

CUCM-cube/CUBE-SBC نېب SIP TLS نېوكت

تايوت حمل

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تايوت حمل لودج

قمدقملا

Cisco Unified نېب SIP نم (TLS) ل قنلا ققبط نام نېوكت ي ف دنتس ملا اذه دعاسي Cisco Unified Border Element (CUBE) و Cisco Unified Communications Manager (CUCM)

قساسال تابلطت ملا

تاعوضوملا هذبه قفرعم كيدي دل نوكت نأب Cisco ي صوت

- SIP لوكوتورب
- نامال تاداهش

تابلطت ملا

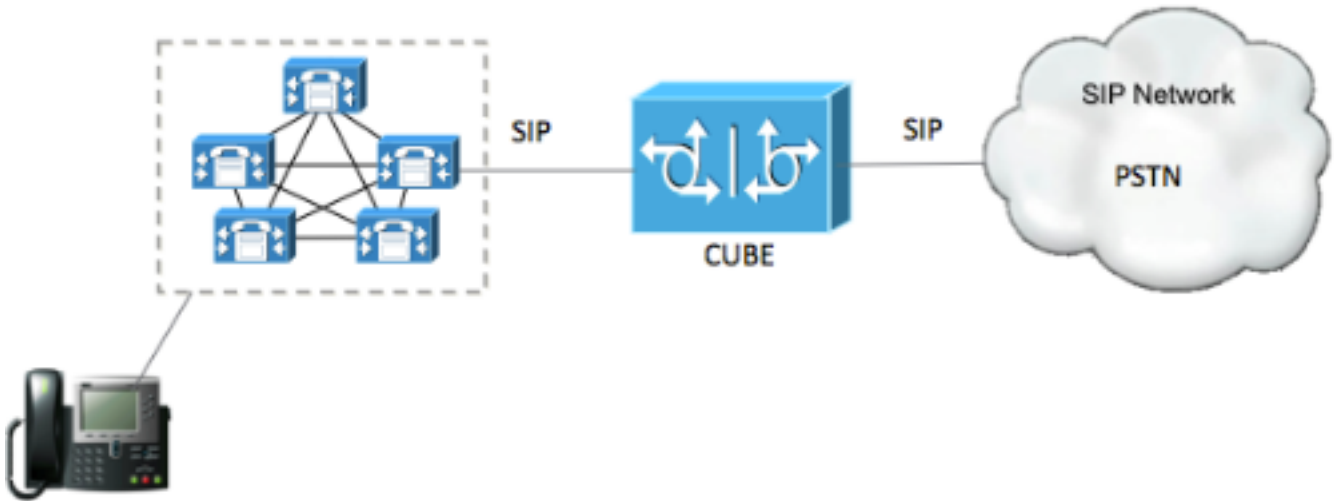
- ردصم سفن كيدي دل نوكتي نأب ي صوي) قياهنلا طاقن عم تقول او خيراتلا قباطتي نأب جي (NTP).
- طلتخملا عضولا ي ف CUCM نوكتي نأب جي.
- (تي زنارتلل قيامح رادج ي أيلع 5061 حوتفملا ذفنملا) بولطم TCP لاصتا.
- نامال او UCK9 صيخارت يلع بعكملا يوتحي نأب جي.

قمدختس ملا تانوك ملا

- SIP
- ايتاذ ققوم تاداهش

نېوكت ملا

قكبش ل ل يطيطخت ملا مسر ملا



نېوكتال تاوځ

د دځم ل CUBE د ادهش ب طا فت ح ل ل ة ق ت ة ط ق ن ء ا ش ن | 1. ة و ط خ ل ا

```
crypto pki trustpoint CUBEtest (this can be any name)
```

```
enrollment selfsigned
```

```
serial-number none
```

```
fqdn none
```

```
ip-address none
```

```
subject-name cn= ISR4451-B.cisco.lab ! (this has to match the router's host name)
```

```
revocation-check none
```

```
rsa keypair ISR4451-B.cisco.lab ! (this has to match the router's host name)
```

ل و ص ح ل ل `crypto pki login cubeTest` ر م أ ل ل ي غ ش ت ب م و ق ت ، ة ق ت ل ا ة ط ق ن ء ا ش ن | د ر ج م ب | 2. ة و ط خ ل ا
ا ي ت ا ذ ة ع ق و م ت ا د ا ه ش ي ل ع

```
crypto pki enroll CUBEtest
```

```
% The fully-qualified domain name will not be included in the certificate
```

```
Generate Self Signed Router Certificate? [yes/no]: yes
```

