Adobe Acrobat Pro with Entrust Time Stamp Server

nShield® HSM Integration Guide

2024-10-21

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Chapter 1. Introduction

Adobe Acrobat Pro enables users to create, control, and secure Portable Document Format (PDF) documents. Users can also collectively review and edit documents, and convert documents from other formats to PDF.

The integration of Adobe Acrobat Pro with Entrust nShield Time Stamp Server (TSS) performs signing and time-stamping to provide authenticity, integrity and non-repudiation of the document.

TSS is a time-stamp appliance. It uses the industry-standard IETF RFC 3161 protocol to provide time-stamps. TSS also provides a secure auditable trail of time for the purposes of non-repudiation. Adobe Acrobat Pro natively supports the RFC 3161 time-stamp service provided by TSS. Time-stamp a PDF document to validate that document's authenticity at the time it was time-stamped.

nShield Hardware Security Modules (HSMs) integrate with Adobe Acrobat Pro to enable a customer the ability to identify the publisher of a document and to verify that no one has altered the contents or any other aspect of the original document after it has been signed. Digital signatures, such as those used to sign for example Adobe PDF documents, rely on proven cryptographic techniques and the use of one or more private keys to sign and time-stamp the published software. It is important to maintain the confidentiality of these keys.

The benefits of using an HSM with Adobe Acrobat Pro include:

- Protection for the organizational credentials of the software publisher.
- Secure storage of the private key.
- FIPS 140 Level 3 validated hardware.
- Provision of a trusted time-stamp to RFC 1631.

The benefits of TSS include:

- Centrally managed and secured time-stamp appliance.
- FIPS secure and audited link to a master time source.

1.1. Product configurations

Entrust has successfully tested the integration between TSOP - Time Stamp Option Pack (TSS) and Adobe Acrobat Pro in the following configurations:

Software	Version
Operating System	Windows Server 2022
Adobe Acrobat	2024.003.20112
TSOP version (TSS)	8.1.0

1.2. Supported nShield hardware and software versions

We have successfully tested with the following nShield hardware and software versions:

1.2.1. Connect XC

Security World Software	Firmware	Image	OCS	FIPS 140 Level 3
13.6.3	12.72.1 (FIPS 140-2 certified)	12.80.5	✓	✓

Throughout this guide, the term HSM refers to the nShield Connect XC. Other product configurations might work, but not all possible combinations have not been tested by Entrust.

1.3. Requirements

Before setting up the time-stamping functionality, ensure that:

- nShield software and hardware are installed and operational - the server URL of TSS will be needed during the integration process.
- Security World has been created and usable.
- The nShield Time Stamp Option Pack (TSOP) has been installed.
- Required certificates have been imported into the trusted Root CA on the local machine:
  - Signing root certificate.
  - If a third party is used to sign TSA certificates, subordinate certificate(s).

- Adobe Acrobat Pro has been installed.
- Appropriate Administrator rights are available to edit Adobe Acrobat settings options.

This document assumes that:

- Familiar with documentation supplied with TSOP and have installed TSS.
- Familiar with Adobe Acrobat Pro documentation and have installed Adobe Acrobat Pro.

Entrust recommends that you allow only unprivileged connections unless you are performing administrative tasks.

Chapter 2. Procedures

2.1. Install Adobe Acrobat

Please refer to the Adobe Acrobat documentation and install Adobe Acrobat Pro.

2.2. Install the HSM

Install the HSM by following the instructions in the *Installation Guide* for the HSM.

We recommend that you install the HSM before configuring the Security World Software with your TSS Server.

2.3. Install the Security World Software and create the security world

1. On the computer that you want to make the TSS Server, install the latest version of the Security World Software as described in the *Installation Guide* for the HSM.

   We recommend that you uninstall any existing nShield software before installing the new nShield software.

2. Create the security world as described in the *User Guide*, creating the ACS and OCS that you require.

   If you want to use an existing security world for this integration, you can only use it if it was created with the **SEEDebugForAll** feature enabled. This feature is visible in the **world** section of the `nfkminfo` command output. Check the state attribute:

   ```
    state       0x3737000c Initialised Usable Recovery !PINRecovery !ExistingClient RTC NVRAM FTO
   AlwaysUseStrongPrimes !DisablePKCS1Padding !PpStrengthCheck !AuditLogging SEEDebug AdminAuthRequired
   ```

   SEEDebugForAll is not enabled so you have to create or load a new world file with that feature enabled. To create the world, use similar steps as below. The **p dseeall** feature has to be passed to the `new-world` command.

   ```
   % nopclearfail -I -m <module_number>
   % new-world -i -m <module_number> -Q <K/N> --mode=fips-140-2-level-3 --sp80056ar3 p dseeall
   % nopclearfail -O -m <module_number>
   ```

This will create a FIPS-140-2-Level 3 world with the **SEEDebugForAll** feature enabled. When the world gets created, check it using the `nfkminfo` command again.

```
% nfkminfo

```
World
 generation  2
 state       0x3fb7000c Initialised Usable Recovery PINRecovery !ExistingClient RTC NVRAM FTO
AlwaysUseStrongPrimes !DisablePKCS1Padding !PpStrengthCheck !AuditLogging SEEDebugForAll AdminAuthRequired
 n_modules   1
 hknso       387eb6ae7b567f3f22e9ed182ef829d6f7a9d597
 hkm         aaf566a51e4525679f4ee95d3c17a4361ee46185 (type Rijndael)
 hkmwk       c2be99fe1c77f1b75678e2fd2df8dffc0c969bcb
 hkre        3515f4f7000860ed5835673ac202538480fad9a7
 hkra        0f93b48b3706057c4251435675d8b4f6879fe39d
 hkfips      50b8568a944b5bd02ed140048567a278f6763b4a
 hkmc        6f129626e352f87f13f4eedfd7a3567bbc1132ee
 hkp         a2e6f0edc637532306a0a4bfcac598b5676a19e7
 hkrtc       155ce982e5974510f104694b5df59d8ce1567354
 hknv        0efd304fa2e76523b567bc8b1cb709d88835a29f
 hkdsee      a297ab15c34f3c17248556731d16e72f61d1b3a0
 hkfto       55b1b597b76df15610623905679d675cef8bdb33
 hkmnull     01000000000000000000000000011100000000000
 ex.client   none
 k-out-of-n  1/1
 other quora m=1 r=1 p=1 nv=1 rtc=1 dsee=1 fto=1
 createtime  2024-09-30 13:51:44
 nso timeout 10 min
 ciphersuite DLf3072s256mAEScSP800131Ar1
 min pp      0 chars
 mode        fips1402level3

Module #1
 generation 2
 state      0x2 Usable
 flags      0x10000 ShareTarget
 n_slots    6
 esn        1000-0000-0000
 hkml       3f0b8a828e30f7d02432d65673210816090d9551
```

SEEDebugForAll is now enabled.

3. Check the world status before continuing:

```
% nfkmcheck
```

For an unrestricted (FIPS 140-2 level 2) security world, the output should resemble the following:

```
nfkmcheck: information: Module #1 Slot #0 Empty
nfkmcheck: everything seems to be in order
```

For a strict FIPS (FIPS 140-2 level 3) security world, the output should resemble the following:
```

```
nfkmcheck: information: World requires administrator authorization
nfkmcheck: information: Module #1 Slot #0 Empty
nfkmcheck: everything seems to be in order
```

2.4. Make sure the HSM time is synced with the TSS Server

`rtc` is a command available from the security world installation, so you need to have `C:\Program Files\nCipher\nfast\bin` in your path.

Do this from a PowerShell prompt in your TSS server.

1. Open up a PowerShell prompt.
2. Type `rtc` and you will see the current time set on your HSM.

```
% rtc

time on module 1 is 2015-01-13 00:38:30 Pacific Standard Time
```

3. If the time is not correct, then run the command `rtc -t -m1` and you will be prompted to enter your ACS.

```
% rtc -t -m1

Load Admin Card (for KRTC):
 Module 1 slot 0: Admin Card #11
 Module 1 slot 2: empty
 Module 1 slot 3: empty
 Module 1 slot 4: empty
 Module 1 slot 5: empty
 Module 1 slot 0:- passphrase supplied - reading card
Card reading complete.

clock on module 1 set to 2024-09-26 13:22:24 Pacific Daylight Time
```

4. Your HSM time should now be synced to your TSS server time if it wasn't already.

```
%  rtc
time on module 1 is 2024-09-26 13:26:13 Pacific Daylight Time
```

2.5. Enable HSM features

To enable features in the HSM you need to get a Feature Enabling smart card into a smart-card-reader connected to the Time Stamp Server, or get a feature file that

can be used to enable the features. Please contact Entrust support for this. You need to provide HSM ESN to get the feature file for the HSM.

You need to enable the following HSM features:

- SEE Activation (Restricted)

  Enables the Time Stamp Server to perform specific tasks using the SEE.

- Elliptic Curve algorithms

  If you are intending to use ECDSA-based keys.

Enable the features in a PowerShell window:

1. Make sure `C:\Program Files\nCipher\nfast\bin` is in your path.
2. If you are using a smart card:

   Insert the Feature Enabling smart card into a smart-card reader connected to the Time Stamp Server.

3. If you are using a feature file:

   Transfer the file to the Time Stamp Server.

4. Start the Feature Enable Tool to see what features are enabled.

   Run the following command:

```
% fet

                        Feature Enable Tool
                        ===================

                     ISO Smart Card Support
                     |  Remote Operator
                     |  |  Korean Algorithms
                     |  |  |  SEE Activation (EU+10)
                     |  |  |  |  SEE Activation (Restricted)
                     |  |  |  |  |  SEE Activation, CodeSafe 5
                     |  |  |  |  |  |  Elliptic Curve algorithms
                     |  |  |  |  |  |  |  Elliptic Curve MQV
                     |  |  |  |  |  |  |  |  Fast RNG for ECDSA
                     |  |  |  |  |  |  |  |  |  HSM Speed Rating
Mod   Electronic     |  |  |  |  |  |  |  |  |  |
No.  Serial Number
 1  5F08-02E0-D947 -- N  Y  N  N  N  N  Y  Y  N  Mid Speed

0. Exit Feature Enable Tool.
1. Read FEM certificate(s) from a smart card or cards.
2. Read FEM certificate from a file.
3. Read FEM certificate from keyboard.
4. Write table to file.

Enter option :
```

5. Select **2** to read the feature certificate from a file.

   You can also choose the option to read the FEM certificate from a smart card if that's what you are using. Follow the onscreen instructions. After the feature is enabled, the system returns a success message.

```
Enter option : 2
Enter filename: sunrisecgt2-1727383407_SEEU_5F08-02E0-D947.txt
Opened file named `sunrisecgt2-1727383407_SEEU_5F08-02E0-D947.txt' for reading successfully.
Found FEM Certificate - presenting to module ...

                        Feature Enable Tool
                        ===================

                     ISO Smart Card Support
                     |  Remote Operator
                     |  |  Korean Algorithms
                     |  |  |  SEE Activation (EU+10)
                     |  |  |  |  SEE Activation (Restricted)
                     |  |  |  |  |  SEE Activation, CodeSafe 5
                     |  |  |  |  |  |  Elliptic Curve algorithms
                     |  |  |  |  |  |  |  Elliptic Curve MQV
                     |  |  |  |  |  |  |  |  Fast RNG for ECDSA
                     |  |  |  |  |  |  |  |  |  HSM Speed Rating
Mod   Electronic     |  |  |  |  |  |  |  |  |  |
No.  Serial Number
 1  5F08-02E0-D947 -- N  Y  N  N  Y  N  Y  Y  N  Mid Speed

0. Exit Feature Enable Tool.
1. Read FEM certificate(s) from a smart card or cards.
2. Read FEM certificate from a file.
3. Read FEM certificate from keyboard.
4. Write table to file.

Enter option : 0
```

   If you do not enable the `SEE Activation (Restricted)` feature, the Time Stamp Server cannot load the SEE machine. As a result, the Operation Status page of the Time Stamp Server web interface returns the error message `SEE_LoadMachineFailure`.

2.6. Install the Java Runtime Environment (JRE)

Install a 32 bit Standard Edition Java Runtime Environment(JRE) version 1.8. Once installed, open a PowerShell and check the version:

```
PS C:\Users\Administrator> java -version
java version "1.8.0_421"
Java(TM) SE Runtime Environment (build 1.8.0_421-b09)
Java HotSpot(TM) Client VM (build 25.421-b09, mixed mode, sharing)
```

Look for the output line that starts with Java™ SE Runtime Environment. It will indicate the architecture:

- If it mentions 64-Bit, you are running a 64-bit version of Java.
- If it does not mention 64-Bit, it is a 32-bit version.

