

# WLC Certificates

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## ***How to load the PEM Certificate to the WLC***

Download the converted PEM format device certificate onto the WLC, which has been created and described on [Working with Win32 OpenSSL](https://supportforums.cisco.com/docs/DOC-12775) < <https://supportforums.cisco.com/docs/DOC-12775>

```
(Cisco Controller) >transfer download datatype eapdevcert
(Cisco Controller) >transfer download certpassword Cisco123
Setting password to >Cisco123<
(Cisco Controller) >transfer download filename WLC4402.pem
(Cisco Controller) >transfer download start

Mode..... TFTP
Data Type..... Vendor Dev Cert
TFTP Server IP..... 10.51.82.9
TFTP Packet Timeout..... 6
TFTP Max Retries..... 10
TFTP Path..... /
TFTP Filename..... WLC4402.pem

This may take some time.
Are you sure you want to start? (y/N) y

TFTP EAP Dev cert transfer starting.

Certificate installed.
```

```
(Cisco Controller) >transfer download datatype eapdevcert
(Cisco Controller) >transfer download certpassword Cisco123
Setting password to <Cisco123>
(Cisco Controller) >transfer download filename WLC4402.pem
(Cisco Controller) >transfer download start

Mode..... TFTP
Data Type..... Vendor Dev Cert
TFTP Server IP..... 10.51.82.9
TFTP Packet Timeout..... 6
TFTP Max Retries..... 10
TFTP Path..... /
TFTP Filename..... WLC4402.pem

This may take some time.
Are you sure you want to start? (y/N) y

TFTP EAP Dev cert transfer starting.

Certificate installed.
                Reboot the switch to use new certificate.

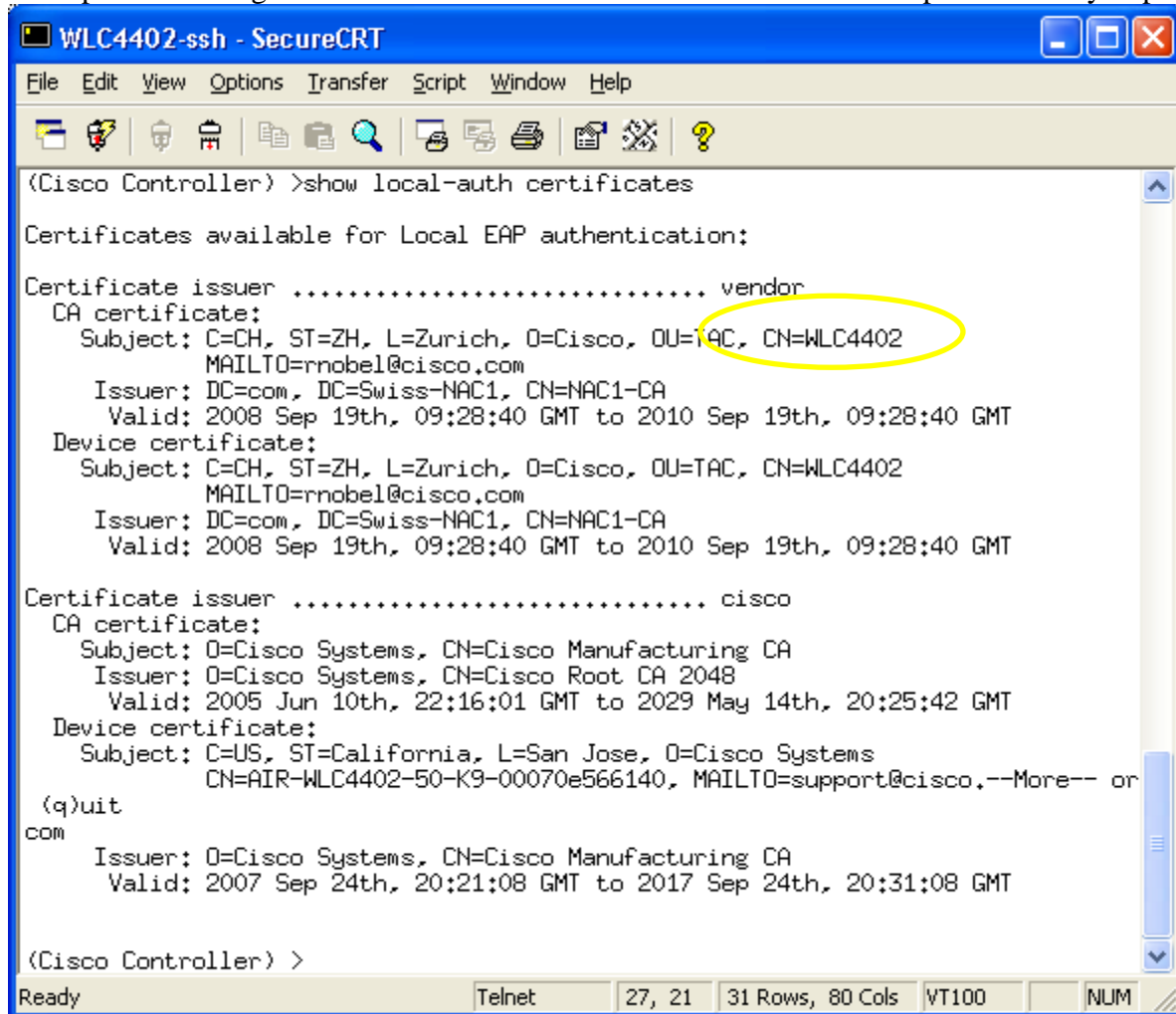
(Cisco Controller) >
```