ج ا ر خ ل ا ا ذ ه ع ق و ت ب ج ي ف ، ا ح ي ح ص ل ل ي ج س ت ل ا ن ا ك ا ذ ا

```
Router Self Signed Certificate successfully created
```

ا ه ر ي د ص ت ب م و ق ت ن ا ب ج ي ة د ا ه ش ل ا ي ل ع ك ل و ص ح د ع ب | 3. ة و ط خ ل ا

```
crypto pki export CUBEtest pem terminal
```

ة ي ل ا ت ل ا ة د ا ه ش ل ا ء ا ش ن ا ب ه ا ل ع ا ر م أ ل م و ق ي ن ا ب ج ي

% Self-signed CA certificate:

-----BEGIN CERTIFICATE-----

MIIBgDCCASqgAwIBAgIBATANBgkqhkiG9w0BAQUFADAeMRwwGgYDVQQDExNjU1I0
NDUxLUIuY21zY28ubGF1bG4XDTE1MTIxNTAxNTAxNVoXDTIwMDEwMTAwMDAwMFow
HjEcmBoGA1UEAxMTSVNSNDQ1MS1CLmNpc2NvLmxhYjBcMA0GCSqGSIb3DQEBAQUA
A0sAMEgCQQDgtZ974Tfv+pngs1+cCeLZ/e0b2zq6CrIj4T1t+NS1G5sjMJ919/ix
7Fa6DG33LmEYUM1NntkLaz+8UNDAyBZrAgMBAAGjUzBRMA8GA1UdEwEB/wQFMAMB
Af8wHwYDVR0jBBGwFoAU+Yy1UqKdb+rrINc7tZcrdIRMKPowHQYDVR0OBBYEFpM
tVKinW/q6yDXO7WXK3SETCj6MA0GCSqGSIb3DQEBBQUAA0EADQXG2FYZ/MSewjSH
T88SHXq0EVqcLrgGpScwcpbR1mKFPPihDVaJfH/FC6jnkGW7JFWcekA5Kp0tzYx4
LDQaxQ==

-----END CERTIFICATE-----

% General Purpose Certificate:

-----BEGIN CERTIFICATE-----

MIIBgDCCASqgAwIBAgIBATANBgkqhkiG9w0BAQUFADAeMRwwGgYDVQQDExNjU1I0
NDUxLUIuY21zY28ubGF1bG4XDTE1MTIxNTAxNTAxNVoXDTIwMDEwMTAwMDAwMFow
HjEcmBoGA1UEAxMTSVNSNDQ1MS1CLmNpc2NvLmxhYjBcMA0GCSqGSIb3DQEBAQUA
A0sAMEgCQQDgtZ974Tfv+pngs1+cCeLZ/e0b2zq6CrIj4T1t+NS1G5sjMJ919/ix
7Fa6DG33LmEYUM1NntkLaz+8UNDAyBZrAgMBAAGjUzBRMA8GA1UdEwEB/wQFMAMB
Af8wHwYDVR0jBBGwFoAU+Yy1UqKdb+rrINc7tZcrdIRMKPowHQYDVR0OBBYEFpM
tVKinW/q6yDXO7WXK3SETCj6MA0GCSqGSIb3DQEBBQUAA0EADQXG2FYZ/MSewjSH
T88SHXq0EVqcLrgGpScwcpbR1mKFPPihDVaJfH/FC6jnkGW7JFWcekA5Kp0tzYx4
LDQaxQ==