2.7. Install the Time Stamp Option Pack

1. Transfer the TSOP iso file to the TSS server.
2. Run the installer.
    a. Open the iso file and launch the `setup.msi` installer.
    b. Click Next to continue. The installer displays the license agreement.
    c. Accept the license agreement.
    d. The install process will automatically detect the location of the Security World Software installation and will install alongside this.
    e. When prompted, enter the port settings for the HTTP and HTTPS protocols. (If not sure, leave as default - Ports: 80 and 443)
    f. Follow the installer instructions until the installation process is complete.
3. Open up the HTTP and HTTPS ports in the firewall.

    Make sure the ports used during the installation (80/443 by default) are open in the windows firewall.

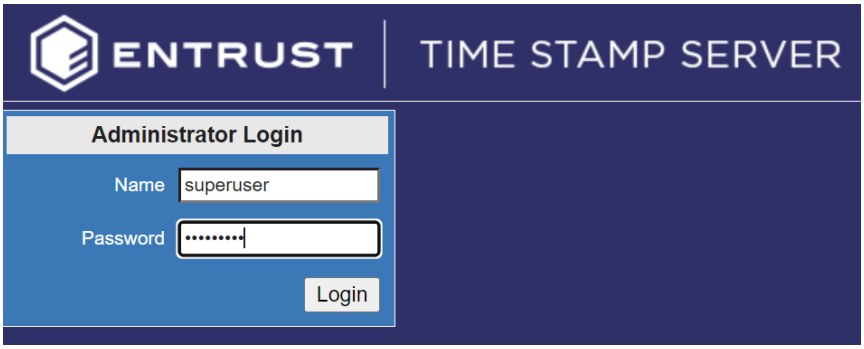
2.8. Access the Time Stamp Server Web Interface

You can use the `localhost` or the *TSS server IP address for the Time Stamp Server web interface URL. For example: `https://localhost/TSS/index.jsp`.

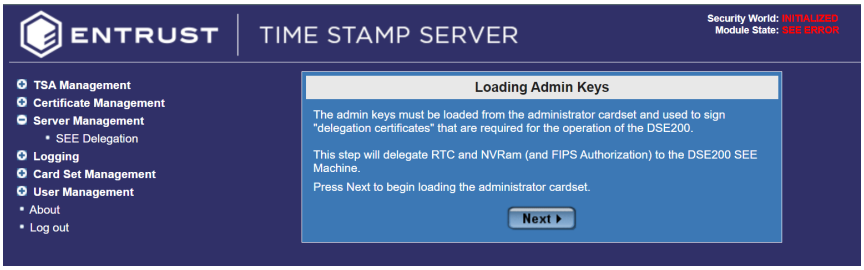
Keep in mind the firewall ports have to be open if you want access the URL from another host besides the TSS server and `localhost` has to be replaced with the IP or FQDN of the TSS server. Check the TSOP user's manual for default login credentials.

2.9. Activate SEE Delegation

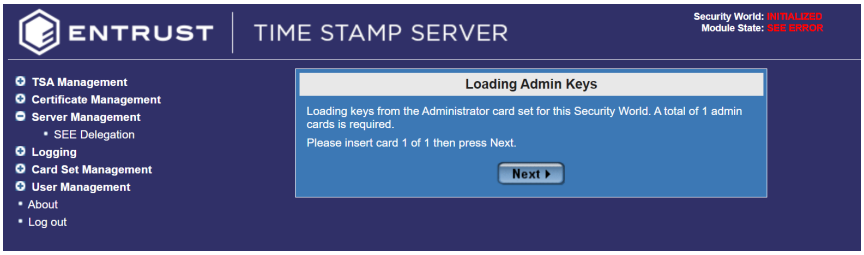
1. Log in to the TSS server as the security officer.



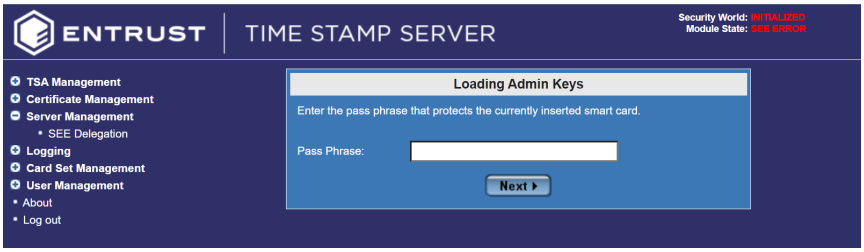
2. Select **Server Management > SEE Delegation**.



3. Select **Next**.
4. In the **Loading Admin Keys** dialog, select **Next**.

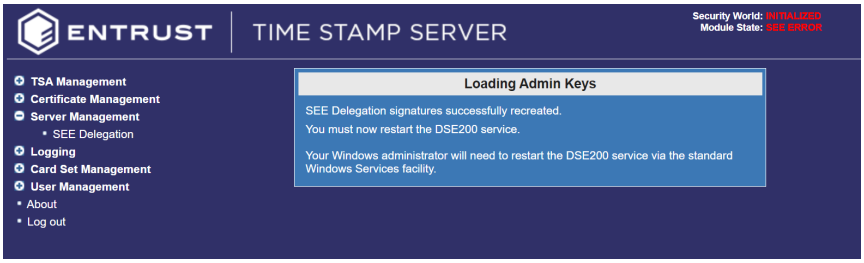


5. Enter the credentials for the Admin Card.



6. The system will ask you to reset your DSE200 Service.

   Go to windows search bar and search for **Services**. Find the **DSE200** service and restart it.

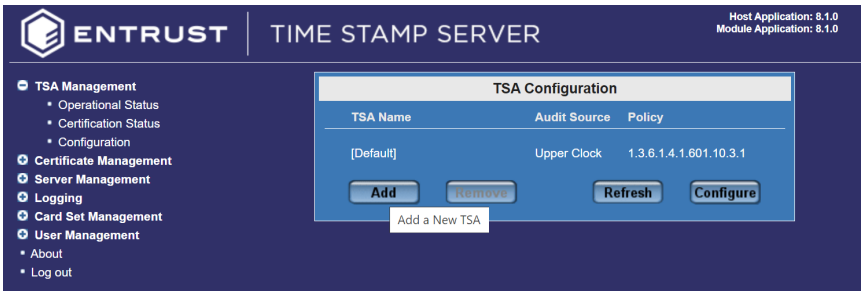


7. After you reset the DSE200 service, you will be asked to log in again to the TSS server.

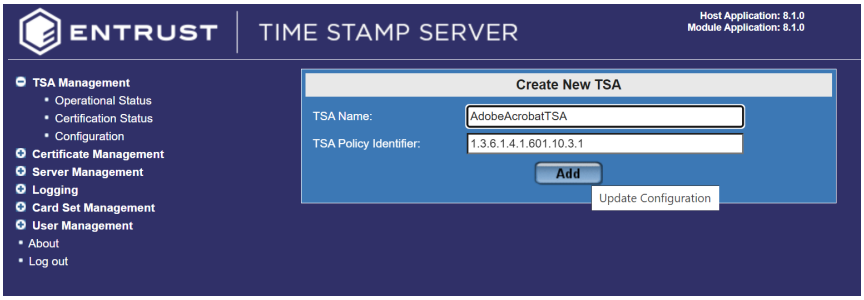
2.10. Create a new TSA

Create a new TSA to be used for this integration.

1. Log in to the TSS server as the security officer.
2. Select **TSA Management > Configuration**, then select **Add**.

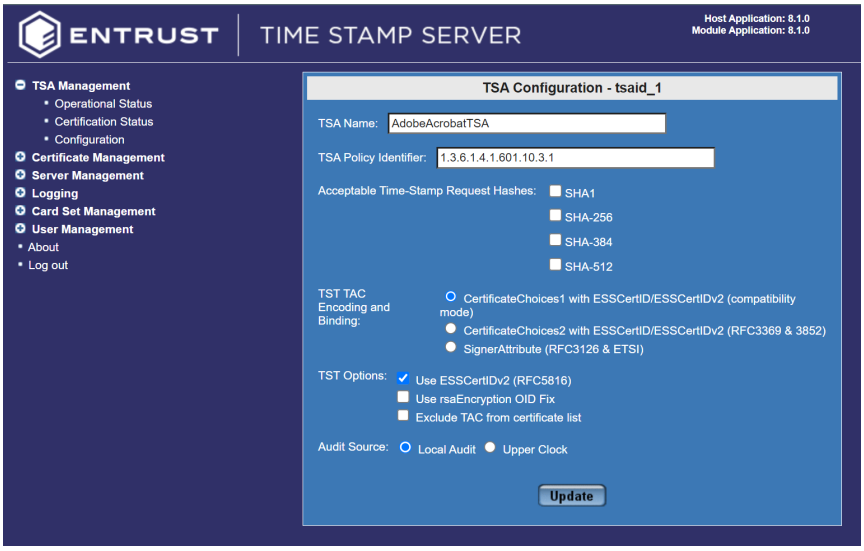


3. Enter a name for the TSA and the TSA policy identifier (make sure it is a different number - just increase it by one), then select **Add**.

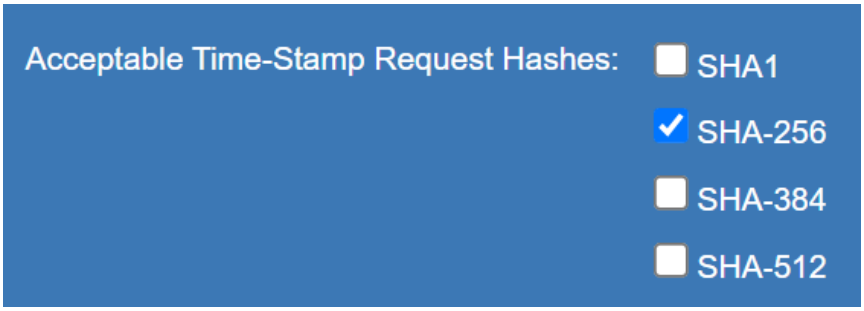


When you are asked to confirm, select **OK**.

4. Take the default settings for the TSA Configuration fields.

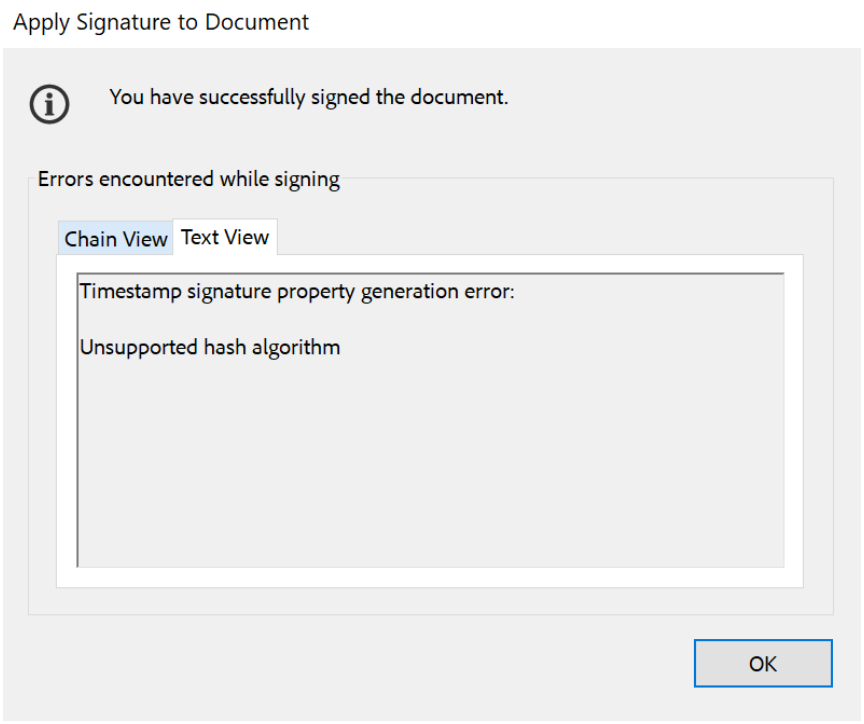


Make sure you select one of the **Acceptable Time-Stamp Request Hashes**. This must match the Signature Hash Algorithm that will be used by the Adobe Acrobat Digital ID certificate of the Digital ID used when signing documents. In this case is **SHA-256**.



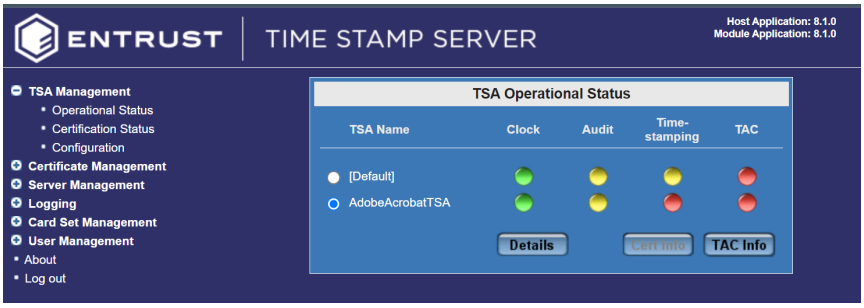
If you need to change any of the fields, make the changes and click **Update** to confirm the details of the TSA.