**Reboot the WLC to use new certificate.**

Once rebooted, check the certificate.

```
(Cisco Controller) >show local-auth certificates
```

Example from using >How to enroll server certificate from W2k3 Enterprise with key export<



```
(Cisco Controller) >show local-auth certificates

Certificates available for Local EAP authentication:

Certificate issuer ..... vendor
  CA certificate:
    Subject: C=CH, ST=ZH, L=Zurich, O=Cisco, OU=TAC, CN=WLC4402
             MAILTO=rnobel@cisco.com
    Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
    Valid: 2008 Sep 19th, 09:28:40 GMT to 2010 Sep 19th, 09:28:40 GMT
  Device certificate:
    Subject: C=CH, ST=ZH, L=Zurich, O=Cisco, OU=TAC, CN=WLC4402
             MAILTO=rnobel@cisco.com
    Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
    Valid: 2008 Sep 19th, 09:28:40 GMT to 2010 Sep 19th, 09:28:40 GMT

Certificate issuer ..... cisco
  CA certificate:
    Subject: O=Cisco Systems, CN=Cisco Manufacturing CA
    Issuer: O=Cisco Systems, CN=Cisco Root CA 2048
    Valid: 2005 Jun 10th, 22:16:01 GMT to 2029 May 14th, 20:25:42 GMT
  Device certificate:
    Subject: C=US, ST=California, L=San Jose, O=Cisco Systems
             CN=AIR-WLC4402-50-K9-00070e566140, MAILTO=support@cisco.--More-- or
(q)uit
COM
  Issuer: O=Cisco Systems, CN=Cisco Manufacturing CA
  Valid: 2007 Sep 24th, 20:21:08 GMT to 2017 Sep 24th, 20:31:08 GMT

(Cisco Controller) >
```

**Note: CA certificate is stil CN=WLC4402 (SelfSignetCertificate)**

Example from using >Create a certifacte request with private key file using OpenSSL<