-----END CERTIFICATE-----

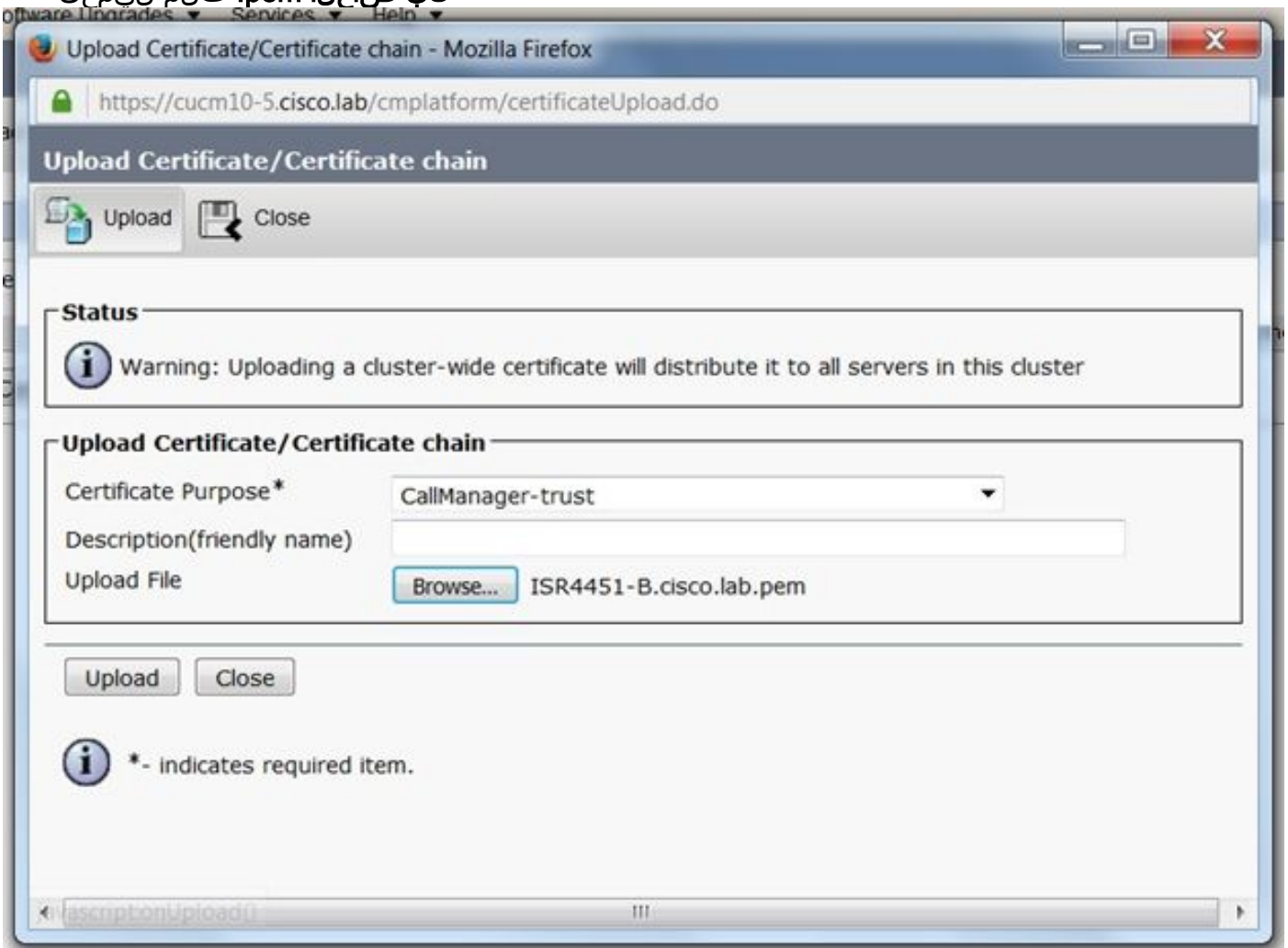
.pem. فللمل دادتم اب يصن فلم يف اهقصلو هالعأ أشنملا ايتاذ عقوقملا ةداهشلا خسن

ISR4451-B.ciscolab.pem يلاتلا لاثملا يمسي



CUCM إلى بعكمال ةداهش ليمحت .4 ةوطخال

- تاداهش لال سلسلس/ةداهش لال ليمحت > تاداهش لال ةرادا > نيمأتال > CUCM OS ريدم
- ةداهش لال ضرغ = CallManager-Trust
- كب صاخال pem . فلم ليمحت



تاملكم لال ةرادال اي تاذ ةقوقوم لال ةداهش لال ليزنت .5 ةوطخال

- CallManager لوقت يتل ةداهش لال يلع روثلع لال
- فيضم لال مسا يلع رقنا
- PEM فلم ليزنت يلع رقنا
- رتويبم لال يلع هظفح لال

Cisco Unified Operating System Administration
For Cisco Unified Communications Solutions

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Certificate List

Generate Self-signed | Upload Certificate/Certificate chain | Generate CSR

Status
10 records found

Certificate List (1 - 10 of 10) Rows per Page: 10

Find Certificate List where: Certificate begins with CallManager Find Clear Filter

Certificate *	Common Name	Type	Key Type	Distribution	Issued By	Expiration	Description
CallManager	CUCM1052	Self-signed	RSA	CUCM1052	CUCM1052	07/20/2021	Self-signed certificate generated by system

Certificate Details(Self-signed)

https://10.201.196.162/cmplatform/certificateEdit.do?cert=/usr/local/cm/.security/CallManager/certs/CallManager.pem