If the selected **Acceptable Time-Stamp Request Hash** does not match the Adobe Acrobat Digital ID Certificate Signature Hash Algorithm, you will get an error message like the one bellow when you sign a document in Adobe Acrobat:



5. After creating the new TSA, Select **TSA Management > Operational Status**.

   You will see the new TSA with green, yellow, and red lights at first.



2.11. Create the OCS

You can do this using the command line or through the Time Stamp Server user interface.

2.11.1. Create the OCS using the command line

This should be done in a PowerShell window.

1. Make sure `C:\Program Files\nCipher\nfast\bin` is in your path.
2. Run the following command, specifying the module and slot where the blank card is located.

```
% createocs -m<module_number> -s<slot_number> --persist -Q (K/N) -N <ocs_card_name>
```

Here is an example:

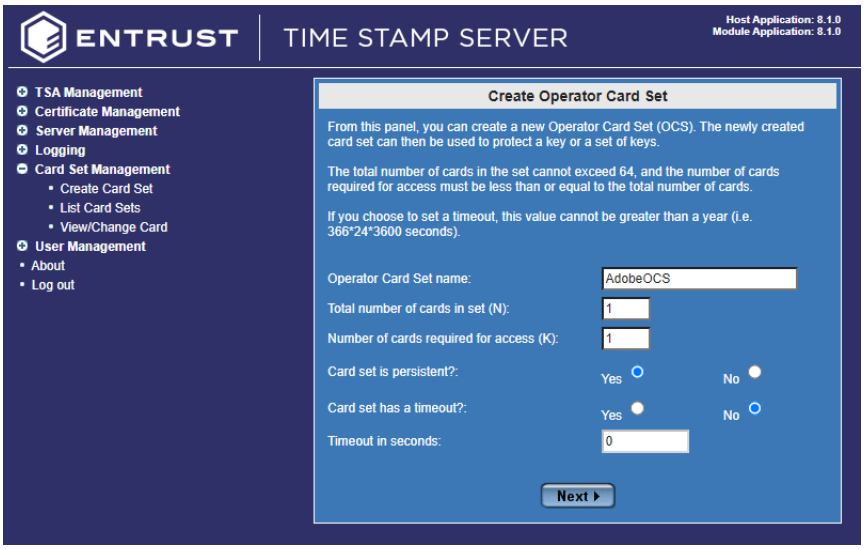
```
% createocs -m1 -s2 --persist -Q 1/1 -N testOCS

FIPS 140-2 level 3 auth obtained.

Creating Cardset:
 Module 1: 0 cards of 1 written
 Module 1 slot 0: Admin Card #1
 Module 1 slot 2: blank card
 Module 1 slot 3: empty
 Module 1 slot 4: empty
 Module 1 slot 5: empty
 Module 1 slot 2:- passphrase specified - writing card
Card writing complete.

cardset created; hkltu = c4877dce6de6ed55e3da9474886df22d58b85e39
```

2.11.2. Create the OCS using the Time Stamp Server Web interface

To be able to create an OCS using the TSS server web interface, you will have to provide the card to the HSM in the front slot of the HSM.

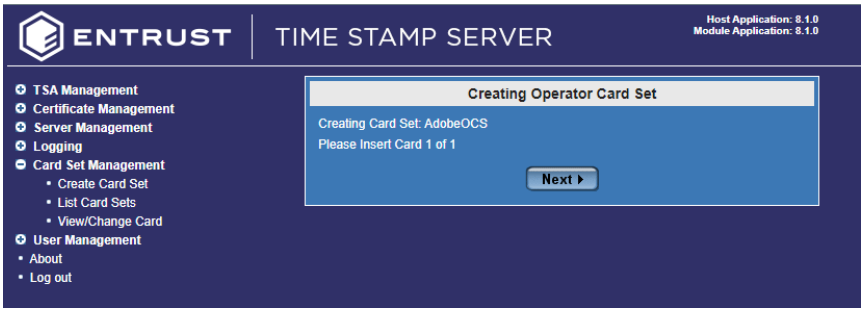
1. Log in to the TSS server as the security officer.
2. Navigate to **Card Set Management > Create Card Set**.

   The **Create Operator Card Set** dialog opens. Fill in the information accordingly: Operator Card Set name, Total number of cards in set (N), Number of cards required for access, Card set is persistent, Card set has a timeout, Timeout in seconds.



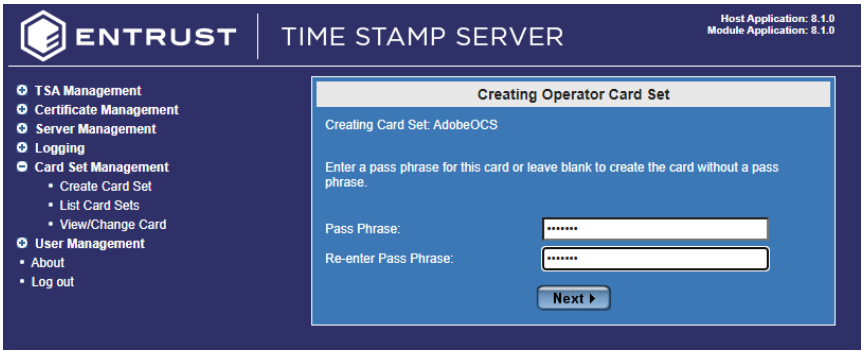
3. Select **Next**.

   The next dialog will ask you to insert the card. Go to the HSM and insert the card in the front slot.



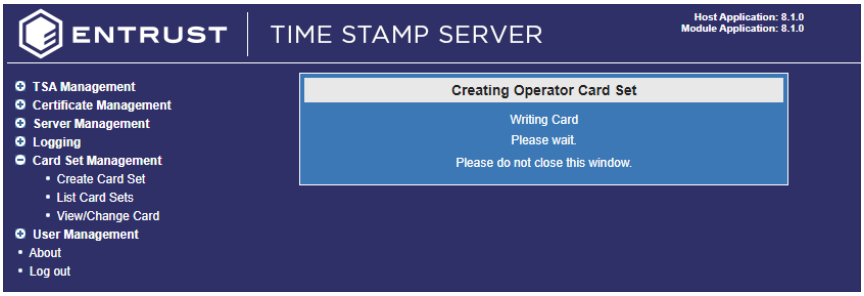
4. Select **Next**.

   The next dialog will ask for the OCS passphrase. For each card, follow the onscreen instructions to either set a passphrase for the card or to create a card without a passphrase.

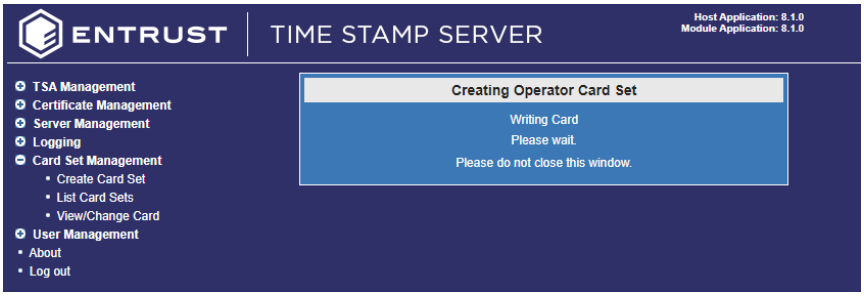


5. Select **Next**.

   The dialog will ask you to wait until the creation of the card is complete.



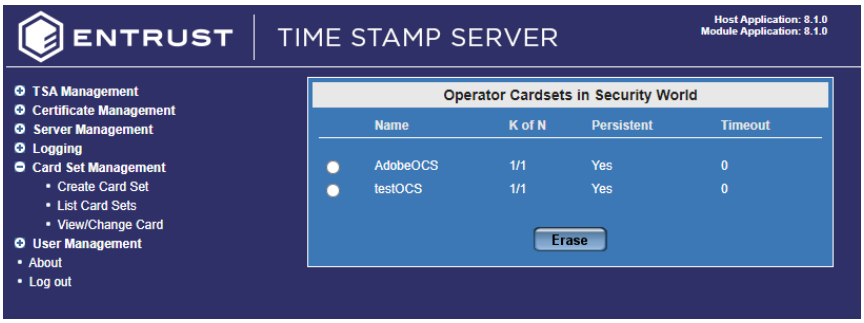
6. The Card Set creation completes successfully



2.11.3. List available card sets

To view the available card sets in the Time Stamp Server:

1. Log in to the TSS server as the security officer.
2. Navigate to **Card Set Management > List Card Sets**.

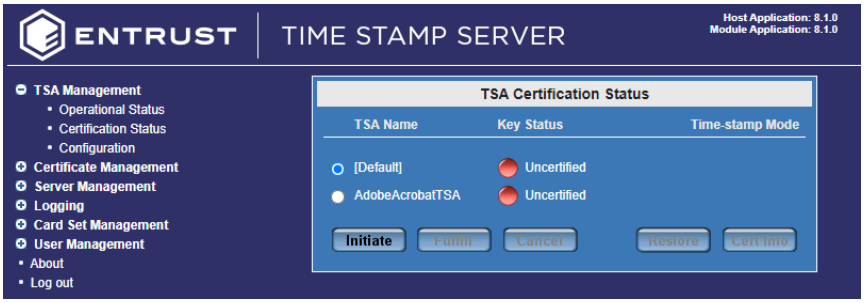


You should be able to see the two cards that we created:

- one using the command line
- one using the TSS web interface

2.12. Initiate a TSA certificate request

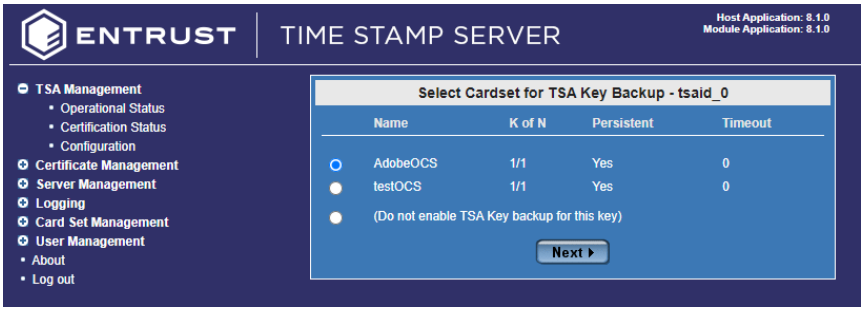
1. Log in to the TSS server as the security officer.
2. Go to **TSA Management > Certification Status**.



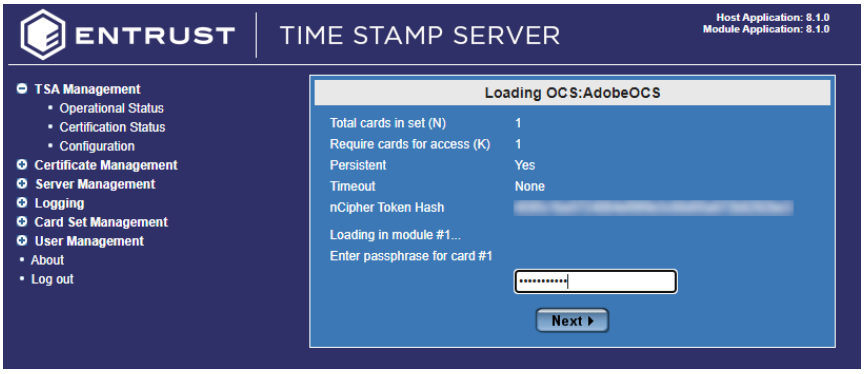
3. Select the TSA created earlier.

4. Select **Initiate**.

   The **Select Card Set for TSA Key Backup** dialog windows comes up. Select the Card Set you want to use. Enable TSA Key Backup if you want (not necessary). Select **Next**.