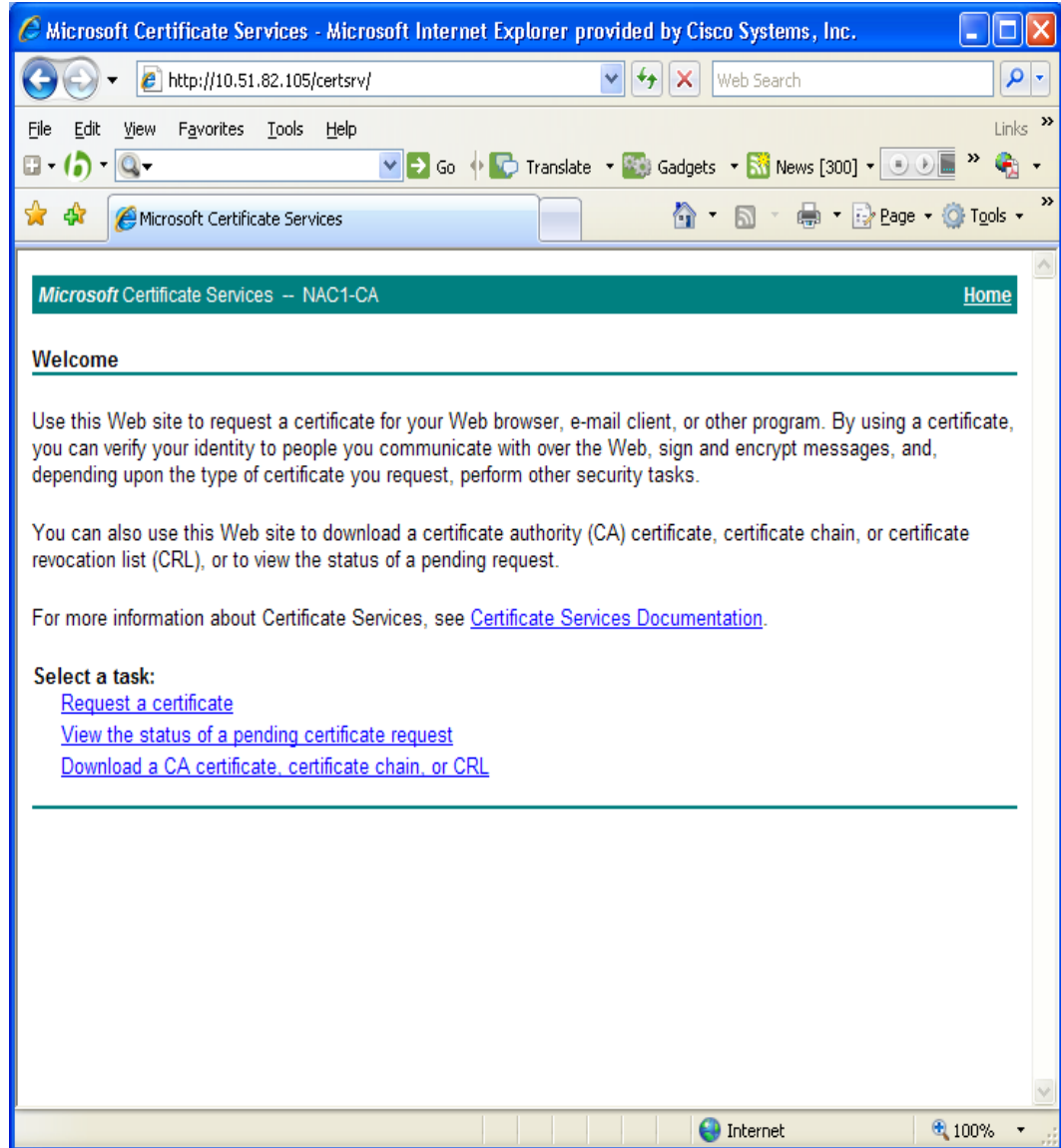
```
WLC4402-ssh - SecureCRT
File Edit View Options Transfer Script Window Help
(Cisco Controller) >transfer download filename WLC4402openSSL.pem
(Cisco Controller) >transfer download certpassword Cisco123
Setting password to <Cisco123>
(Cisco Controller) >transfer download start
Mode..... TFTP
Data Type..... Vendor Dev Cert
TFTP Server IP..... 10.51.82.9
TFTP Packet Timeout..... 6
TFTP Max Retries..... 10
TFTP Path..... /
TFTP Filename..... WLC4402openSSL.pem
This may take some time.
Are you sure you want to start? (y/N) y
TFTP EAP Dev cert transfer starting.
Certificate installed.
Reboot the switch to use new certificate.
(Cisco Controller) >show local-auth certificates
Certificates available for Local EAP authentication:
Certificate issuer ..... vendor
CA certificate:
Subject: C=CH, ST=Zurich, L=Zurich, O=Cisco, OU=TAC
CN=WLC4402openSslReq, MAILTO=tac@cisco.com
Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
Valid: 2008 Sep 19th, 15:13:47 GMT to 2010 Sep 19th, 15:13:47 GMT
Device certificate:
Subject: C=CH, ST=Zurich, L=Zurich, O=Cisco, OU=TAC
CN=WLC4402openSslReq, MAILTO=tac@cisco.com
Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
Valid: 2008 Sep 19th, 15:13:47 GMT to 2010 Sep 19th, 15:13:47 GMT
Certificate issuer ..... cisco
CA certificate:
Subject: O=Cisco Systems, CN=Cisco Manufacturing CA
Issuer: O=Cisco Systems, CN=Cisco Root CA 2048
Valid: 2005 Jun 10th, 22:16:01 GMT to 2029 May 14th, 20:25:42 GMT
Device certificate:
Subject: C=US, ST=California, L=San Jose, O=Cisco Systems
CN=AIR-WLC4402-50-K9-00070e566140,--More-- or (q)uit
MAILTO:support@cisco.com
Issuer: O=Cisco Systems, CN=Cisco Manufacturing CA
Valid: 2007 Sep 24th, 20:21:08 GMT to 2017 Sep 24th, 20:31:08 GMT
(Cisco Controller) >
```

