CSM - How to install Third-Party SSL Certificates for GUI access

Contents

Introduction

Cisco Security Manager (CSM) provides an option to use security certificates issued by third-party Certificate Authorities (CAs). These certificates can be used when the organizational policy prevents from using CSM self-signed certificates or requires systems to use a certificate obtained from a particular CA.

TLS/SSL uses these certificates for communication between CSM Server and the client browser. This document describes the steps to generate a Certificate Signing Request (CSR) in CSM and how to install the identity and root CA certificates in the same.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Knowledge of SSL Certificates Architecture.
- Basic Knowledge of Cisco Security Manager.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Security Manager version 4.11 and later.

CSR creation from the User Interface

This section describes how to generate a CSR.

Step 1. Run the Cisco Security Manager home page and select **Server Administration > Server > Security > Single-Server Management > Certificate Setup.**

Step 2. Enter the values required for the fields described in this table:

Field	Usage Notes
Country Name	Two character country code.
State or Province	Two character state or province code or the complete name of the state or province.
Locality	Two character city or town code or the complete name of the city or town.
Organization Name	Complete name of your organization or an abbreviation.
Organization Unit Name	Complete name of your department or an abbreviation.
Server Name	DNS name, IP Address or hostname of the computer. Enter the server name with a proper and resolvable domain name. This is displayed on your certificate (whether self-signed or third party issued). Local host or 127.0.0.1 should not be given.
Email Address	E-mail address to which the mail has to be sent.

Step 3. Click **Apply** to create the CSR.

The process generates the following files:

- server.key—Server's private key.
- server.crt—Server's self- signed certificate.

- server.pk8—Server's private key in PKCS#8 format.
- server.csr—Certificate Signing Request (CSR) file.

Note: This is the path for the generated files.
~CSCOpx\MDC\Apache\conf\ssl\chain.cer
~CSCOpx\MDC\Apache\conf\ssl\server.crt
~CSCOpx\MDC\Apache\conf\ssl\server.csr
~CSCOpx\MDC\Apache\conf\ssl\server.pk8
~CSCOpx\MDC\Apache\conf\ssl\server.key

Note: If the certificate is a self-signed certificate, then you cannot modify this information.

Identity Certificate Upload into CSM Server

This section describes how to upload the Identity Certificate provided by the CA to the CSM Server

Step 1 Find the SSL Utility Script available at this location

```
NMSROOT\MDC\Apache
```

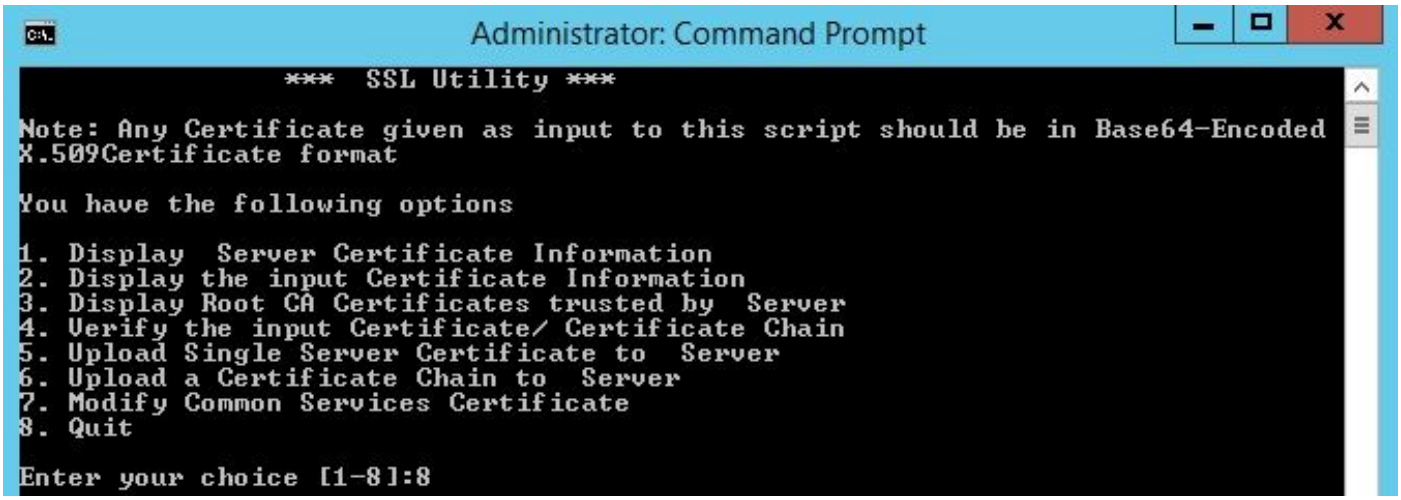
Note: NMSROOT must be replaced by the directory where CSM is installed.

This utility has these options.

