CUCMì⍰„ ì‚¬ìš©í•˜ì—¬ IP Phoneì—⍰ LSC êµ¬ì„±

ëª©ì°¨

ì†Œê°œ
ì‚¬ì „ ìš”êµ ì‚¬í•
ìš”êµ ì‚¬í•
ì‚¬ìš©ë⍰˜ëŠ” êµ¬ì„± ìš”ì†Œ
ë°°ê²½ ì •ë³´
MIC ëŒ€ LSC
êµì„±
ë„¤íŠ¸ì›Œí⍰¬ í† í⍰´ë¡œì§€
ë‹¤ì⍰Œì⍰„ í™•ì⍰¸í•©ë‹ˆë‹¤.
ë¬¸ì œ í•´ê²°
ìœ íš¨í•œ CAPF ì„œë²„ ì—†ì⍰Œ
LSC: ì—°ê²° ì‹¤íŒ¨
LSC: ì‹¤íŒ¨
LSC: ìž‘ì—… ë³´ë¥˜ ì¤‘
ê´€ë ¨ ì •ë³´

ì†Œê°œ

ì⍰´ ë¬¸ì„œì—⍰ì„œëŠ” Cisco IP Phone(Cisco Internet Protocol Phone)ì—⍰ LSC(Locally Significant Certificate)ë¥¼ ì„¤ì¹˜í•˜ëŠ” ë°©ë²•ì—⍰ ëŒ€í•´ ì„¤ëª…í•©ë‹ˆë‹¤.

ì‚¬ì „ ìš”êµ ì‚¬í•

ìš”êµ ì‚¬í•

ë‹¤ì⍰Œ ì£¼ì œì—⍰ ëŒ€í•œ ì§€ì‹⍰ì⍰„ ë³´ìœ í•˜ê³ ìžˆìœ¼ë©´ ìœ ìš©í•©ë‹ˆë‹¤.

- CUCM(Cisco Unified Communications Manager) í⍰´ëŸ¬ìŠ¤í„° ë³´ì•ˆ ëª¨ë“œ ì˜µì…˜
- X.509 ì⍰¸ì¦⍰ì„œ
- MIC(Manufacturing Installed Certificates)
- LSC
- CAPF(Certificate Authority Proxy Function) ì⍰¸ì¦⍰ì„œ ìž‘ì—…
- ê¸°ë³¸ ë³´ì•ˆ(SBD)
- ITL(Initial Trust List) íŒŒì⍰¼

ì‚¬ìš©ë⍰˜ëŠ” êµ¬ì„± ìš”ì†Œ

ì⍰´ ë¬¸ì„œì⍰˜ ì •ë³´ëŠ” SBDë¥¼ ì§€ì›⍰í•˜ëŠ” CUCM ë²„ì „, ì¦‰ CUCM 8.0(1) ì⍰´ìƒ⍰ì⍰„ ê¸°ë°˜ìœ¼ë¡œ í•©ë‹ˆë‹¤.

> **ì°¸ê³ :** ê¸°ë³¸ì ìœì¼ë¡œ ë³´ì•ˆ(SBD)ì€ „ì§€ì›ëí•˜ëŠ” ì „í™”ê¸°ì—ì„œ ë°©ì–´, 7940 ë°• 7960 ì „í™”ê¸°ëŠ” SBDë¥¼ ì§€ì›ëí•˜ì§€ ì•Šìœ¼ë©° 7935, 7936 ë°• 7937 ì „í™”ê¸°ë„ ì§€ì›ëí•˜ì§€ ì•ŠìŠµë‹ˆë‹¤. ì‚¬ìš© ì¤‘ì¸ CUCM ë²„ì „ì—ì„œ SBDë¥¼ ì§€ì›ëí•˜ëŠ” ë•Œë¶€ì²´ ëªë¡ìì„œ ë³´ë ¤ë©´ **Cisco Unified Reporting** > **System Reports** > **Unified CM Phone Feature Listë¡œ** ì´ë™í•˜ì—¬ Feature: Security By Defaultì—ì„œ ëŒ€ê³ ì „œë¥¼ ì‹¤í–‰í•˜ì‹œê¸° ë°”ëë‹¤.