**Note: CA certificate is not correct CN=NAC1-CA**

## How to download the vendor CA Certificate

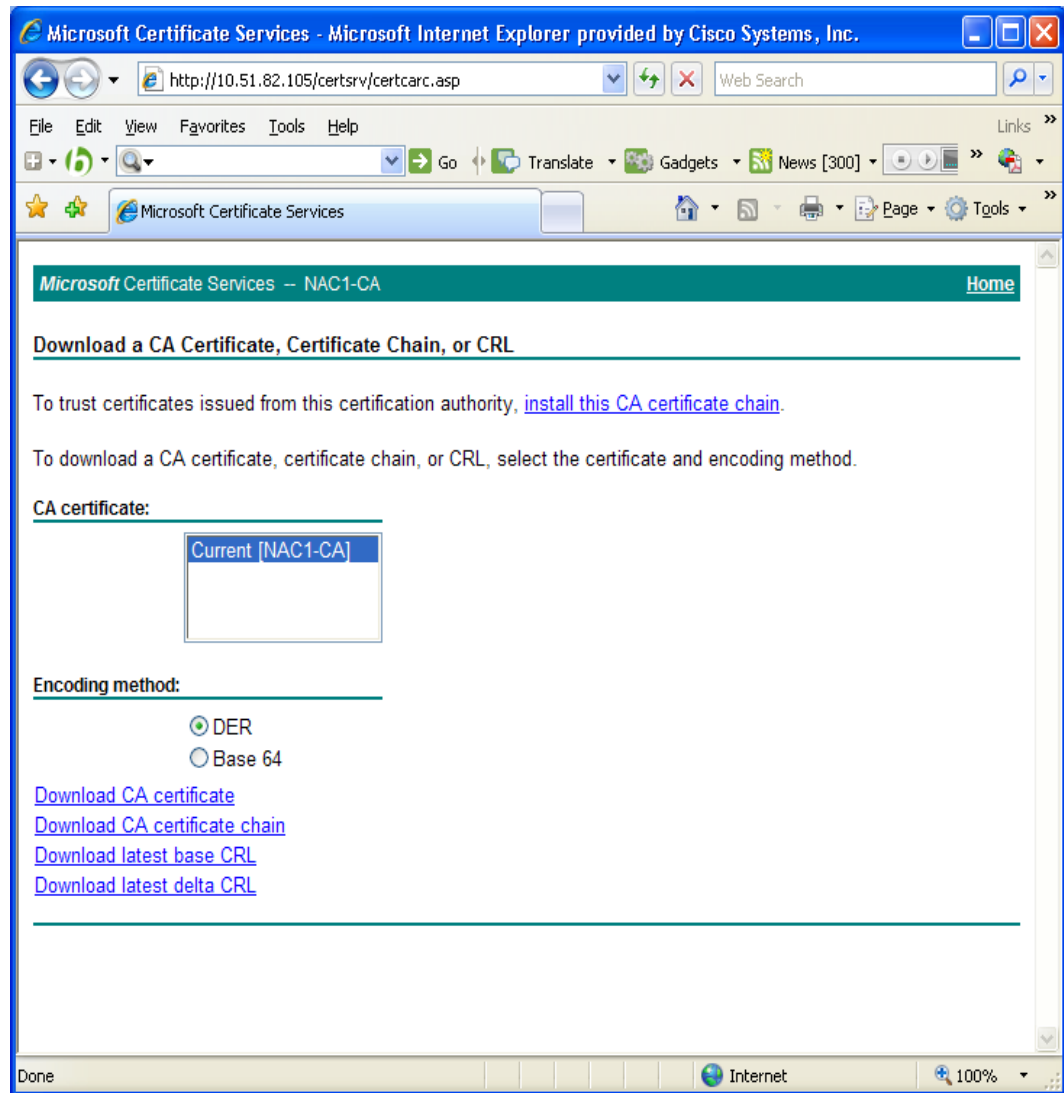
Complete these steps:

1. Complete these steps in order to retrieve the Vendor CA Certificate:
  - a. Go to **http://<serverIpAddr>/certsrv**.
  - b. Choose **Download a CA Certificate...** and click **Next**.



- c. Choose the CA Certificate.

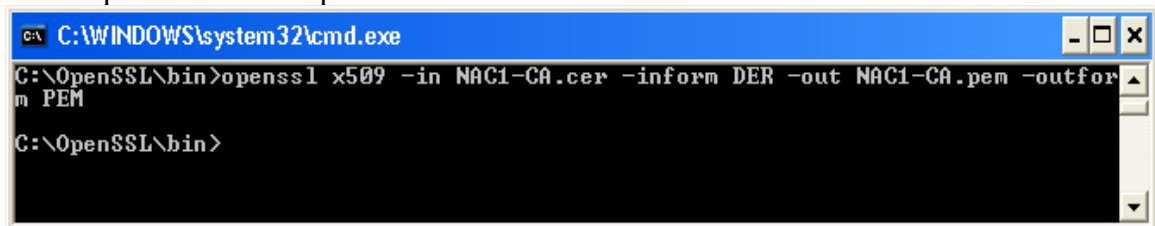
- d. Click **DER encoded**.



- e. Click on **Download CA certificate** and save the certificate as **NAC1-CA.cer**.

2. Convert the Vendor CA from DER format into PEM format with the **openssl x509 -in NAC1-CA.cer -inform DER -out NAC1-CA.pem -outform PEM** command.

The output file is rootca.pem in the PEM format.



3. Download the Vendor CA Certificate:  
4. (Cisco Controller) >**transfer download datatype eapacert**

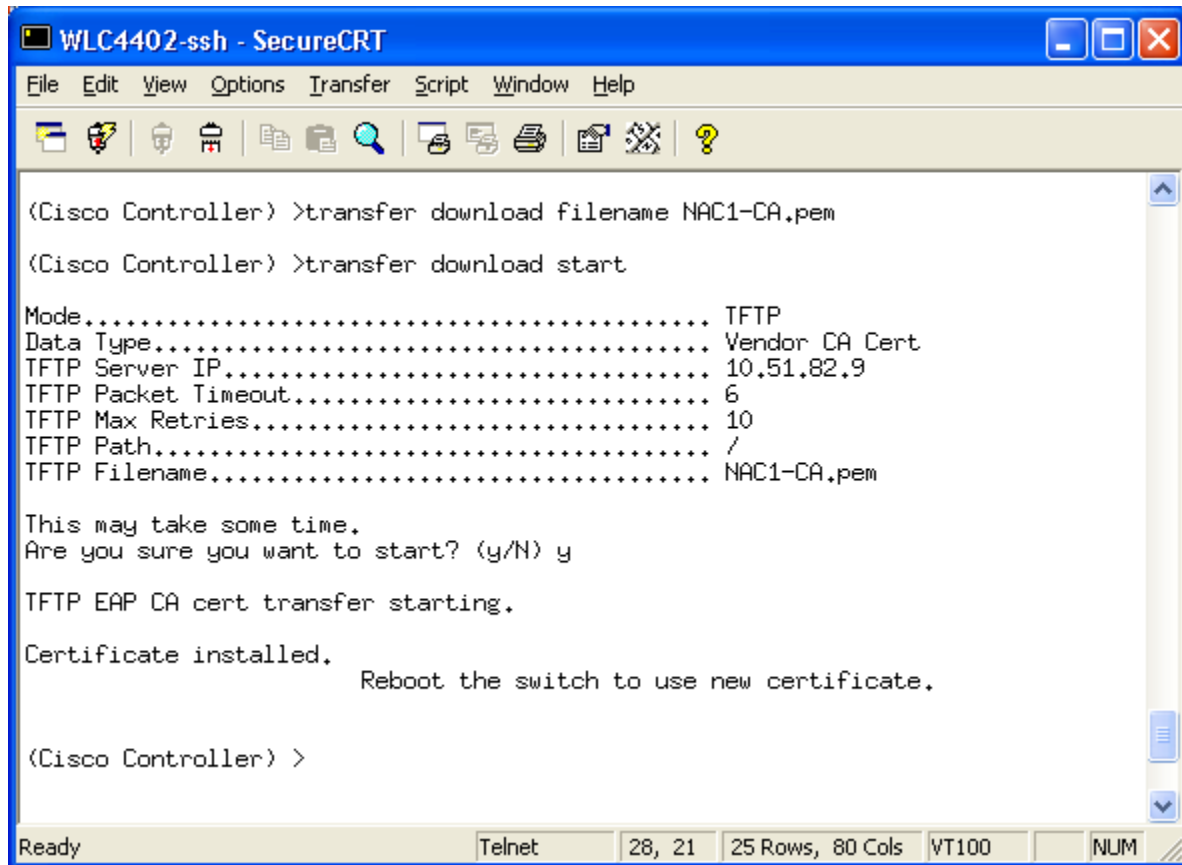
5. (Cisco Controller) >**transfer download filename NAC1-CA.pem**
6. (Cisco Controller) >**transfer download start**

```
Mode..... TFTP
Data Type..... Vendor CA Cert
TFTP Server IP..... 10.51.82.9
TFTP Packet Timeout..... 6
TFTP Max Retries..... 10
TFTP Path..... /
TFTP Filename..... NAC1-CA.pem
```