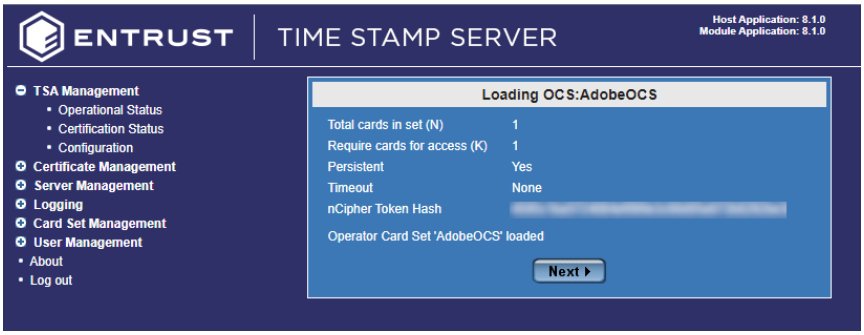


5. The **Loading OCS** dialog appears. Enter your OCS card passphrase.

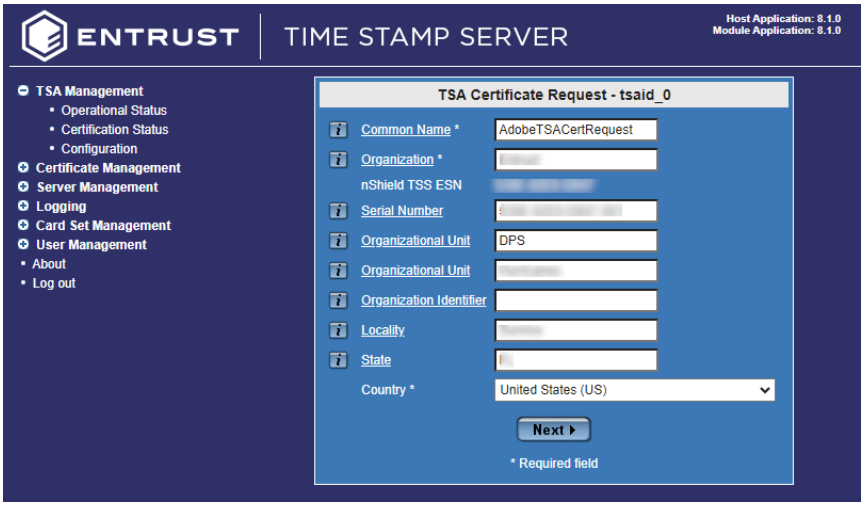


6. Select **Next**.

   The OCS Card gets loaded.

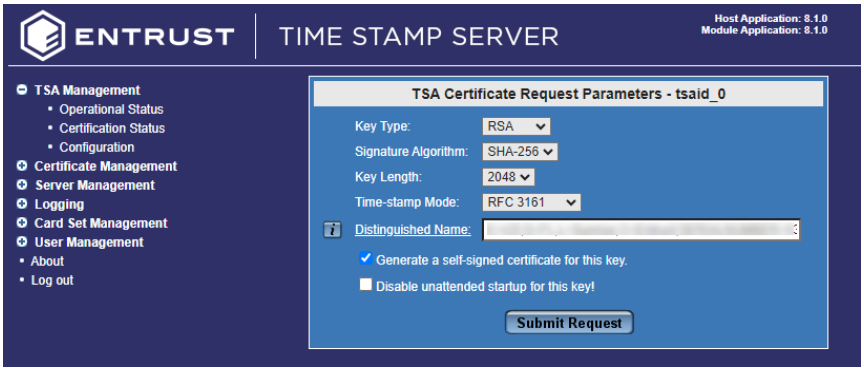


7. Select **Next**.
8. Enter in the Certificate Request details.



9. Select **Next**. When you are asked to confirm, select **OK**.

   The **TSA Certificate Request Parameters** window comes up. Check the box that says **Generate a self-signed certificate for this key**.



10. Select **Submit Request**.

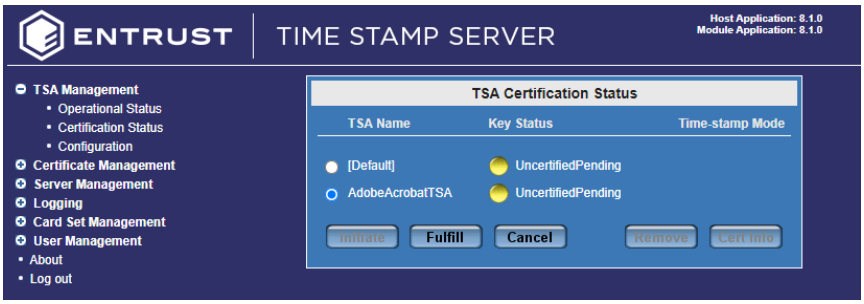
    The **TSA Self Signed Certificate** gets displayed.

11. Select **Select All** to copy the contents of the certificate.

    Copy and paste all the contents into a file and save the file. Make sure the file

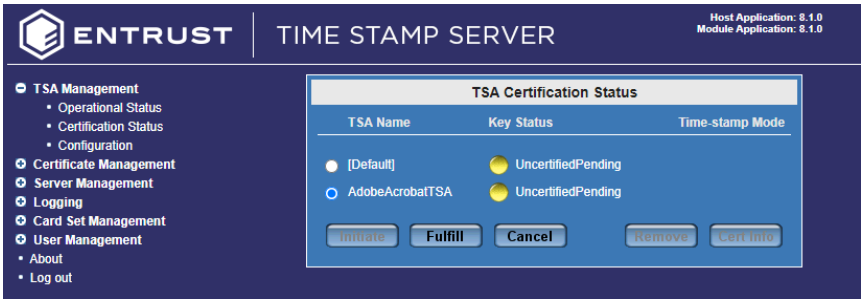
name has a `.cer` extension.

12. Select **TSA Management > Certificate Status** again, your new TSA should look similar to the one below:

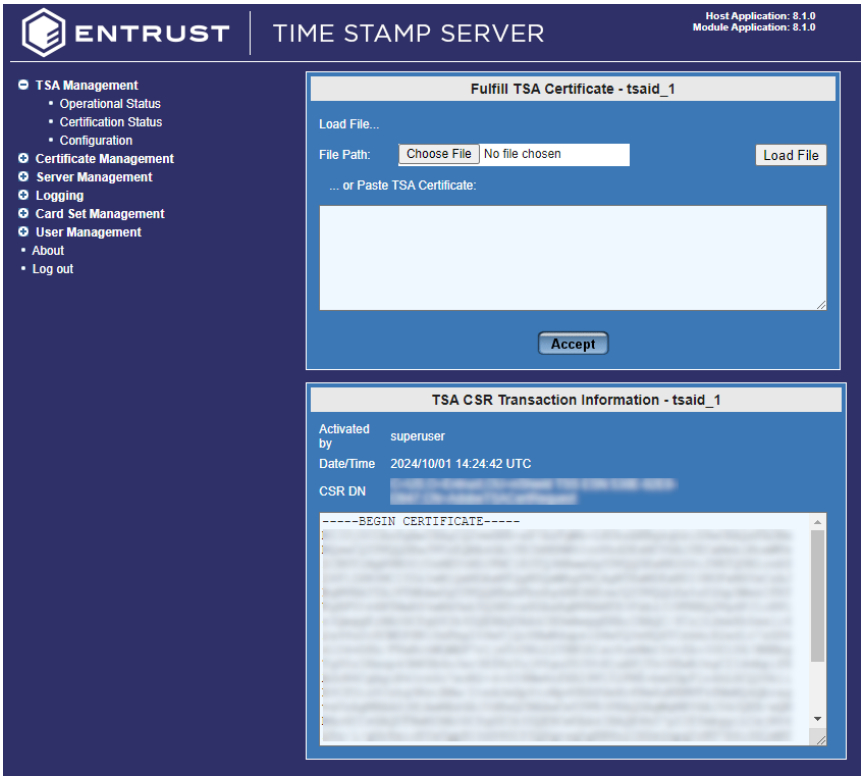


2.13. Fulfil a TSA certificate request

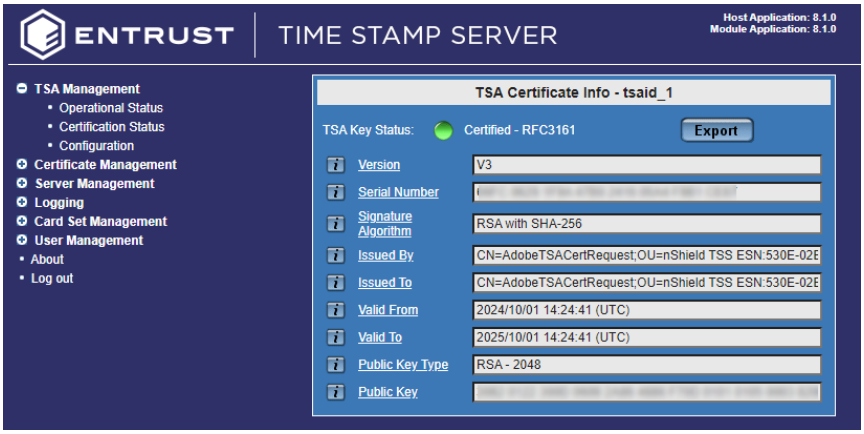
1. Log in to the TSS server as the security officer.
2. Select **TSA Management > Certificate Status**
3. Select the TSA you just created and select **Fulfill**.



4. Select **Choose File** and select the certificate text file created earlier with the contents of the TSA self signed certificate.



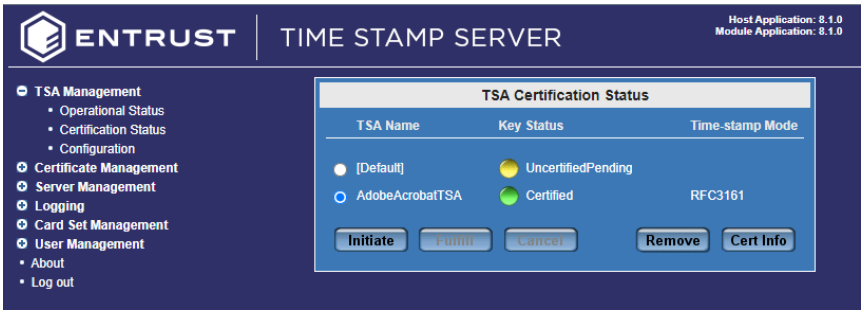
5. Select **Accept**.
6. Your TSA should now be certified.



7. Restart your DSE200 Service

> You must restart the DSE200 Service.

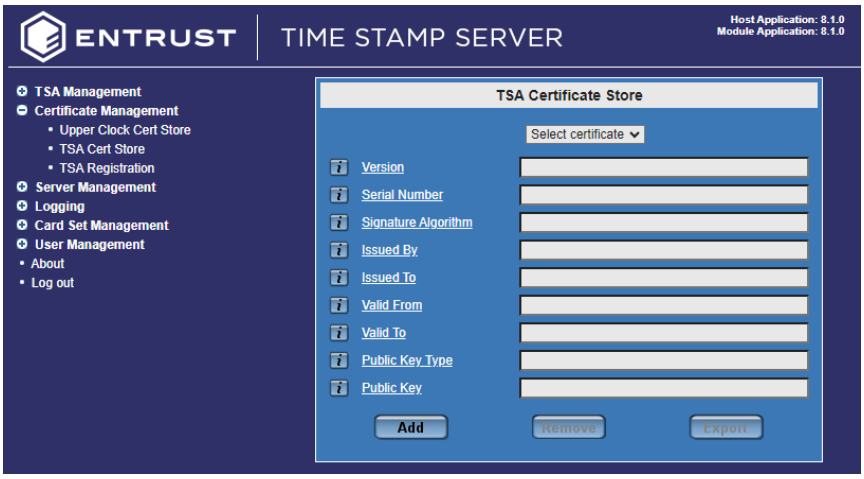
8. Log out and log back in as the superuser.
9. Navigate to **TSA Management > Certification Status** and your TSA should have a green light.



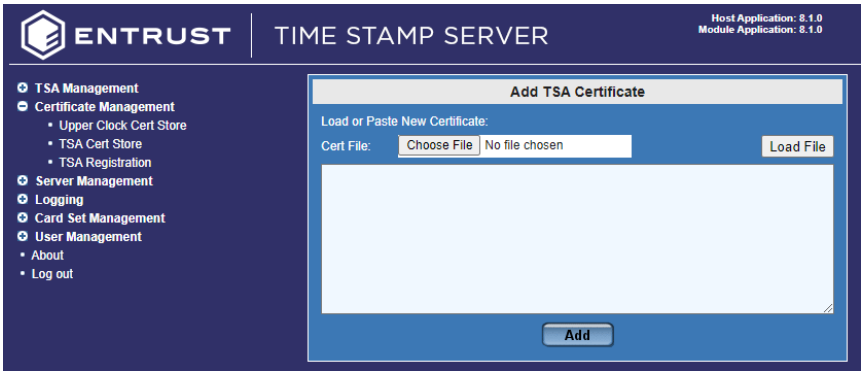
2.14. Import the TSA certificate chain

1. Log in to the TSS server as the security officer.
2. Navigate to **Certificate Management > TSA Cert Store**.

   The **TSA Certificate Store** dialog opens.