Certificate Details for CUCM1052, CallManager

Regenerate | Generate CSR | Download .PEM File | Download .DER File

Status
Status: Ready

Certificate Settings

File Name	CallManager.pem
Certificate Purpose	CallManager
Certificate Type	certs
Certificate Group	product-cm
Description(friendly name)	Self-signed certificate generated by system

Certificate File Data

```
[
Version: V3
Serial Number: 4A7B503A9A3D202AD7D54B1F874B7DF7
SignatureAlgorithm: SHA1withRSA (1.2.840.113549.1.1.5)
Issuer Name: L=rcdn5, ST=Texas, CN=CUCM1052, OU=prime, O=cisco, C=US
Validity From: Thu Jul 21 13:11:22 CDT 2016
To: Tue Jul 20 13:11:21 CDT 2021
Subject Name: L=rcdn5, ST=Texas, CN=CUCM1052, OU=prime, O=cisco, C=US
Key: RSA (1.2.840.113549.1.1.1)
Key value:
3082010a0282010100b803883f1177dcd68431efc16d7fdb127db637091d1d8e7b5
8d913a1689d2a289ea74fc1b42b5a571bc0abc1310e63b8924a84a3e7dc03e5001ac
4fb551b9f1569d44c1f336d5a1c2a80cbf65ebc93e2bb1619ca3d1c77984aeed1a752
3c433611d85f619725c8d116a5ab399765ed0851cdd73336244a7d214091f7a92be
38d07ae913dee31954028c16a6b020737890fc3f63653da9ca6bbafbd59f3c3b77292
89d50f14b7d8d4ae303069072917f6491ba1083584cae22122bd6ed524da1598353
]
```

Regenerate | Generate CSR | Download .PEM File | Download .DER File

Close

6. قوطخ لى CUBE لى CallManager.pem ةداهش لىمحت .

- يصن فلم ررحم مادختساب CallManager.pem حتفا
- لمك لى اب فلم لى وتحم خسن
- بعك ملى لى ع رماوال هذه لى لغشت

crypto pki trustpoint CUCMHOSTNAME

enrollment terminal

revocation-check none

crypto pku authenticate CUCMHOSTNAME

(PASTE THE CUCM CERT HERE AND THEN PRESS ENTER TWICE)

You will then see the following:

Certificate has the following attributes:

Fingerprint MD5: B9CABE35 24B11EE3 C58C9A9F 02DB16BC

Fingerprint SHA1: EC164F6C 96CDC1C9 E7CA0933 8C7518D4 443E0E84

% Do you accept this certificate? [yes/no]: yes

If everything was correct, you should see the following:

Trustpoint CA certificate accepted.

% Certificate successfully imported

CUBE ب صاخال عقوملا ةداهشلل TrustPoint م ادختس ال SIP ني وكت 7. ة و ط خ ل ل

sip-ua

crypto signaling default trustpoint CUBEtest

TLS م ادختس اب ب ل ط ل ل ا ر ق ا ني وكت 8. ة و ط خ ل ل

dial-peer voice 9999 voip

answer-address 35..

destination-pattern 9999

session protocol sipv2

session target dns:cucm10-5

session transport tcp tls

voice-class sip options-keepalive

srtplib

CUCM SIP Trunk Security Profile Configuration

- SIP Trunk Security Profile Configuration > CUCM > Add New Profile
- Here you can configure the SIP Trunk Security Profile for the SIP Trunk

SIP Trunk Security Profile Configuration

Save Delete Copy Reset Apply Config Add New

Status
Status: Ready

SIP Trunk Security Profile Information

Name*	CUBE Secure SIP Trunk Profile
Description	Secure SIP Trunk Profile authenticated by null String
Device Security Mode	Encrypted
Incoming Transport Type*	TLS
Outgoing Transport Type	TLS
<input type="checkbox"/> Enable Digest Authentication	
Nonce Validity Time (mins)*	600
X.509 Subject Name	ISR4451-B.cisco.lab
Incoming Port*	5061
<input type="checkbox"/> Enable Application level authorization	
<input checked="" type="checkbox"/> Accept presence subscription	
<input checked="" type="checkbox"/> Accept out-of-dialog refer**	
<input checked="" type="checkbox"/> Accept unsolicited notification	
<input checked="" type="checkbox"/> Accept replaces header	
<input checked="" type="checkbox"/> Transmit security status	
<input type="checkbox"/> Allow charging header	
SIP V.150 Outbound SDP Offer Filtering*	Use Default Filter

هنا يمكنك تمكين CN مساهمة X.509 للقباطية نأية لمل مهمال نم: **ملاحظة**
أي تاذة قوومال عداشال عاشنإب كمإيق انثا اق بس م