Number	Option	What it Does...
1	Display Server certificate information	• Displays the Certificate details of the CSM Server. For third party issued certificates, this option displays the details of the se certificate, the intermediate certificates, if any, and the Root CA certificat
2	Display the input certificate information	• Verifies if the certificate is valid. This option accepts a certificate as an input and: • Verifies whether the certificate is in encoded X.509 certificate format • Displays the subject of the certificate and the details of the issuing certificate. • Verifies whether the certificate is valid on the server.
3	Display Root CA certificates trusted by Server	Generates a list of all Root CA Certificates.
4	Verify the input certificate or certificate chain	Verifies whether the server certificate issued by third party CAs, can be uploaded. When you choose this option, the utility: • Verifies if the certificate is in Base64 Encoded X.509Certificate forma • Verifies if the certificate is valid on the server • Verifies if the server private key and input server certificate match. • Verifies if the server certificate can be traced to the required Root CA certificate using which it was signed. • Constructs the certificate chain, if the intermediate chains are also gi

		and verifies if the chain ends with the proper Root CA certificate. After the verification is successfully completed, you are prompted to uplo certificates to CSM Server. The utility displays an error: • If the input certificates are not in required format • If the certificate date is not valid or if the certificate has already expir • If the server certificate could not be verified or traced to a root CA certificate. • If any of the intermediate Certificates were not given as input. • If the server's private key is missing or if the server certificate that is uploaded could not be verified with the server's private key. You must contact the CA who issued the certificates to correct these prol before you upload the certificates to CSM. You must verify the certificates using option 4 before you select this optic
5	Upload single server certificate to Server	Select this option, only if there are no intermediate certificates and there the server certificate signed by a prominent Root CA certificate. If the Root CA is not one trusted by CSM, do not select this option. In such cases, you must obtain a Root CA certificate used for signing the certificate from the CA and upload both the certificates using option 6. When you select this option, and provide the location of the certificate, th utility: • Verifies whether the certificate is in Base64 Encoded X.509 certificat format. • Displays the subject of the certificate and the details of the issuing certificate. • Verifies whether the certificate is valid on the server. • Verifies whether the server private key and input server certificate m • Verifies whether the server certificate can be traced to the required R CA certificate which was used for signing. After the verification is successfully completed, the utility uploads the cer to CiscoWorks Server. The utility displays an error: • If the input certificates are not in required format • If the certificate date is not valid or if the certificate has already expir • If the server certificate could not be verified or traced to a root CA certificate. • If the server's private key is missing or if the server certificate that is uploaded could not be verified with the server's private key. You must contact the CA who issued the certificates to correct these prol before you upload the certificates in CSM again. You must verify the certificates using option 4 before you select this optic
6	Upload a certificate chain to Server	Select this option, if you are uploading a certificate chain. If you are also uploading the root CA certificate also, you must include it as one of the certificates in the chain. When you select this option and provide the location of the certificates, th utility: • Verifies whether the certificate is in Base64 Encoded X.509 Certifica format. • Displays the subject of the certificate and the details of the issuing certificate.

		• Verifies whether the certificate is valid on the server • Verifies whether server private key and the server certificate match. • Verifies whether the server certificate can be traced to the root CA certificate which was used for signing. • Constructs the certificate chain, if intermediate chains are given and verifies if the chain ends with the proper root CA certificate. After the verification is successfully completed, the server certificate is uploaded to CiscoWorks Server. All the intermediate certificates and the Root CA certificate are uploaded copied to the CSM TrustStore. The utility displays an error: • If the input certificates are not in required format. • If the certificate date is not valid or if the certificate has already expir • If the server certificate could not be verified or traced to a root CA certificate. • If any of the intermediate certificates were not given as input. • If the server's private key is missing or if the server certificate that is uploaded could not be verified with the server's private key. You must contact the CA who issued the certificates to correct these pro before you upload the certificates in CiscoWorks again.
7	Modify Common Services Certificate	This option allows you to modify the Host Name entry in the Common Se Certificate. You can enter an alternate Hostname if you wish to change the existing H Name entry.



Step 2 Use **Option 1** to get a copy of the current certificate and save it for future reference.

Step 3 Stop the CSM Daemon Manager using this command on Windows Command Prompt before starting the certificate upload process.

```
net stop crmdmgtd
```

> **Note**: CSM services goes down using this command. Make sure there are no deployments active during this procedure.

Step 4 Open SSL Utility one more time. This Utility can be opened using the Command Prompt by navigating to the previously mentioned path and using this command.

```
perl SSLUtil.pl
```

Step 5 Select **Option 4**. **Verify the input Certificate/ Certificate Chain.**

Step 6 Enter the certificates location (server certificate and intermediate certificate).

> **Note**: The script verifies if the server certificate is valid. After the verification is complete, the utility displays the options. If the script reports errors during validation and verification, the SSL Utility displays instructions to correct these errors. Follow the instructions to correct those problems and then try the same option one more time.

Step 7 Select any of the next two options.

Select **Option 5** if there is only one certificate to upload, that is if the server certificate is signed by a Root CA certificate.

OR

Select **Option 6** if there is a certificate chain to upload, that is if there is a server certificate and intermediate certificate.

> **Note**: CiscoWorks does not allow to proceed with the upload if CSM Daemon Manager hasn't been stopped. The utility displays a warning message if there are hostname mismatches detected in the server certificate being uploaded, but the upload can be continued.

Step 8 Enter these required details**.**

- Location of the certificate
- Location of intermediate certificates, if any.

SSL Utility uploads the certificates if all the details are correct and the certificates meet CSM requirements for security certificates.

Step 9 Restart the CSM Daemon Manager for the new change to take effect and enable CSM services.

```
net start crmdmgtd
```

> **Note**: Await for an overall of 10 minutes for all of the CSM services to be re-started.

Step 10 Confirm the CSM is using the identity certificate installed.

> **Note**: Don't forget to install the root and intermediate CA certificates in the PC or server from where the SSL connection is being stablished to the CSM.