This may take some time.  
Are you sure you want to start? (y/N) y

TFTP EAP CA cert transfer starting.

Certificate installed.



```
WLC4402-ssh - SecureCRT
File Edit View Options Transfer Script Window Help
(Cisco Controller) >transfer download filename NAC1-CA.pem
(Cisco Controller) >transfer download start
Mode..... TFTP
Data Type..... Vendor CA Cert
TFTP Server IP..... 10.51.82.9
TFTP Packet Timeout..... 6
TFTP Max Retries..... 10
TFTP Path..... /
TFTP Filename..... NAC1-CA.pem
This may take some time.
Are you sure you want to start? (y/N) y
TFTP EAP CA cert transfer starting.
Certificate installed.
                Reboot the switch to use new certificate.
(Cisco Controller) >
```

**Reboot the switch to use new certificate.**

Once rebooted, check the certificate.

>show local-auth certificates

```
WLC4402-ssh - SecureCRT
File Edit View Options Transfer Script Window Help
(Cisco Controller) >show local-auth certificates

Certificates available for Local EAP authentication:

Certificate issuer ..... vendor
CA certificate:
  Subject: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
  Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
  Valid: 2006 Nov 26th, 09:31:47 GMT to 2011 Nov 26th, 09:40:43 GMT
Device certificate:
  Subject: C=CH, ST=Zurich, L=Zurich, O=Cisco, OU=TAC
  CN=WLC4402OpenSslReq, MAILTO=tac@cisco.com
  Issuer: DC=com, DC=Swiss-NAC1, CN=NAC1-CA
  Valid: 2008 Sep 19th, 15:13:47 GMT to 2010 Sep 19th, 15:13:47 GMT

Certificate issuer ..... cisco
CA certificate:
  Subject: O=Cisco Systems, CN=Cisco Manufacturing CA
  Issuer: O=Cisco Systems, CN=Cisco Root CA 2048
  Valid: 2005 Jun 10th, 22:16:01 GMT to 2029 May 14th, 20:25:42 GMT
Device certificate:
  Subject: C=US, ST=California, L=San Jose, O=Cisco Systems
  CN=AIR-WLC4402-50-K9-00070e566140, MAILTO=support@cisco.com
  Issuer: O=Cisco Systems, CN=Cisco --More-- or (q)uit
Manufacturing CA
  Valid: 2007 Sep 24th, 20:21:08 GMT to 2017 Sep 24th, 20:31:08 GMT

(Cisco Controller) >
Ready Telnet 25, 21 29 Rows, 80 Cols VT100 NUM
```

**Note: Device Certificate CN=WLC4402OpnSslReq is signed by NAC1-CA, whereas now CA certificate is CN=NAC1-CA**