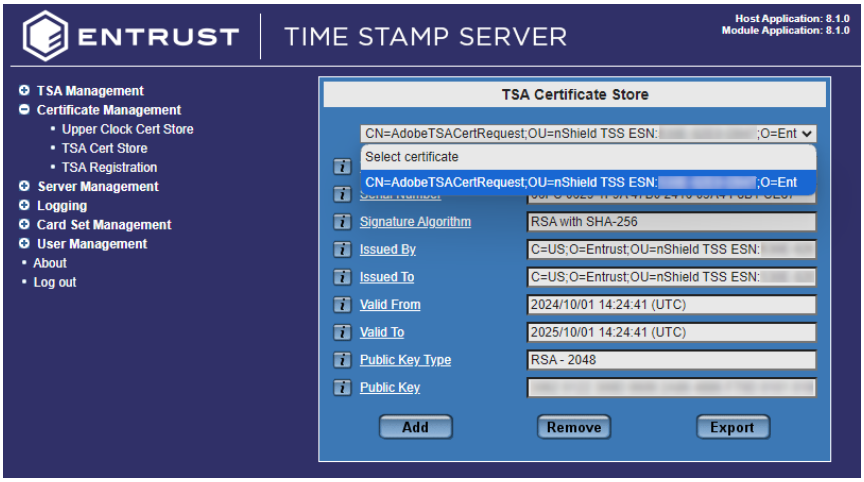
3. Select **Add**. The **Add TSA Certificate** dialog opens.



4. Select **Choose File**. Browse and locate the certificate file you saved in the previous section. Select **Load File**.
5. Select **Add**.

6. Select again **Certificate Management > TSA Cert Store**.

   In the **Select certificate** drop down, you should see the certificate that got imported.



2.15. Install and configure the Windows 2022 NTP server

If you have selected **Local Audit** as the method by which the TSS secure clock is to be audited, this requires a running Network Time Protocol (NTP) service which has been configured to use an NTP server on the local network. Configuration of an NTP service requires a Windows Administrator to log in to the System Console. Do this in a PowerShell window running as Administrator:

1. Confirm current setting (follows are default settings):

```
% Get-ItemProperty -Path "HKLM:\SYSTEM\CurrentControlSet\Services\w32time\TimeProviders\NtpServer"

AllowNonstandardModeCombinations : 1
ChainDisable                     : 0
ChainEntryTimeout                : 16
ChainLoggingRate                 : 30
ChainMaxEntries                  : 128
ChainMaxHostEntries              : 4
DllName                          : C:\Windows\system32\w32time.dll
Enabled                          : 0
EventLogFlags                    : 0
InputProvider                    : 0
RequireSecureTimeSyncRequests    : 0
PSPath                           :
Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\w32time\TimeProvid
ers\NtpServer
PSParentPath                     :
Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\w32time\TimeProvid
ers
PSChildName                      : NtpServer
PSDrive                          : HKLM
PSProvider                       : Microsoft.PowerShell.Core\Registry
```

2. Enable NTP Server feature.

```
% Set-ItemProperty -Path "HKLM:\SYSTEM\CurrentControlSet\Services\w32time\TimeProviders\NtpServer" -Name
"Enabled" -Value 1
```

3. Set `AnnounceFlags` to 5.

```
% Set-ItemProperty -Path "HKLM:\SYSTEM\CurrentControlSet\services\W32Time\Config" -Name "AnnounceFlags"
-Value 5
```

4. Restart the Windows Time service.

```
% Restart-Service w32Time
```

5. If Windows Firewall is running, allow the NTP port:

```
% New-NetFirewallRule `
-Name "NTP Server Port" `
-DisplayName "NTP Server Port" `
-Description 'Allow NTP Server Port' `
-Profile Any `
-Direction Inbound `
-Action Allow `
-Protocol UDP `
-Program Any `
-LocalAddress Any `
-LocalPort 123

Name                          : NTP Server Port
DisplayName                   : NTP Server Port
Description                   : Allow NTP Server Port
DisplayGroup                  :
Group                         :
Enabled                       : True
Profile                       : Any
Platform                      : {}
Direction                     : Inbound
Action                        : Allow
EdgeTraversalPolicy           : Block
LooseSourceMapping            : False
LocalOnlyMapping              : False
Owner                         :
PrimaryStatus                 : OK
Status                        : The rule was parsed successfully from the store. (65536)
EnforcementStatus             : NotApplicable
PolicyStoreSource             : PersistentStore
PolicyStoreSourceType         : Local
RemoteDynamicKeywordAddresses : {}
PolicyAppId                   :
```

6. Confirm current synchronization with the NTP server.

   By default, Windows configures the NTP client with NTP server **time.windows.com**.

```
% w32tm /query /source
time.windows.com,0x8
```

7. (Optional) Change the target NTP server.

   Example:

```
% Set-ItemProperty -Path "HKLM:\SYSTEM\CurrentControlSet\Services\w32time\Parameters" -Name "NtpServer"
-Value "ntp.nict.jp,0x8"
```

8. Restart the Windows time service.

```
% Restart-Service w32Time
```

9. Re-sync manually.

```
% w32tm /resync
Sending resync command to local computer
The command completed successfully.
```

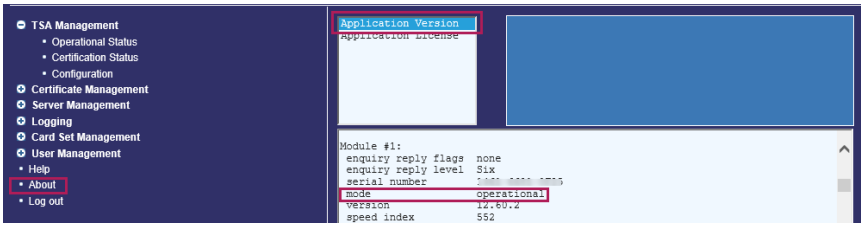
10. Verify the status.

```
% w32tm /query /status
Leap Indicator: 0(no warning)
Stratum: 4 (secondary reference - syncd by (S)NTP)
Precision: -23 (119.209ns per tick)
Root Delay: 0.0543284s
Root Dispersion: 0.0474017s
ReferenceId: 0xA83DD74A (source IP:  168.61.215.74)
Last Successful Sync Time: 10/1/2024 8:37:03 AM
Source: time.windows.com,0x8
Poll Interval: 7 (128s)
```

2.16. Check the status of TSS and the security world

Before proceeding to the Adobe Acrobat setup, check the status of TSS and the security world:

1. Ensure that your TSA is healthy and operational. To do, this, access the **TSA Operational Status** page, and check that the TSA shows all green lights. If you do not have all green lights after creating a new certificate, then try restarting the DSE200 service.
2. Ensure that the security world is operational and healthy:



a. On the left, select **About**.

b. Select **Application Version**.

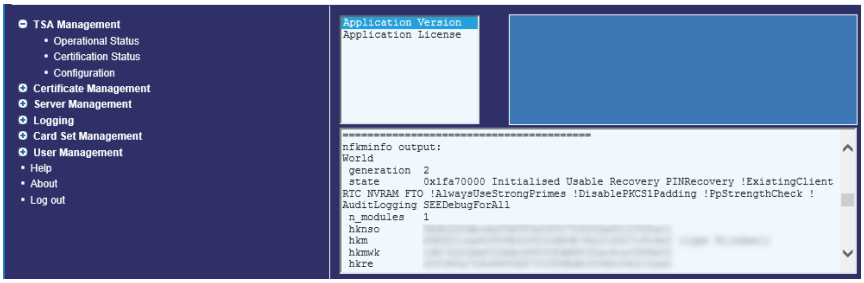
c. Scroll down to show **Module 1#**.

   The **mode** should show as **operational**.

3. Continue to scroll down to **nfkminfo output: World**.

   The **state** should show as **Initialised** and **Usable**. There should be no exclamation marks (**!**).

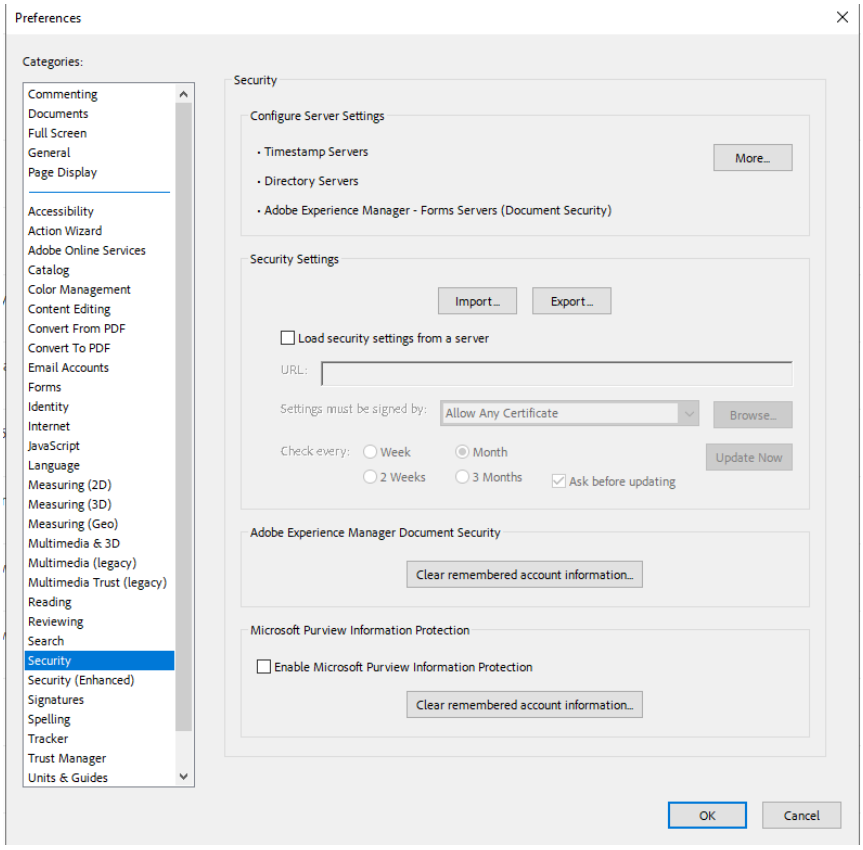
   If either properties are preceded by an **!**, ensure that the security world is available and operational.



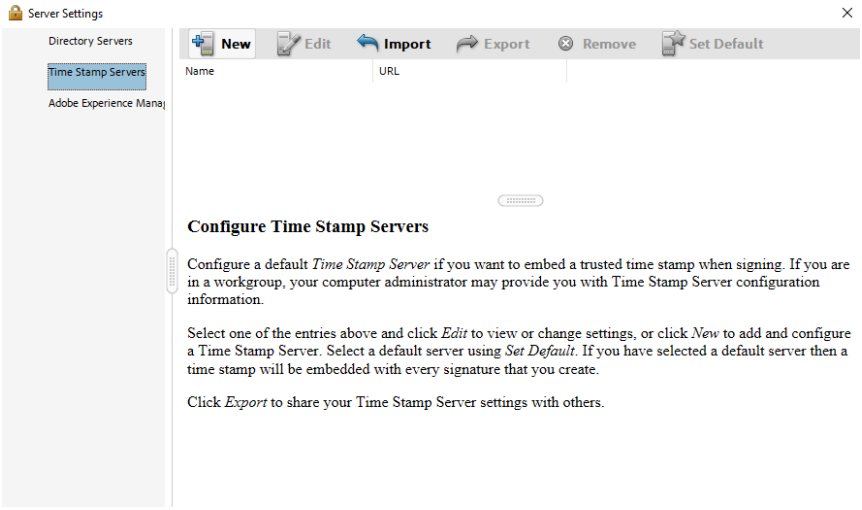
4. Continue to scroll down to **hardware status** and ensure that it is reported as **OK**.

2.17. Configure Adobe Acrobat Pro to use TSS

1. Open up Adobe Acrobat.
2. In the Menu, of Adobe Acrobat, select **Preferences**.
3. From the list of categories select **Security**.



4. In the **Configure Server Settings** pane, select **More**.
5. In the **Server Settings** dialog, from the list of options, select **Time Stamp Servers**, then select **New** in the top ribbon.