CUCM SIP Trunk Security Profile Configuration

- Here you can configure the SIP Trunk Security Profile for the SIP Trunk
- SRTP is enabled by default
- 5061 and 5060 are used for incoming and outgoing respectively
- (9) Here you can configure the SIP Trunk Security Profile for the SIP Trunk

SIP Information

Destination

Destination Address is an SRV

Destination Address	Destination Address IPv6	Destination Port
1 * 10.201.160.12		5061

MTP Preferred Originating Codec * 711ulaw

BLF Presence Group * Standard Presence group

SIP Trunk Security Profile * ISR4451-B Secure SIP Trunk Profile

Rerouting Calling Search Space < None >

Out-Of-Dialog Refer Calling Search Space < None >

SUBSCRIBE Calling Search Space < None >

SIP Profile * Standard SIP Profile-options [View Details](#)

DTMF Signaling Method * No Preference

- ه.ن.ي.ع.ت.ة.د.ع.ا.و.ل.ا.ص.ت.ا.ل. ط.خ. ظ.ف.ح.ب. م.ق.

ة.ح.ص.ل.ا. ن.م. ق.ق.ح.ت.ل.ا

ة.ل.ا.ح. ي.ف. SIP ل.ا.ص.ت.ا. ط.خ. ن.و.ك.ي. ن.أ. ب.ج.ي.، CUCM ل.ع. ت.ا.ر.ا.ي.خ.ل.ا.ب. ل.ا.ص.ت.ا.ل. ر.ا.ب.ت.خ.ا. ن.ي.ك.م.ت. ذ.ن.م. ة.ل.م.ا.ك.ل.ا. ة.م.د.خ.ل.ا.

Name *	Description	Calling Search Space	Device Pool	Route Pattern	Partition	Route Group	Priority	Trunk Type	SIP Trunk Status	SIP Trunk Duration
ISR4451-B			0711-Secure					SIP Trunk	Full Service	Time In Full Service: 0 day 0 hour 0 minute

ة.ل.م.ا.ك.ل.ا. ة.م.د.خ.ل.ا. SIP ل.ا.ص.ت.ا. ط.خ. ة.ل.ا.ح. ر.ه.ظ.ت.

ي.ل.ا.ت.ل.ا.ك. ب.ل.ط.ل.ا. ر.ي.ظ.ن. ة.ل.ا.ح. ض.ر.ع.

```
show dial-peer voice summary
```

TAG	TYPE	MIN	OPER	PREFIX	DEST-PATTERN	FER	THRU	SESS-TARGET	STAT	PORT
9999	voip	up	up		9999	0	syst	dns:cucm10-5		active

ا.ه.ا.ل.ص.ا.و.ا.ط.خ.ا.ل.ا. ف.ا.ش.ك.ت.س.ا

ا.ط.خ.ا.ل.ا. ه.ذ.ه. ج.ا.ر.خ.ا. ع.ي.م.ج.ت.و. ن.ي.ك.م.ت.

```
debug crypto pki api
debug crypto pki callbacks
debug crypto pki messages
debug crypto pki transactions
debug ssl openssl errors
debug ssl openssl msg
debug ssl openssl states
debug ip tcp transactions
debug ccip verbose
```

Webex ل.ي.ج.س.ت. ط.ا.ب.ت.ل.ا:

<https://goo.gl/QOS1iT>

ةمچرتل هذه ل و ح

ةلأل تاي نقتل ن م ة و مچ م ادخت ساب دن تسمل اذ ه Cisco ت مچرت
ملاعلاء ن أ عي مچ ي ف ن ي م دخت سمل ل معد ي و تح م مي دقت ل ة ي رش ب ل و
امك ة ق ي قد ن و ك ت ن ل ة ي ل أ ة مچرت ل ض ف أ ن أ ة ظ حال م ي ج ر ي . ة ص ا خ ل م ه ت غ ل ب
Cisco ي ل خ ت . ف ر ت ح م مچرت م ا ه م د ق ي ي ت ل ا ة ي ف ا ر ت ح ا ل ا ة مچرت ل ا ع م ل ا ح ل ا و ه
ي ل ا م ا د ع و ج ر ل ا ب ي ص و ت و ت ا مچرت ل ا ه ذ ه ة ق د ن ع ا ه ت ي ل و ئ س م Cisco
Systems (رف و ت م ط بار ل ا) ي ل ص أ ل ا ي ز ي ل ج ن ا ل ا دن تسمل ا