ì´ ë¬¸ì„œì—ì„œ ì •ë³´ íŠ¹ì • ë¨© ë•©ë•ì´ìŠ¤ë¥¼ íŠ¸ëŸ¬ë¸”ìŠˆíŒ…í† ëŒ€ë¡œ ì‚¬ìš©ëë‹¤. ì´ ë¬¸ì„œì—ì—ì„œ ëª¨ë“ ë•©ë•ì´ìŠ¤ëŠ” ì´ˆê¸°í™”ëœ(ê¸°ë³¸) ì»¨íŽ¸ë¡œ ì‹œìž‘í•©ëë‹¤. í˜„ìž¬ ë„¤íŠ¸ì›Œí¬ê°€ ìž‘ë™ ì¤‘ì¸ ê²½ìš° ë³€ê²½ ì ¸ì ¸ ìž ìž¬ì ì˜ì¸í–¥ì„ ë¯¸ì¹ ì ¸ì ¸ ìˆ™ì§€í•´ì•¼ í•©ëë‹¤.

ë°°ê²½ ì •ë³´

MIC ëŒ€ LSC

802.1X ë˜ëŠ” Anyconnect Phone VPNì—ì„œ ëŒ€ë¶€ë¶„ì˜ ê¸°ì—…ì´ ê¸°ë³¸ì ìœ¼ë¡œ ì‚¬ìš©íŒ ê²ƒì´ MICì™€ LSCì˜ ì°¨ì´ì ì´ë¬´ì—‡ì¸ì§€ ì•Œì•„ë´ì•¼ í•©ëë‹¤.

ëª¨ë“ Cisco ì „í™”ê¸°ëŠ” ê³µìž¥ì—ì„œ ë¯¸ë¦¬ ì„¤ì¹˜ëœ MICì™€ í•¨ê»˜ ì œê³µëë©°, ì´ë¥¼ ì´ìš©íŒ Cisco Manufacturing CA ì¸ì¦ì„œ ì¤‘ í•˜ëë¡(Cisco Manufacturing CA, Cisco Manufacturing CA SHA2, CAP-RTP-001 ë˜ëŠ” CAP-RTP-002 ì¸ì¦ì„œ)ì—ì„œ ì˜í•´ ì„œëª…ëë©°, ì „í™”ê¸°ì—ì„œ ì œê³µëë‹ ë•Œ ìœ íš¨í•œ Cisco ì „í™”ê¸°ìž„ì„ í™•ì¸í•©ëë‹¤. ì „í™”ê¸° ê°€ê²© ì • ê³¼ ë˜ëŠ” CUCM í´ëŸ¬ìŠ¤í„°ì—ì„œ ì†¡ì‹ í•œ ì¸ì¦ì„œì§€ ì „í™•ì¸í•©ëë‹¤. ì´ëŠ” ì˜ì¡´ì ìœ¼ë¡œ ê¸°ë³¸ì ìœ¼ë¡œ ì œê³µëë©° ì¶”ê°€ ì¡°ì¹˜ê° ìš”êµ¬ëì§ ìì¼ë©° ê°€ìž¥ ì•ˆì „í•œ ì˜µì…˜ìœ¼ë¡œ ê°„ì£¼ëë‹¤.

ë°˜ëŒ€ë¡œ LSCëŠ” ê´€ë¦¬ìžê°€ ì •ì˜í•œ ì „í™”ê¸°ì—ì„œ ì¸ì¦ì„œë¥¼ ì„¤ì¹˜í•˜ê³ CUCM ê²Œì‹œìžì—ì„œ CAPF ì¸ì¦ì„œë¡œ ì„œëª…í•©ëë‹¤. ì´ë¥¼ ìœ„í•´ CAPF ì¸ì¦ì„œê°€ ë°°í¬ëì§ ìì•˜ê±°ë, ë¨¼ì € 802.1X ë˜ëŠ” Anyconnect VPNì„ ê¶ì•• ìžˆìŠµë‹ˆë‹¤. MIC ëŒ€ì‹ LSCì—ì„œ ì¸ì¦ì„œ ì¸ì¦ì„œì„ ê°€ì ¸ì™€ ë¨¼ì € ì¸ì¦ì„œ ì „í™”ê° ìžˆìŠµë‹ˆë‹¤. MIC ì¸ì¦ì„œë¥¼ í›¨ì”¬ ë¨ ì„¸ì–´ì• ìˆ™ì—ì„œ ì œê³µëë‹ ë•Œë¬¸ì— LSCëŠ” ì¼ë°˜ì ìœ¼ë¡œ 802.1X ë˜ëŠ” Anyconnect VPNì„ ê¶ì•• ìžˆìŠµë‹ˆë‹¤.