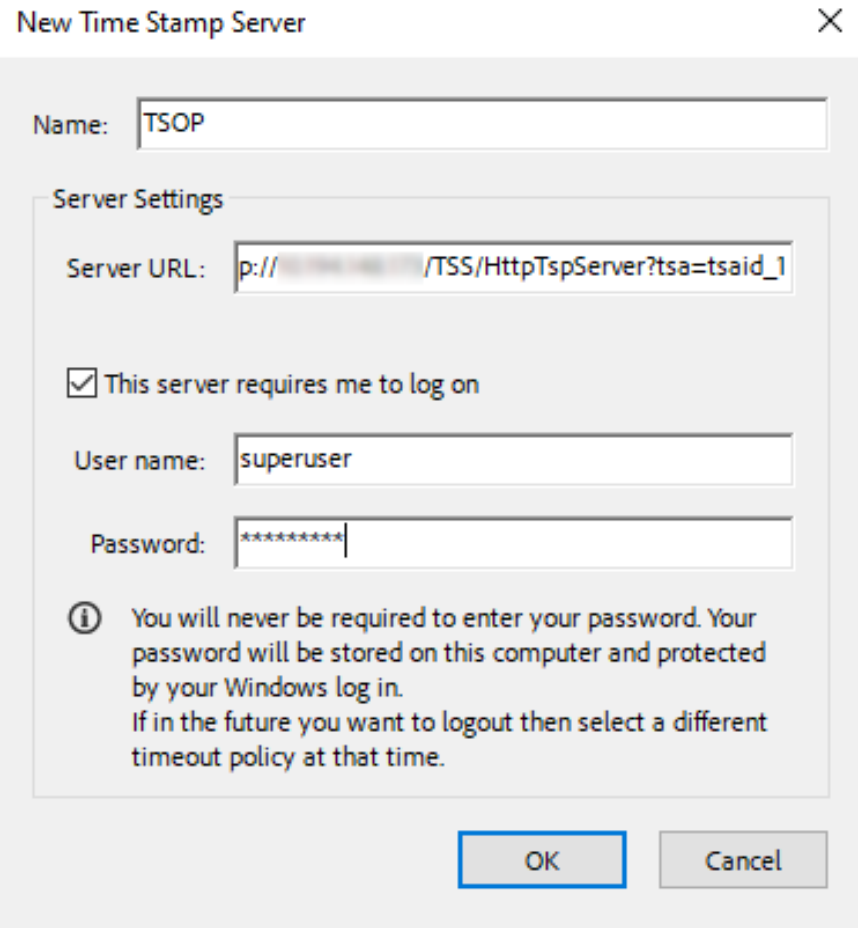


6. In the new **Time Stamp Server** dialog, enter a name and the server URL of the TSS.

   Enable **This server requires me to log on** and enter the login credentials. Select **OK**. The server is now added.

Here is a URL example: `http://10.193.142.123/TSS/HttpTspServer?tsa=tsaid_1`.

Replace the **IP Address** with the IP address or FQDN of your server.

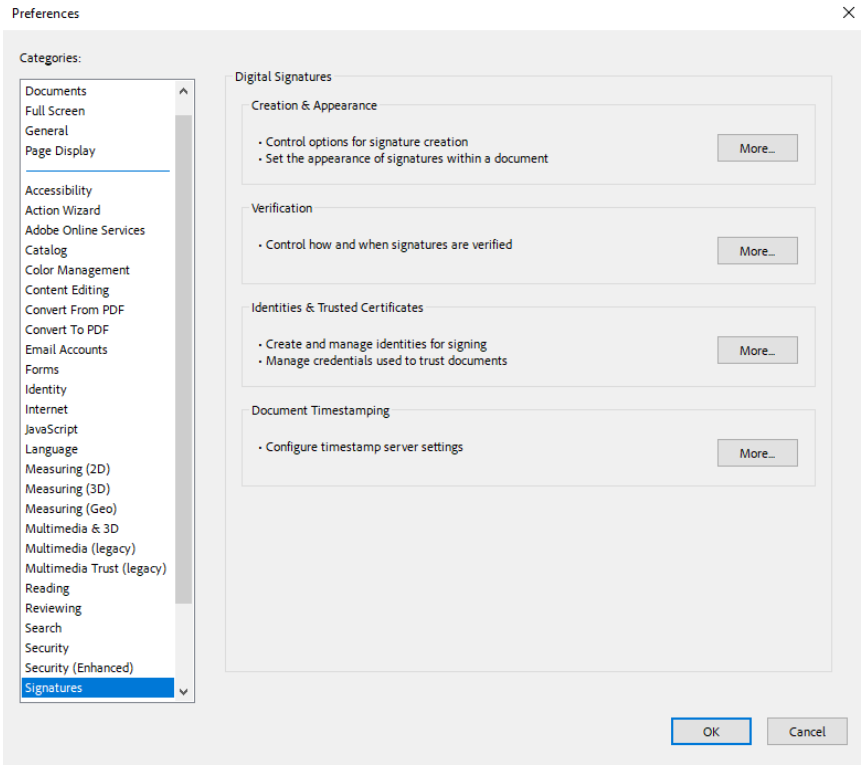


7. Select the **TSOP Time Stamp Server**, and in the top ribbon select **Set Default** (If the default is successfully set, **Set Default** is replaced by **Clear**).
8. Close the **Server Settings** dialog

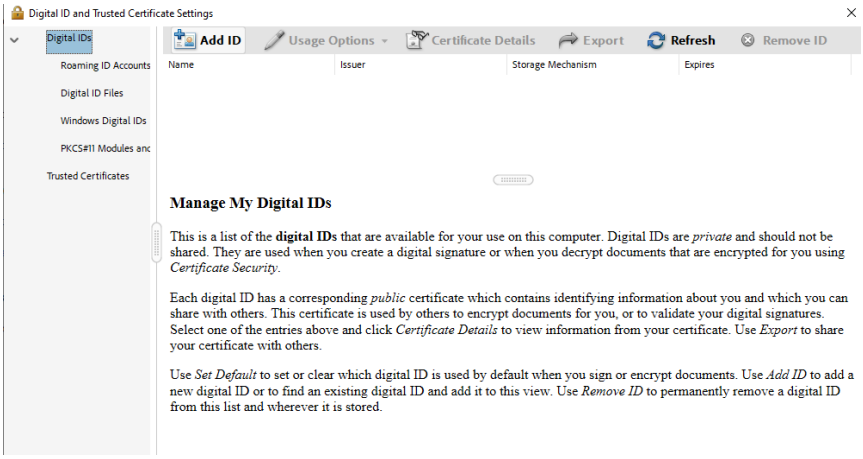
2.18. Set up a digital ID

To set up a digital ID:

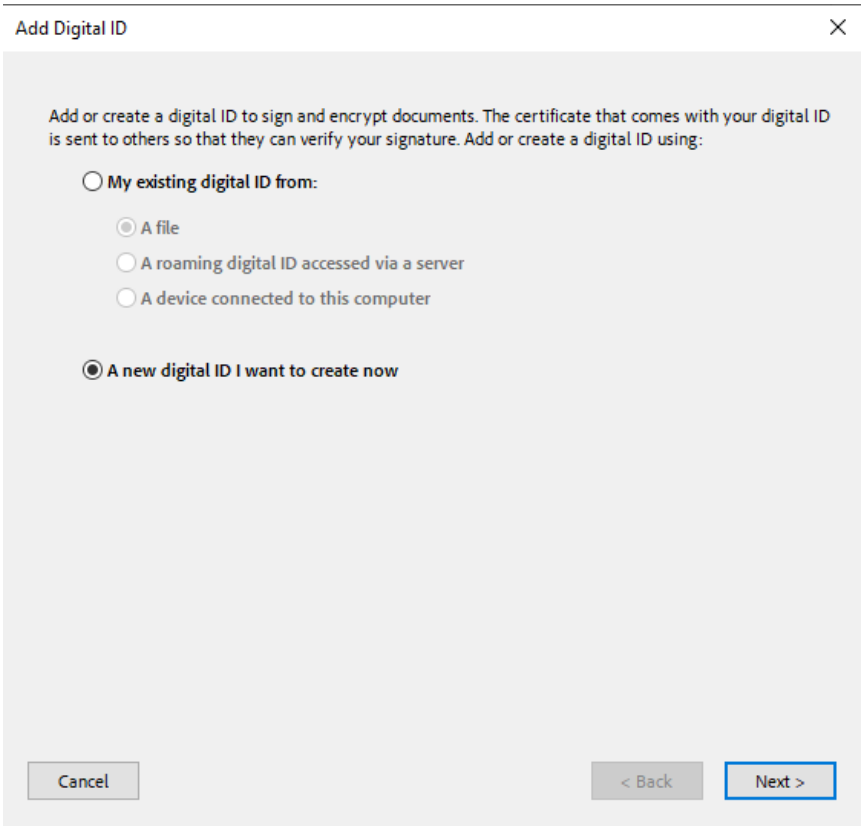
1. Stay in the **Preferences** dialog of Adobe Acrobat Pro, and from the list of categories, select **Signatures**.



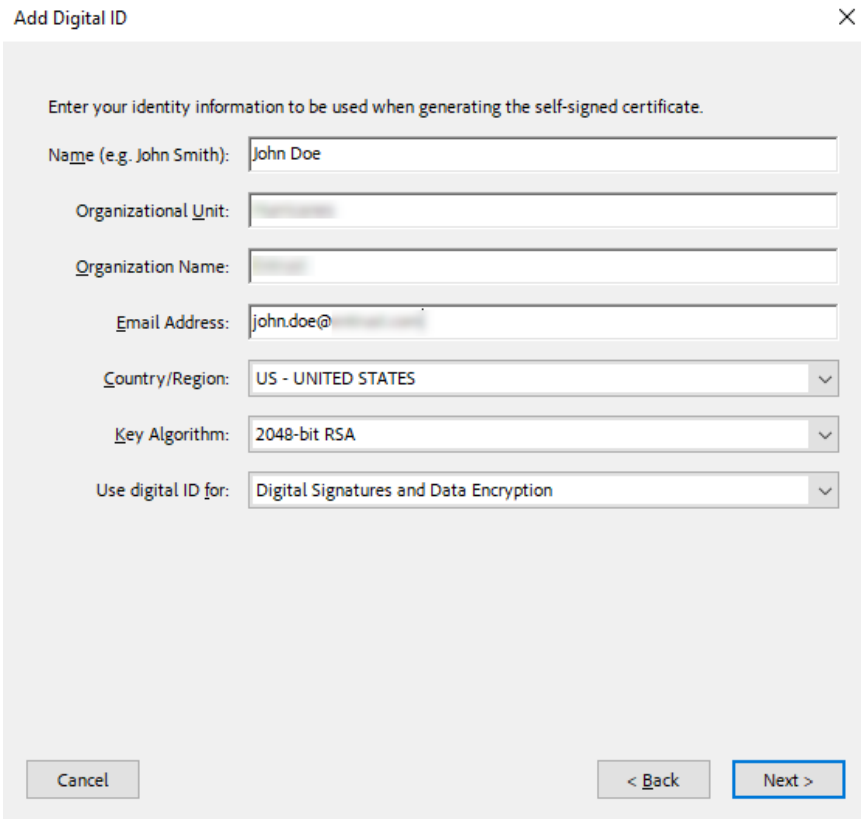
2. In the **Identities & trusted Certificates** box select **More**.
3. In the **Digital ID and Trusted Certificate Settings** dialog, select **Digital IDs**, then select **Add ID**.



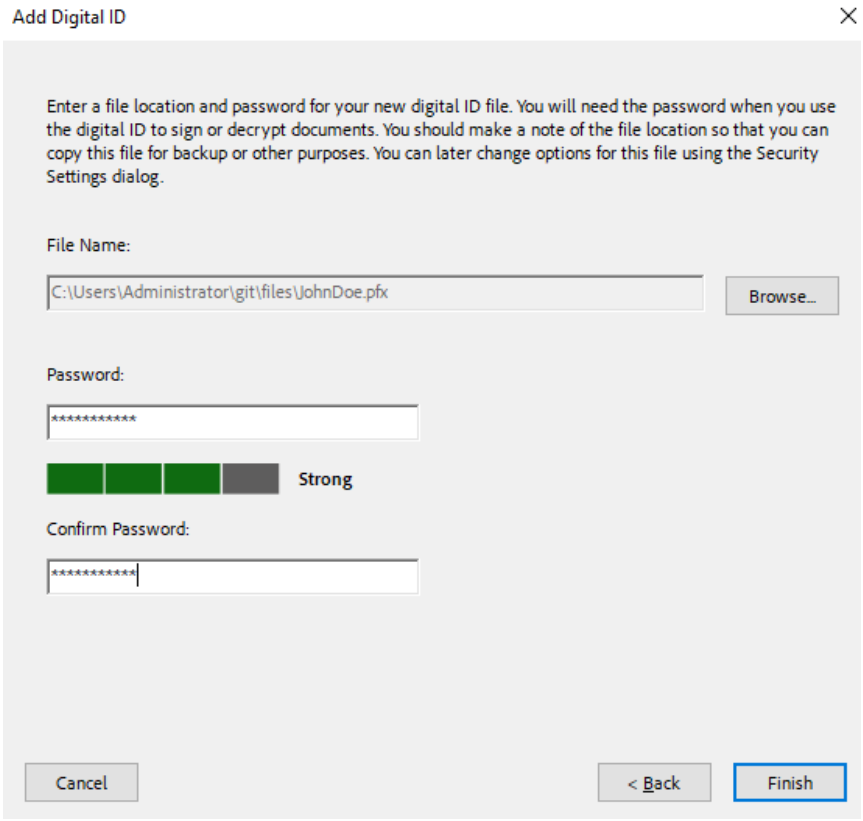
4. In the **Add Digital ID** Dialog, select **A new digital ID I want to create now**, then select **Next**.



5. The system will ask you where you want to store the ID. Select **New PKCS#12 Digital ID File**, then select **Next**.
6. Fill in the information fields, for example name and organizational, and select **Next**.



