Configure Secure Web Appliance GUI Certificate

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Introduction

This document describes the steps to configure certificates for the Secure Web Appliance (SWA) Management Web Interface.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- SWA administration.

Cisco recommends that you have:

- Physical or Virtual SWA installed.

- Administrative Access to the SWA Graphical User Interface (GUI).
- Administrative Access to the SWA Command Line Interface (CLI).

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Web User Interface Certificate

First, choose the type of certificate to use for the SWA management Web User Interface (Web UI).

By default, SWA uses the Cisco Appliance Demo Certificate:

- CN = Cisco Appliance Demo Certificate
- O = Cisco Systems, Inc
- L = San Jose
- S = California
- C = US

You can create a self-signed certificate in SWA or import your own certificate, that has been generated by your Internal Certificate Authority (CA) server.

The SWA does not support including Subject Alternative Names (SAN) when generating a Certificate Signing Request (CSR). Additionally, the SWA self-signed certificates do not support SAN attributes either. To utilize certificates with SAN attributes, you must create and sign the certificate yourself, ensuring that it includes the necessary SAN details. Once you have generated this certificate, you can upload it to the SWA to be used. This approach allows you to specify multiple hostnames, IP addresses, or other identifiers, providing greater flexibility and security for your network environment.

Note: The certificates must include the private key and it must be in PKCS#12 format.

Steps to Modify Web Interface Certificate

Step 1. Log in to GUI and select **Network** from the top menu.

Step 2. Choose **Certificate Management**.

Step 3. From **Appliance Certificates** Select **Add Certificate**.

Step 4. Select Certificate Type (**Self Signed Certificate** or I**mport Certificate**).

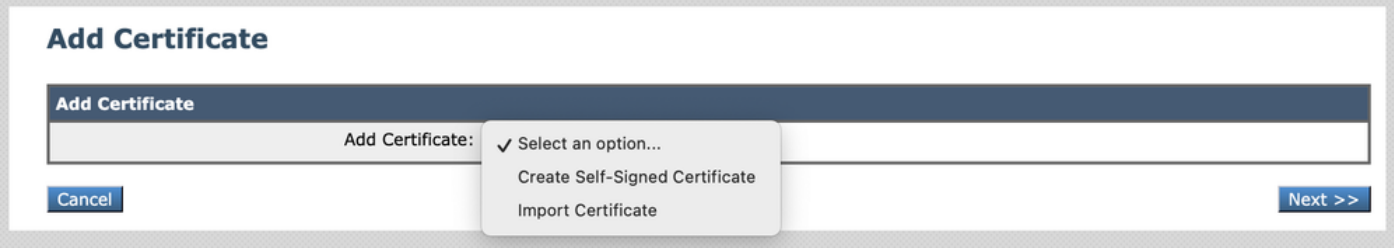


Image - Choose Certificate Type

Step 5. If you select the **Self-Signed Certificate,** use these steps. Otherwise, skip to **Step 6**.

Step 5.1. Complete the fields.