êµì„±

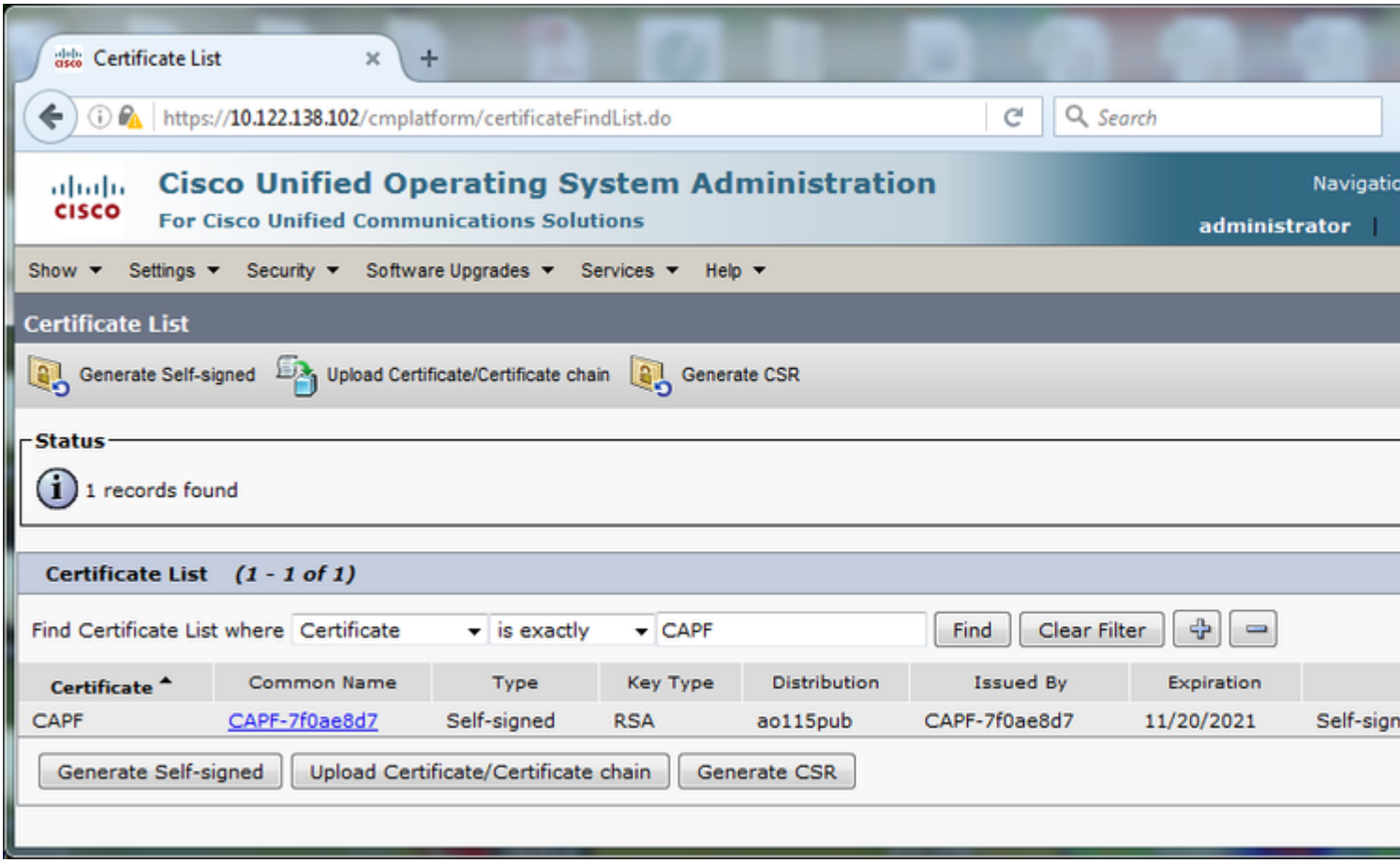
ë„¤íŠ¸ì›Œí¬ íŠ¸ í¬ë¡œì§€

ì´ ë¬¸ì„œì—ëŠ” ë‹¤ìŒ ë²„ì „ì˜ ì„¤ì •ì„ ê¸°ì¤€ìœ¼ë¡œ í•©ëë‹¤.

