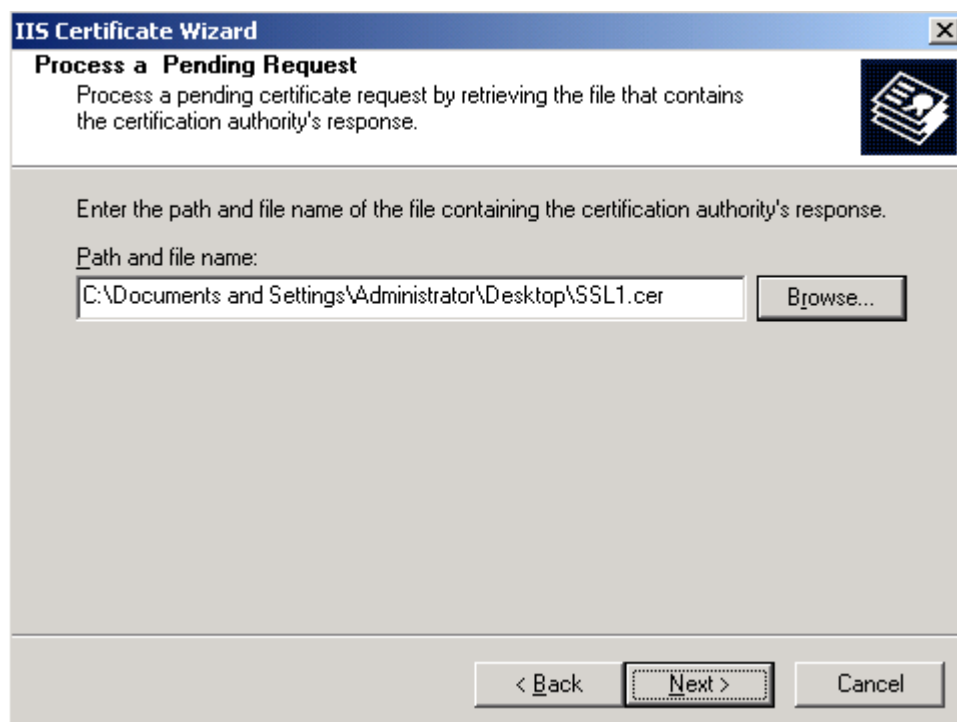
-----END PKCS7-----

6 -- Fetch SSL Certificate

1. Copy the result and save it in a text file at desktop with a name of SSL1.txt
2. Change the text file extension from txt to cer so SSL1.txt becomes SSL1.cer
3. Go to Start\All Programs\Administrative tools\ Internet Information Services (IIS) Manager\ CLEAN2003 (local computer)\ Web Sites\right click "Default Web Site"\Properties\ Directory Security\Server Certificate...