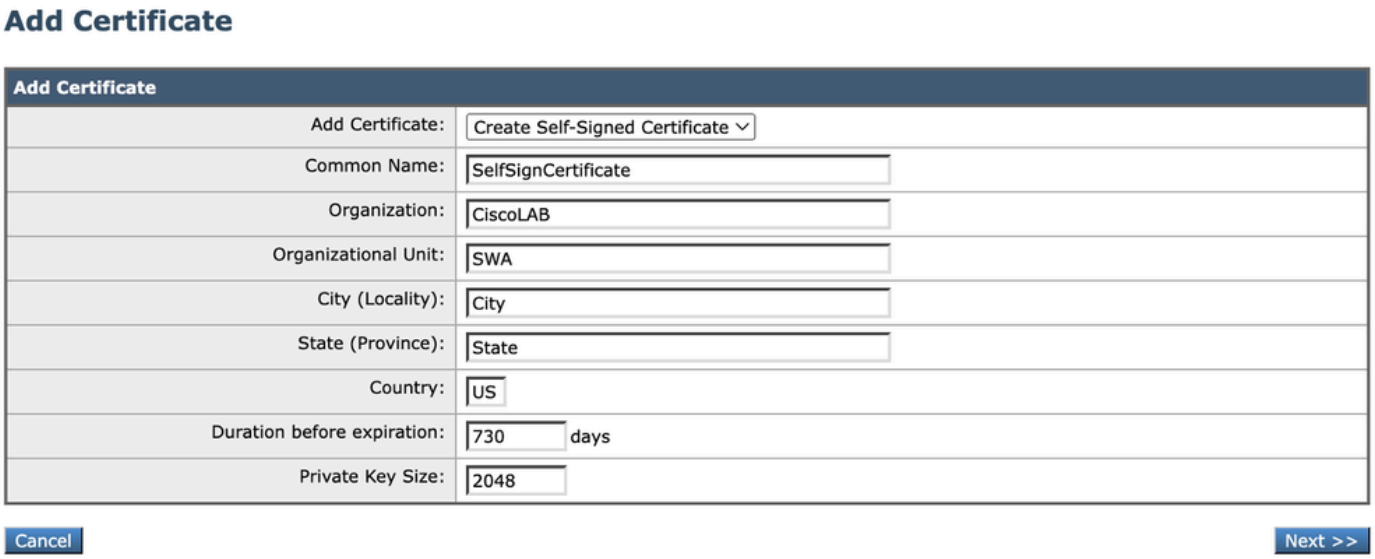


Image - Self Sign Certificate Details

Note: The Private key size must be in the range of **2048** to **8192**.

Step 5.2. Click **Next**.

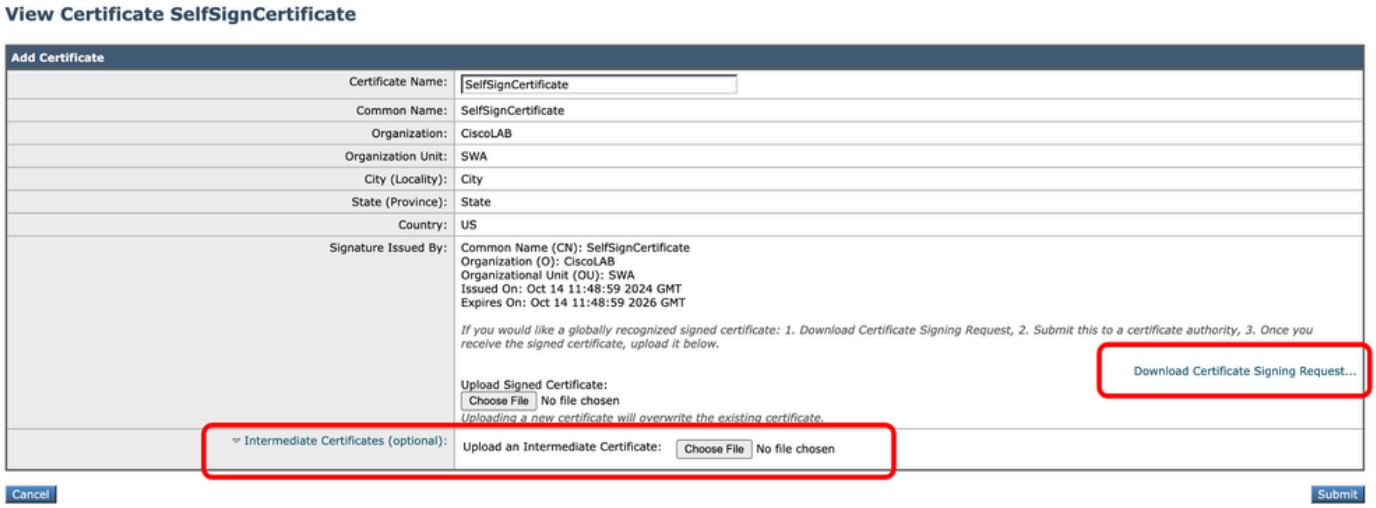


Image - Download CSR

Step 5.3. (Optional) You can download the CSR and sign it with your organization CA Server, then **Upload** the Signed certificate and **Submit.**

⚠ **Caution**: If you would like to sign the CSR, with your CA server, make sure to **Submit** and **Commit** the page before signing or uploading the signed certificate. The profile you created during the CSR generation process includes your private key.

Step 5.4. Submit if the current Self-Signed Certificate is appropriate.

Step 5.5. Skip to **Step 7**.

Step 6. If you choose **Import Certificate**, complete these steps:

Step 6.1. Import Certificate File (PKCS#12 format is required).

Step 6.2. Enter the Password for the Certificate file.