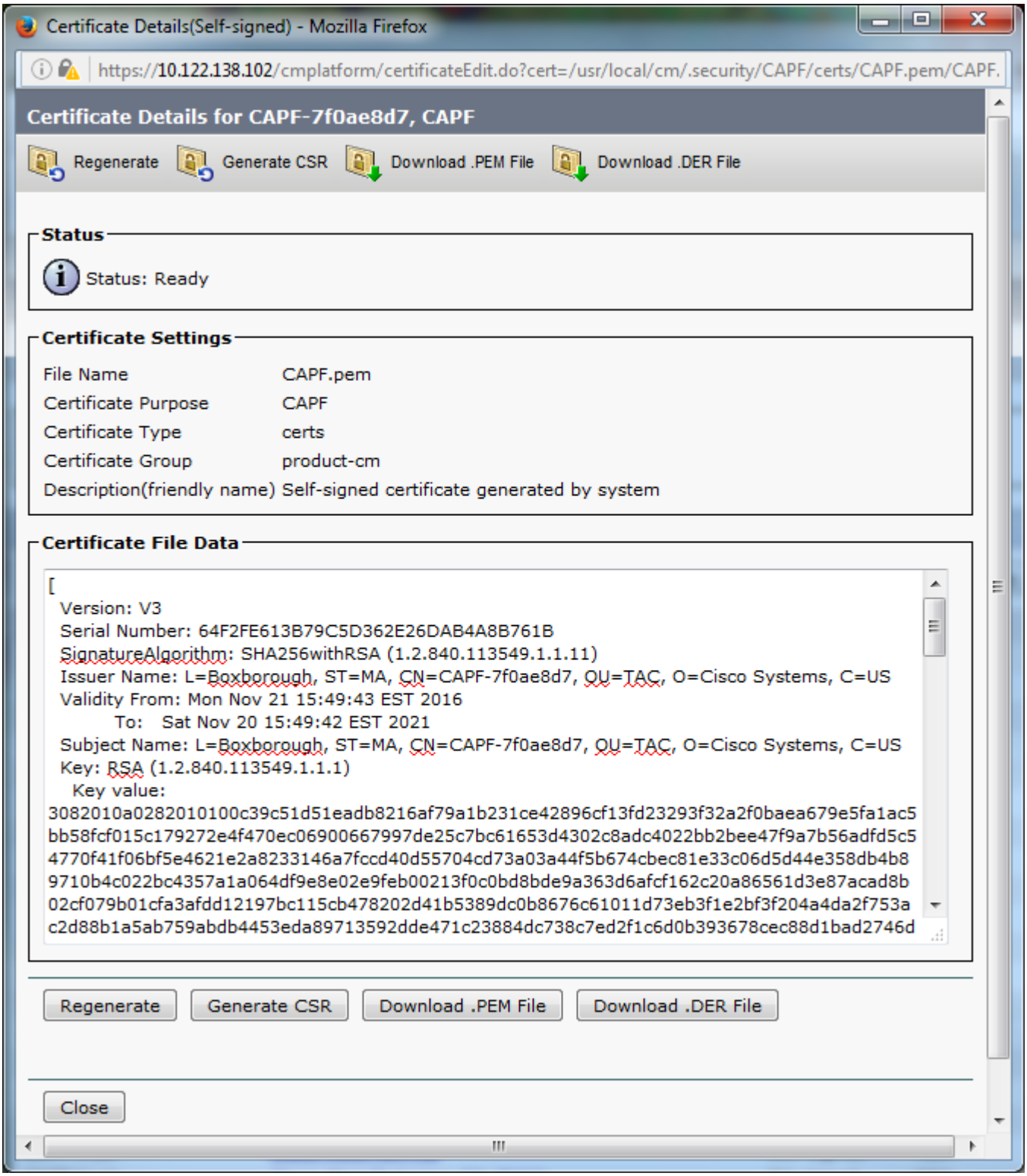
- ao115pub - 10.122.138.102 - CUCM ê²Œì‹œìžê° ë°° TFTP ì„œë²„
- ao115sub - 10.122.138.103 - CUCM ê°€ìž…ìžê° ë°° TFTP ì„œë²„