7. Enter the file location and password for the ID, then select **Finish**.

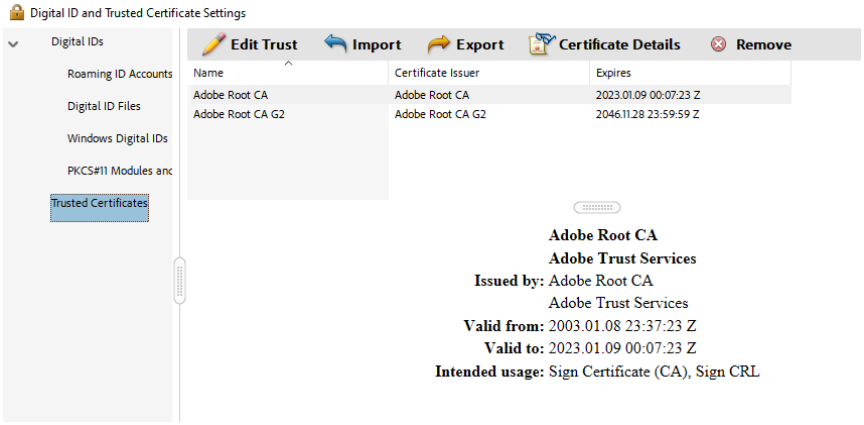


8. Confirm that the new ID appears in the list.

2.19. Import certificates into Adobe Acrobat Pro

To import certificates into Adobe Acrobat Pro:

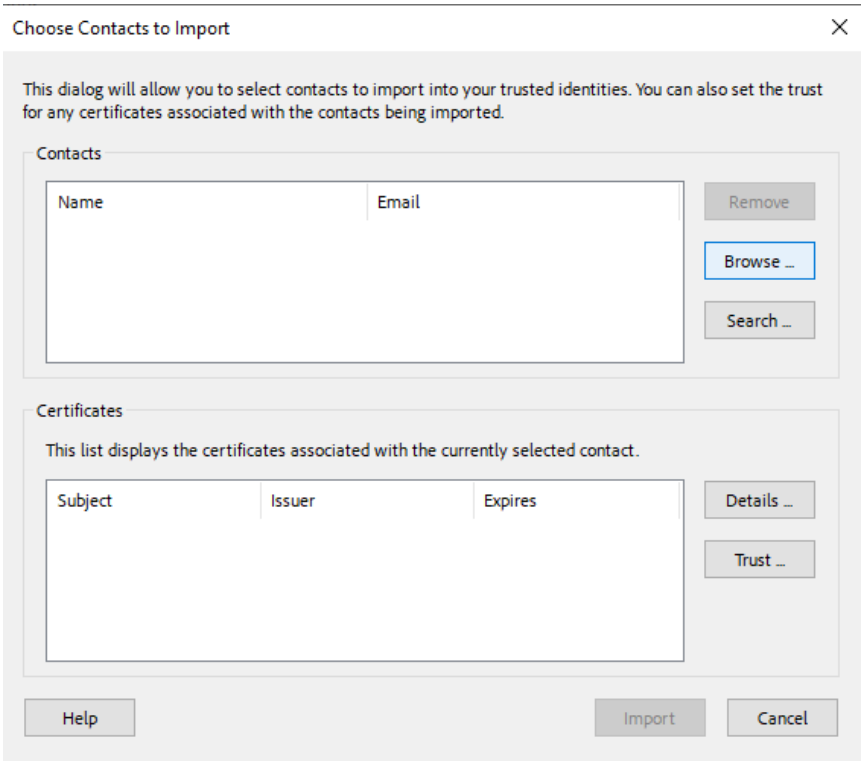
1. Still in the **Digital ID and Trusted Certificate Settings** dialog, select **Digital IDs > Trusted Certificates**.



2. On the **Trusted Certificates** tab, select **Import**.

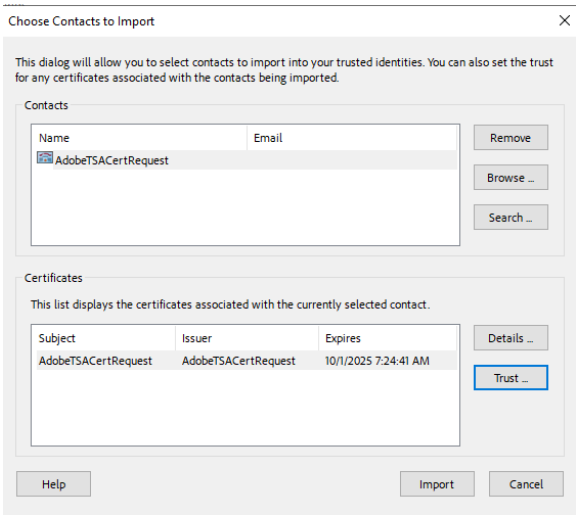
   Before continuing, make sure previously created certificate key text file has a `.cer` extension.

3. In the **Choose Contacts to Import** dialog, use **Browse** or **Search** to locate the Root Certificate and any Subordinate Certificates.

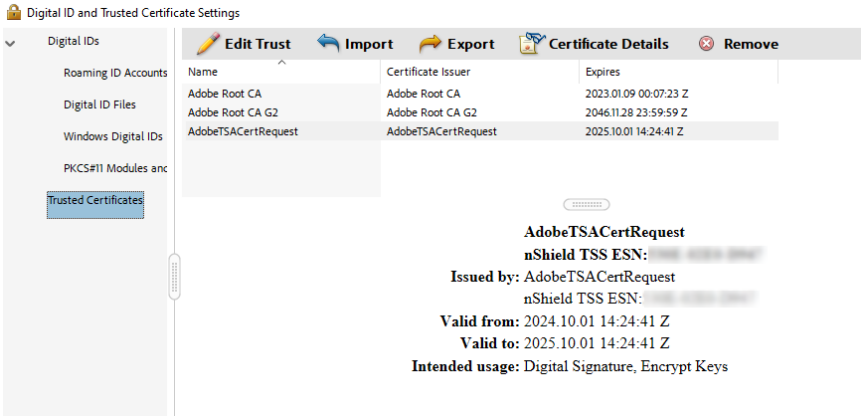


4. Double-click the certificates to select.

   They will appear in the **Contacts**.



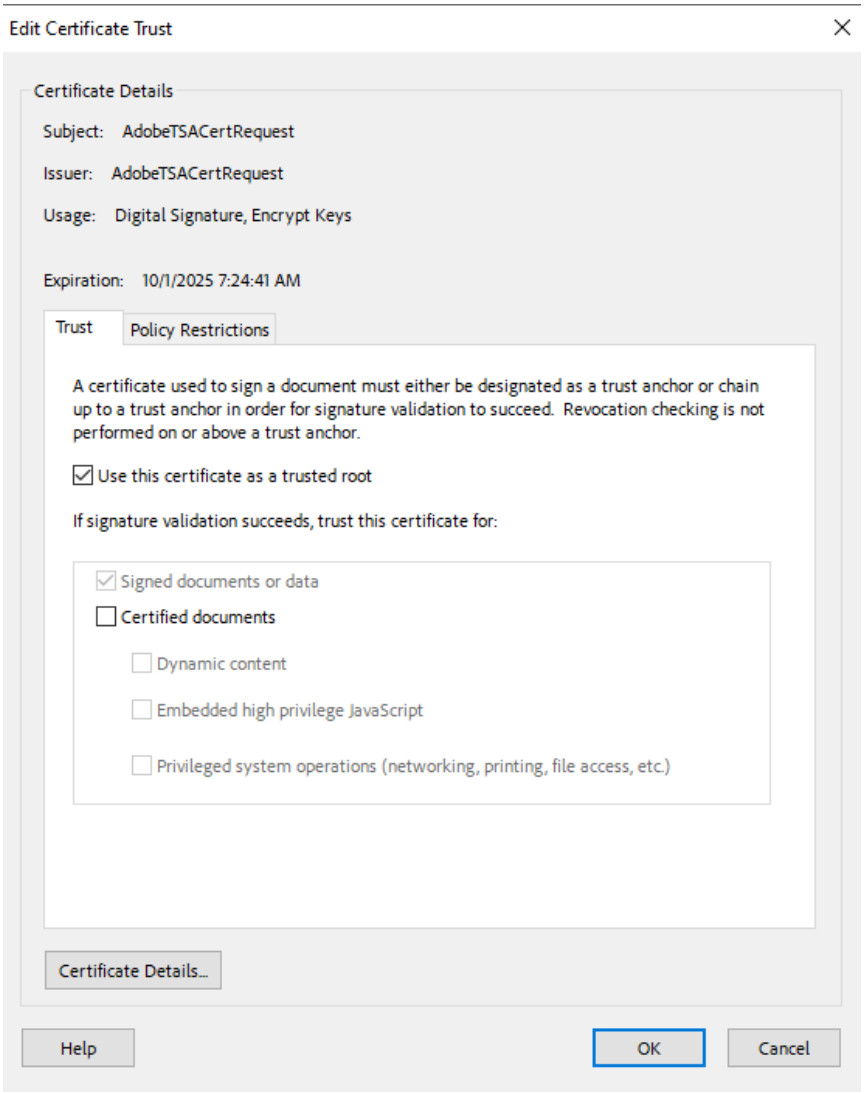
5. To add the certificates, select **Import**, then select **OK** to close the confirmation dialog about the import.
6. Confirm that the imported certificates appear in the list.



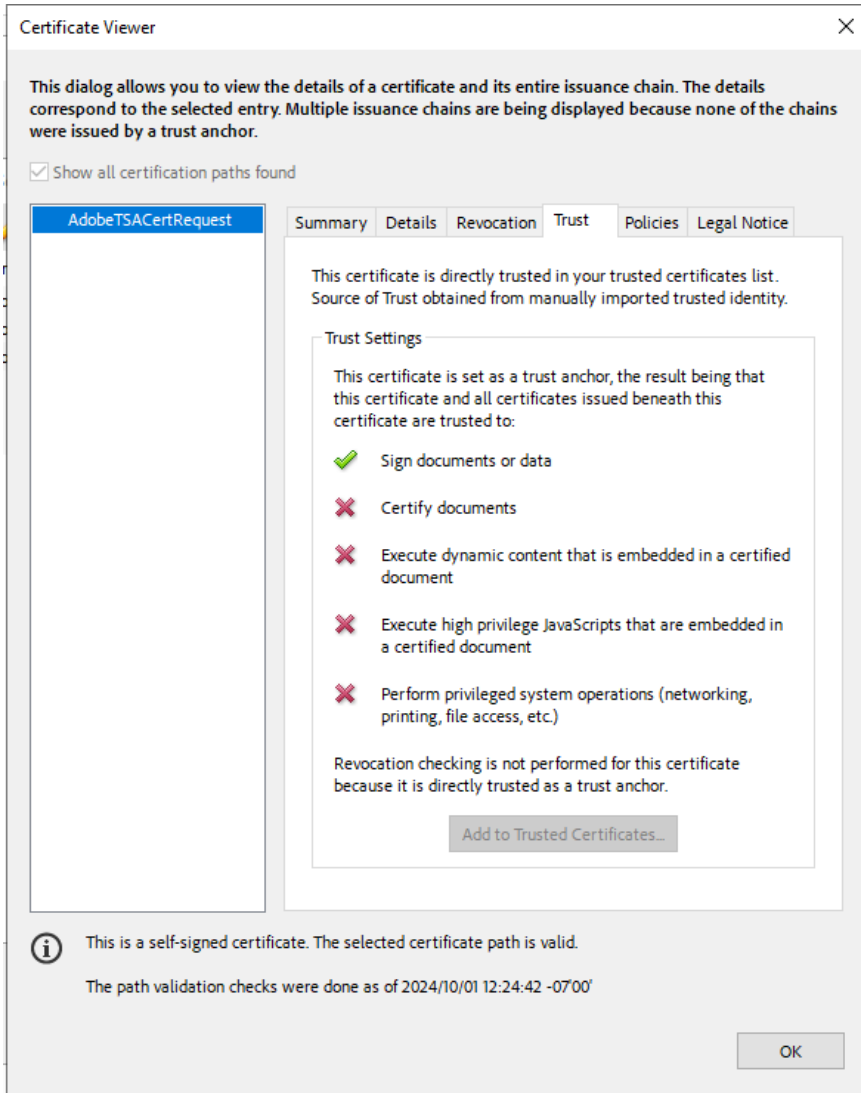
2.20. Configure the certificates

To configure the certificates:

1. Still in the **Digital ID and Trusted Certificate Settings** dialog, select the imported Root CA, then in the ribbon at the top of the window select **Edit Trust**.
2. Select **Use this certificate as a trusted root**, then select **OK**.