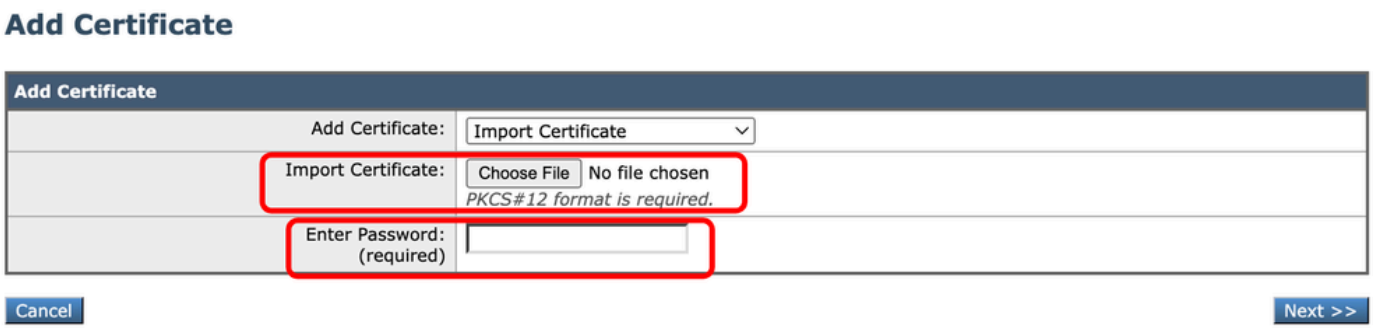


Image - Import Certificate

Step 6.3. Click **Next**.

Step 6.4. Submit changes.

Step 7. Commit Changes.

Step 8. Log in to the CLI.

Step 9. Type **certconfig** and press **Enter**.

Step 10. Type **SETUP**.

Step 11. Type **Y**, then press **Enter**.

Note: When the certificate is changed, administrative users who are currently logged in to the web user interface can experience a connection error and could lose un-submitted changes. This occurs only if the certificate is not already marked as trusted by the browser.

Step 12. Choose **2** to **select from available list of certificates**.

Step 13. Select the number of the desired certificate to use for the GUI.

Step 14. If you have an intermediate certificate and want to add them, type **Y**, otherwise, type **N**.

Note: if you need to add the intermediate certificate, you have to paste the intermediate cert in **PEM format** and **end** with '**.**' (Only **dot**).

```
SWA_CLI> certconfig

Choose the operation you want to perform:
- SETUP - Configure security certificate and key.
- OCSPVALIDATION - Enable OCSP validation of certificates during upload
- RESTRICTCERTSIGNATURE - Enable restricted signature validation of certificates during upload
- OCSPVALIDATION_FOR_SERVER_CERT - Enable OCSP validation for server certificates
- FQDNVALIDATION - FQDN validation for certificate
[]> SETUP

Currently using the demo certificate/key for HTTPS management access.

When the certificate is changed, administrative users who are currently logged in to the web user inter
occurs only if the certificate is not already marked as trusted by the browser.

Do you want to continue? [Y]> Y

Management (HTTPS):
Choose the operation you want to perform:
```

```
1. PASTE - Copy paste cert and key manually
2. SELECT - select from available list of certificates
[1]> 2

Select the certificate you want to upload
1. SelfSignCertificate
2. SWA_GUI.cisco.com
[1]> 1

Do you want add an intermediate certificate? [N]> N

Successfully updated the certificate/key for HTTPS management access.
```

Step 15. Type **commit** to save the changes.

Test the Certificate From Command Line

You can check the certificate using the **openssl** command:

```
openssl s_client -connect <HOSTNAME/FQDN>:<Management_TCP_Port>
```

In this example, the hostname is **SWA.cisco.com** and the management interface is set as default (TCP port 8443).

On the second line in the output, you can see the certificate details:

```
openssl s_client -connect SWA.cisco.com:8443
CONNECTED(00000003)
depth=0 C = US, CN = SelfSignCertificate, L = City, O = CiscoLAB, ST = State, OU = SWA
```

Common Errors

Here are some common errors you can face while trying to create or modify your GUI certificate.