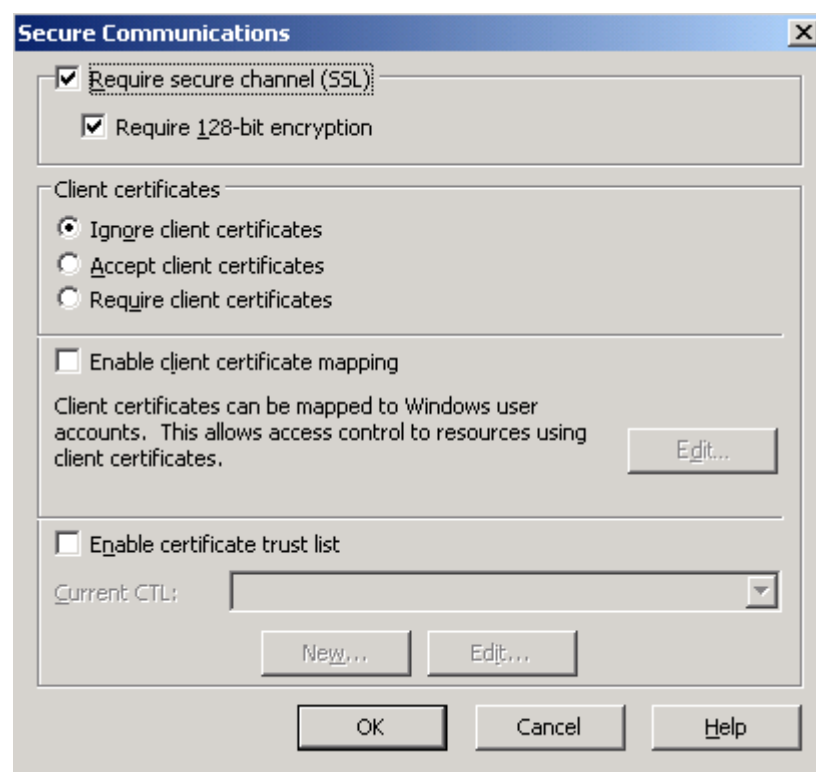
4. Click "Next >" 2 times



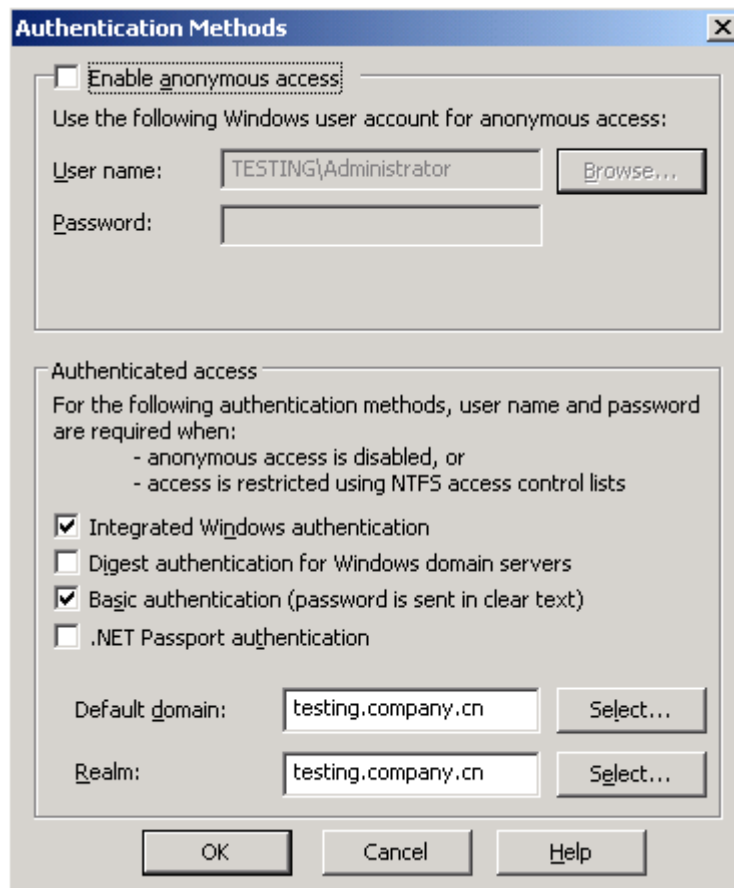
5. Browse to SSL1.cer
6. Click "Next >" 3 times
7. Click "Finish"

7 -- Configure IIS

1. Go to Start\All Programs\Administrative tools\ Internet Information Services (IIS) Manager\ CLEAN2003 (local computer)\ Web Sites\right click “Default Web Site”\Properties\ Directory Security\Secure Communications\Edit
2. Check “require secure Channel (SSL)”
3. Check “require 128-bit encryption”



4. Click “OK”
5. Go to “Authentication and access control”\Edit...
6. Uncheck the “anonymous access”
7. User name:= TESTING\Administrator
8. Password=foo123
9. Check the “Basic authentication (password is sent in clear text)”
10. Choose “Yes” to the warning
11. Default Domain= testing.company.cn
12. realm= testing.company.cn