3. In the ribbon at the top of the window select **Certificate Details**.
4. In the **Certificate Viewer** dialog, switch to the **Trust** tab.
5. Ensure that there is a green check mark next to **Sign documents or data**, then select **OK**.

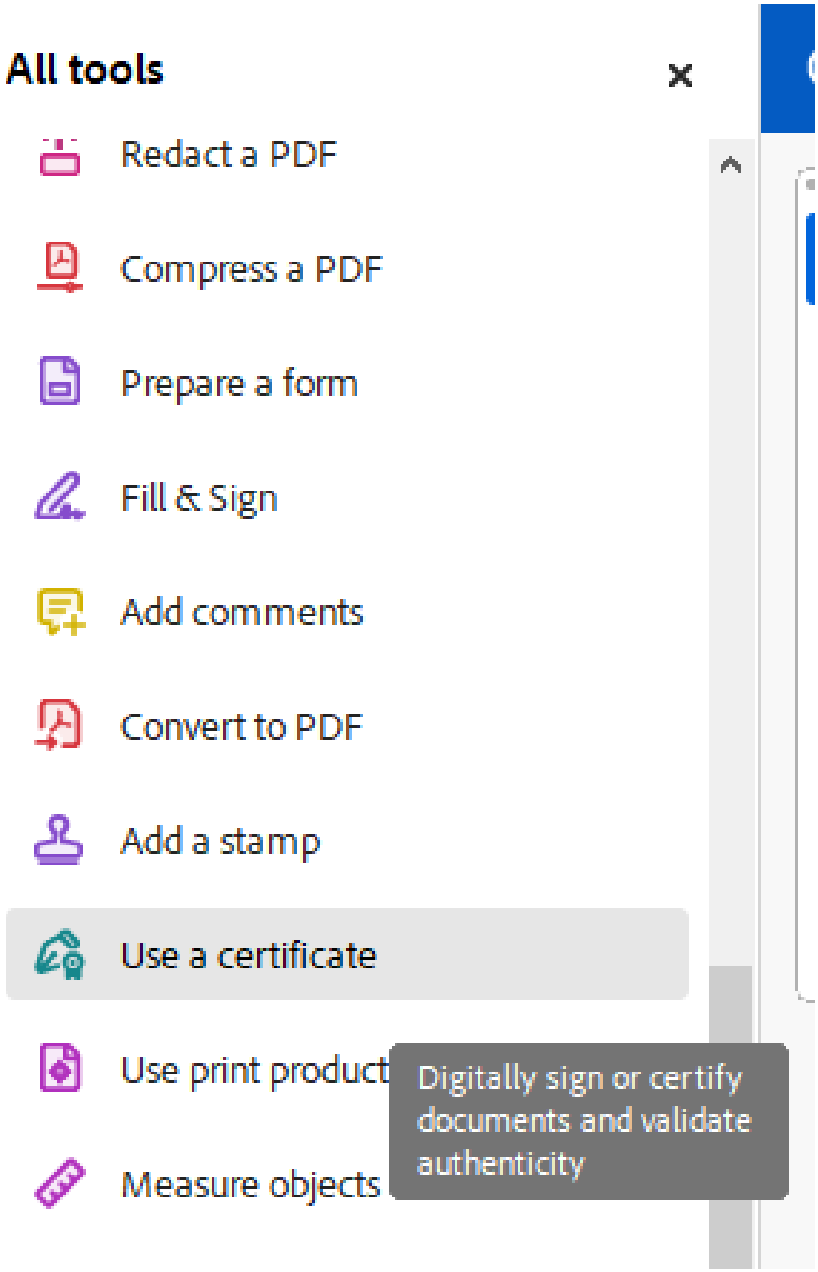


6. Close the **Digital ID and Trusted Certificates Settings** dialog.
7. To exit the Adobe **Preferences** configuration settings, select **OK**.

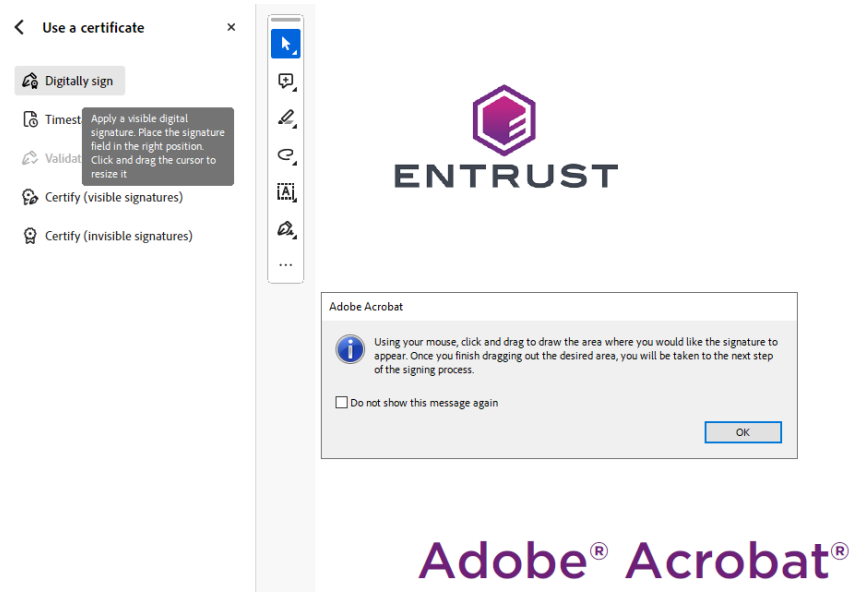
2.21. Sign and time-stamp a PDF document

To sign and time-stamp a PDF document:

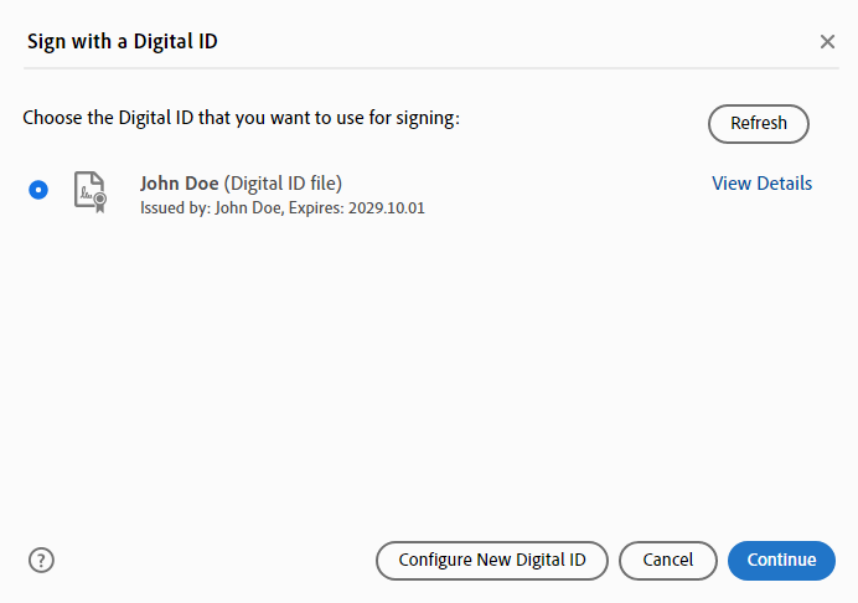
1. In Adobe Acrobat Pro, open the document to sign and time-stamp it digitally.
2. In the **Tools** pane on the left-hand side, select **Use Certificate**.



3. In the **Certificates** toolbar, select **Digitally Sign**.



4. Follow the information in the dialog box to select an area for signature, then select **OK**.
5. Select the Digital ID with which to sign, and select **Continue**.

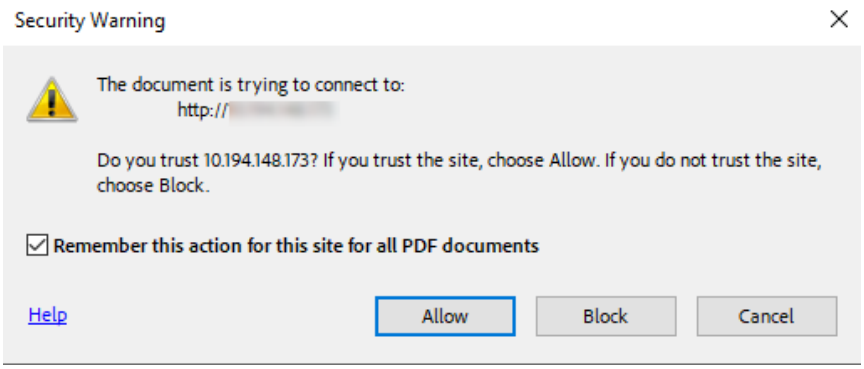


6. Confirm all details, enter the **Digital ID Pin/Passphrase**, and select **Sign**.

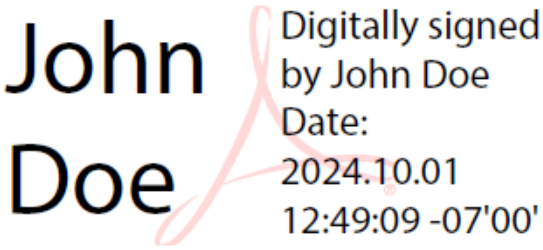
7. Choose a location to save the newly signed document.

   To avoid overwriting the original file, use a different file name for the signed document.

   During the Signing process a security warning may popup asking you to trust the TSOP server. Select **Allow**.



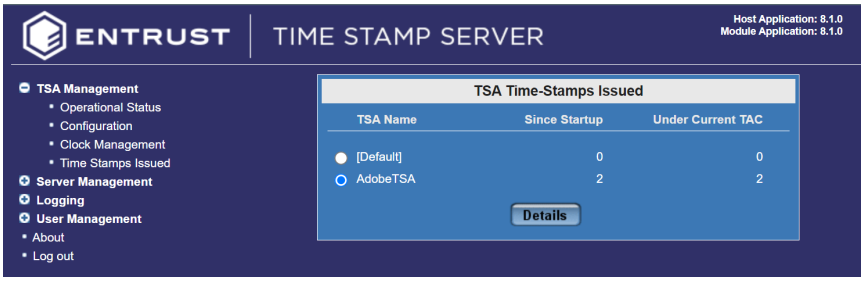
8. Once signed, the Signature is shown.



2.22. Check how many time-stamps have been issued

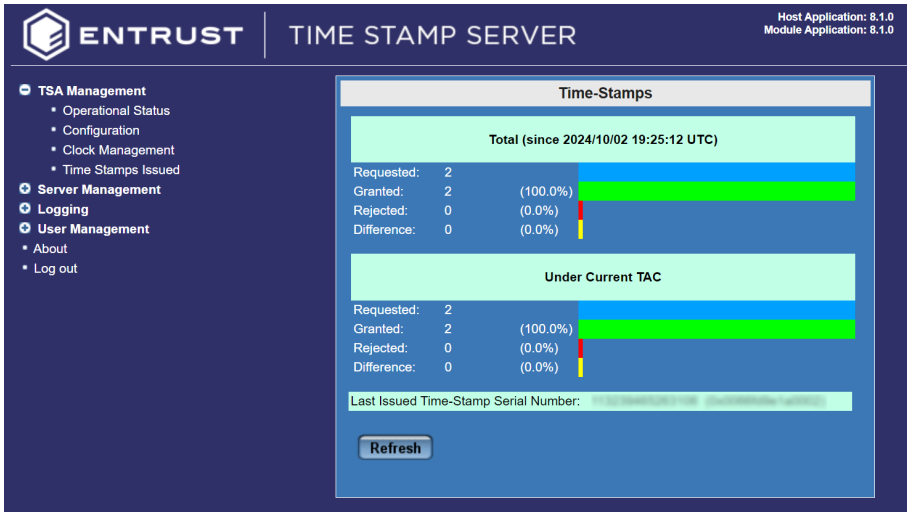
To check how many time-stamps have been issued:

1. Log in to the TSS server as Admin.
2. Under **TSA Management**, select **Time Stamps Issued**.



3. Check for the number of issued time-stamps under the current TAC since TSS was started up.

   Select the **TSA** to view the details, then select **Details**.


ENTRUST
TIME STAMP SERVER
Host Application: 8.1.0
Module Application: 8.1.0
TSA Management
Operational Status
Configuration
Clock Management
Time Stamps Issued
Server Management
Logging
User Management
About
Log out
Time-Stamps
Total (since 2024/10/02 19:25:12 UTC)
Requested: 2
Granted: 2 (100.0%)
Rejected: 0 (0.0%)
Difference: 0 (0.0%)
Under Current TAC
Requested: 2
Granted: 2 (100.0%)
Rejected: 0 (0.0%)
Difference: 0 (0.0%)
Last Issued Time-Stamp Serial Number:
Refresh

Chapter 3. Additional resources and related products

3.1. nShield Solo

3.2. Time Stamping Option Pack

3.3. Entrust digital security solutions

3.4. nShield product documentation