Error Invalid PKCS#12 Format

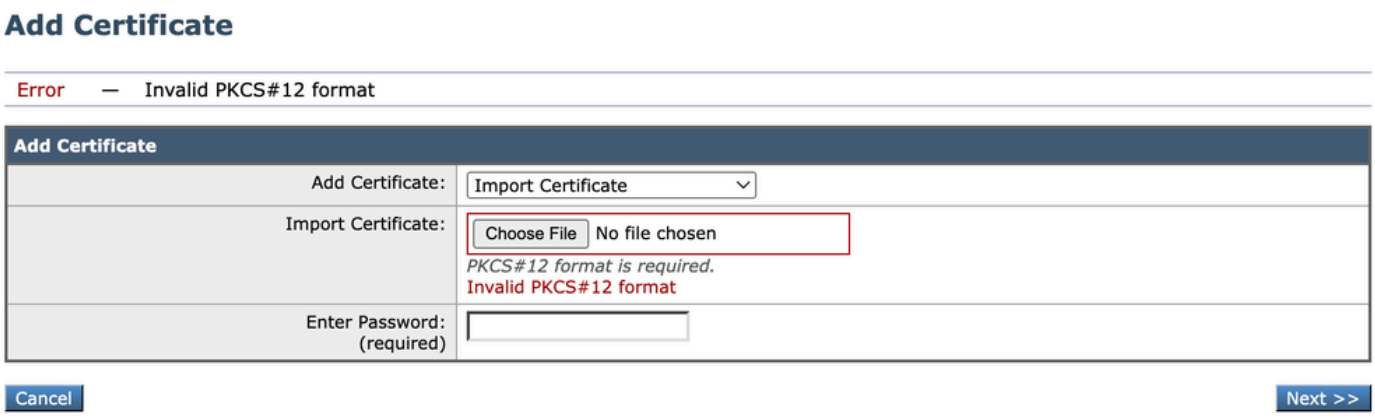


Image - Invalid PKCS#12 format

There could be two causes of this error:

1. The Certificate file is damaged and is not valid.

   Try to open the certificate, if you get an error while opening, you can re-generate or download the certificate again.

2. The CSR that was previously generated is no longer valid.

   When you generate a CSR, you must make sure to **Submit** and **Commit** your changes. The reason is that your CSR was not saved when you logged out or changed pages. The profile that you created when you generated the CSR contains the private key required for successfully uploading your certificate. Once this profile is gone, the private key is gone. Therefore, another CSR must be generated and then once again taken to your CA.

Days Must Be an Integer

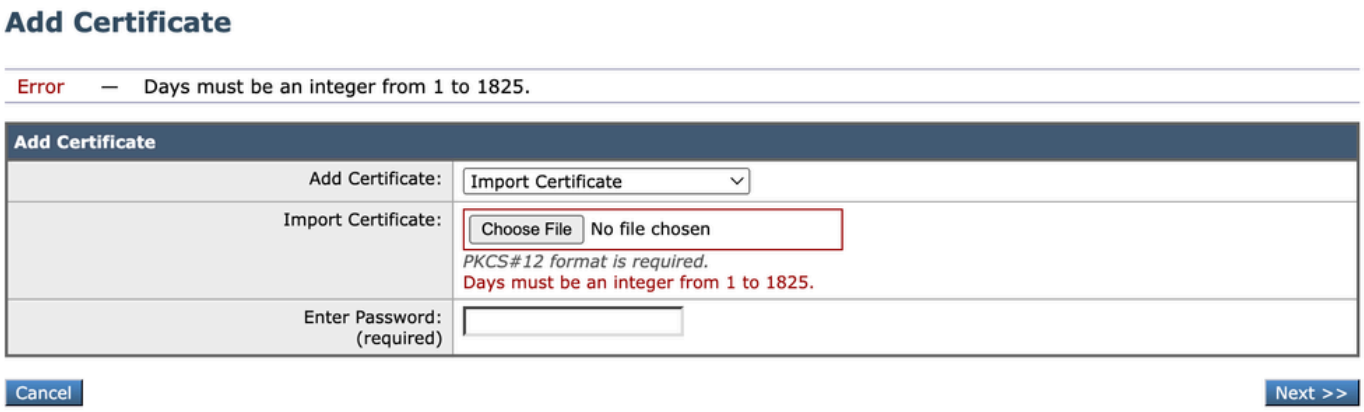


Image - Days Must Be an Integer Error

This error is due to the uploaded certificate being expired or having 0-day validity.

To solve the issue, please check the certificate expiration date and make sure your SWA date and time is correct.

Certificate Validation Error

This error means the Root CA or the Intermediate CA are not added in the Trusted Root Certificate list in SWA. To solve the issue, if you are using both Root CA and Intermediate CA:

1. Upload the Root CA to SWA, then **Commit.**

2. Upload the Intermediate CA, then **Commit** the changes again.

3. Upload your GUI certificate.

Note: To upload the Root or Intermediate CA, from the GUI: **Network.** In the **Certificate Management** section, choose **Manage Trusted Root Certificates.** In **Custom Trusted Root Certificates** click **Import** to upload your CA certificates.