13. Click "OK" 2 times

8 -- Test SSL

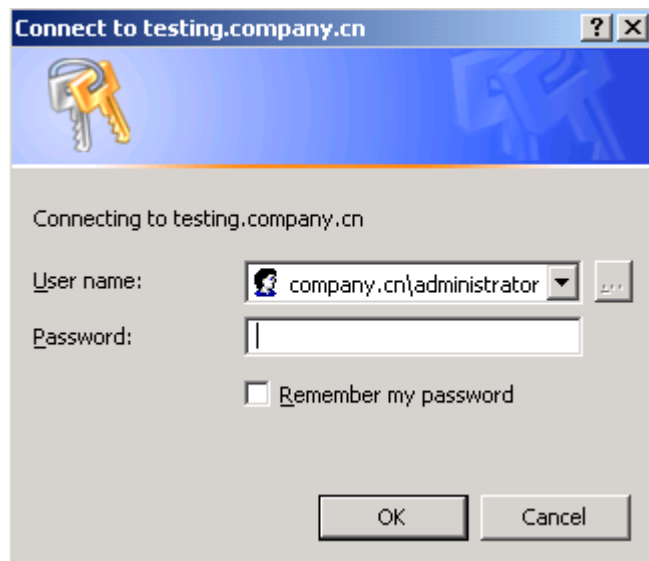
1. Open Internet Explorer, go to <http://testing.company.cn/>
2. You will not be able to access the default webpage



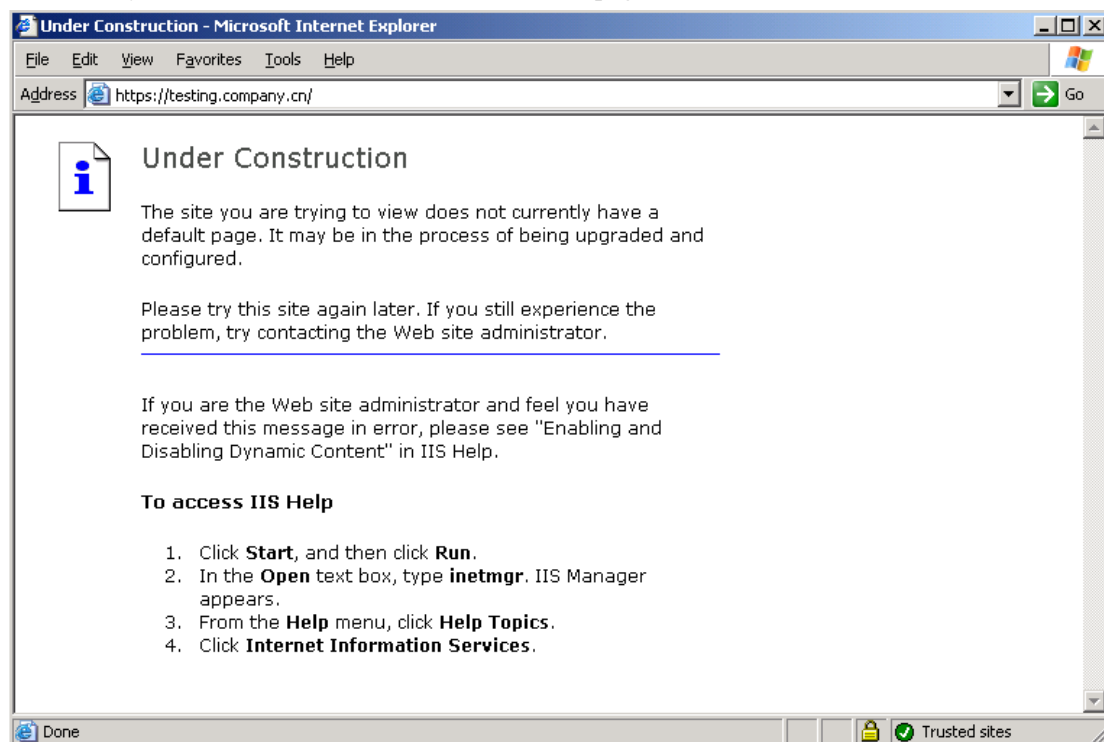
3. Then try again with <https://testing.company.cn/>




4. Click "Yes"



5. Enter your account password, which you used to logon to server
6. Then you will be able to access the default webpage



7. Notice that there is a lock sign  at the bottom of the web page
8. That means SSL is working