Invalid Password

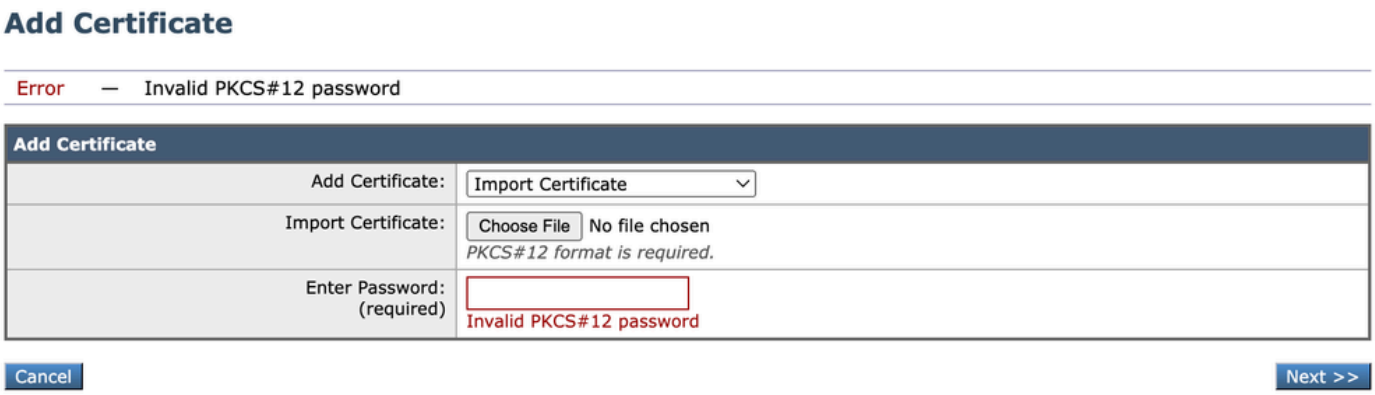


Image - Invalid Password

This error Indicates the PKCS#12 certificate password is incorrect. To solve the error, type the correct password, or regenerate the certificate.

The Certificate is Not Yet Valid

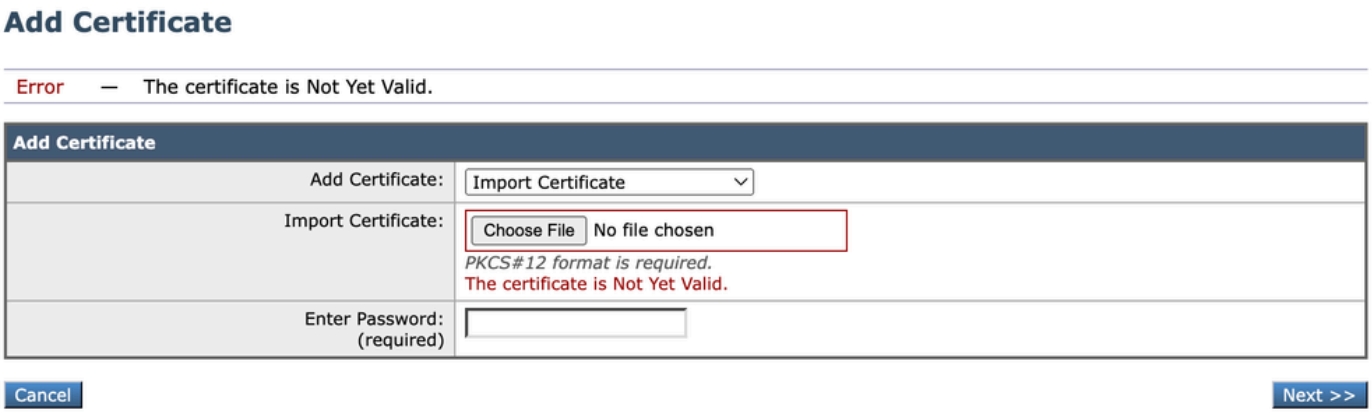


Image - The Certificate is Not Yet Valid

1. Ensure the SWA date and time are correct.

2. Check the certificate date and ensure the "**Not Before**" date and time are correct.

Tip: If you have just generated the certificate, please wait for a minute then upload the certificate.

Restart GUI service from CLI

To restart the WebUI service you can use these steps from CLI:

Step 1. Log in to **CLI**.

Step 2. Type **diagnostic** (This is a hidden command and does not auto type with **TAB**).

Step 3. Choose **SERVICES.**

Step 4. Select **WEBUI.**

Step 5. Choose **RESTART.**

Related Content

- User Guide for AsyncOS 15.0 for Cisco Secure Web Appliance - GD(General Deployment) - Classify End-Users for Policy Application [Cisco Secure Web Appliance] - Cisco