CAPF ì¸ì¦ì„œê° ë§Œë£Œë˜ì§€ ì•Šì•˜ëŠ”ì§€, ë˜ëŠ” ê°€ê¹Œìš´ ìž¥ëž˜ì—ì„œ ë§Œë£Œë˜ì§€ ì•Šì•˜ëŠ”ì§€ í™•ì¸í•©ëë‹¤. **Cisco** Unified **OS Administration(Cisco Unified OS ê´€ë¦¬)** > **Security(ë³´ì•ˆ)** > **Certificate Management(ì¸ì¦ì„œ ê´€ë¦¬)ë¡œ ì´ë™í•©ëë‹¤** ë‹¤ì¸Œ **Find Certificate List where Certificate is exactly CAPF is** as the image(ì´ë¯¸ì§€ì—ì„œ í‘œì‹œëë¡

ëŒ€ë¡œ ì⁄¸ì¦⁄ì„œê°€ **ì •í™•íž^ CAPF**ì⁄¸ ì⁄¸ì¦⁄ì„œ ëª©ë¡⁄ ì°¾ê¸°)ë¡œ ì⁄´ë⁄™í•©ë‹ˆë‹¤.



Certificate **Details(**ì⁄¸ì¦⁄ì„œ ì„¸ë¶€ì‚¬í•) íŽ˜ì⁄´ì§€ë¥¼ ì—´ë ¤ë©´ Common Name(ì⁄¼ë°˜ ì⁄´ë¦„)ì⁄„ í⁄´ë¦í•©ë‹ˆë‹¤. ì⁄´ë¯¸ì§€ì—⁄ í'œì‹œë⁄œ ê²ƒì²˜ëŸ¼ ì⁄¸ì¦⁄ì„œê°€ ë§Œë£Œë⁄˜ëŠ" ì‹œê¸°ë¥¼ í™•ì⁄¸í•˜ê¸° ìœ„í•´ **Certificate File Data ì°½ì—⁄ì„œ** Validity From: ë°⁄ To: ë, ì§œë¥¼ ê²€ì‚¬í•©ë‹ˆë‹¤.



CAPF ì•¸ì¦ì„œ ë§Œë£Œë•Œ ê²½ê³ ë§Œë£Œë• ê²½ê³ í•´ê²¹ ì•¸ì¦ì„œ ë¼ì´ì„ ìŠ¤ ì—…ë°ì´íŠ¸ ì‹œ LSC ì„¤ì •ì˜ í”„ë¡œì„¸ìŠ¤ë¥¼ ì§„í–‰í•˜ì§€ ë§ˆì‹ì‹œì˜¤. ë”°ë•Œì„œ CAPF ì•¸ì¦ì„œë¥¼ ë§Œë£Œë¡œ ì•¸í•´ ê°€ê²©ëŠ” ì‹œê¸° ë‚´ì— LSCë¥¼ ìž¬ë°°í¬í•˜ì§€ ëª»í• 경우 ì—…ê·¸ë ˆì´ë“œ ë°©ë²•ì—ë„ 영향을 미칠 수 있습니다. CAPF 인증서 업그레이드 프로세스에 대한 자세한 내용은 CUCM [Certificate Regeneration/Renewal Process 구성](#) 가이드를 참조하십시오.

ë§ˆì°¬ê°€ì§€ë¡œ, íƒ€ì‚¬ ì•¸ì¦ì„œ ê¸°ë°˜ì—ì—œ ì„œëª…í•œ CAPF 인증서 업그레이드 í•„ìš”í•œ 경우 ë‹¤ìŒê³¼ ì•„ëž˜ì˜ ì„¤ì •ì„ 따르십시오. 서명한 CAPF 인증서 CSR(Certificate

Signing Request) íŒŒì¼ ìƒ€ì„± ë°© ê°€ì ¸ì˜¤ê¸° ì§€ê¸ˆ ì™„ë£Œí•˜ê±°, ì,¬ì „ í…ŒìŠ¤íŠ¸ë¥¼ ìœ„í•´ ìž²´ ì„œëª…ë©´ LSCë¥¼ ì,¬ìš©í•˜ì—¬ ì»´í“¨ê³ ˆì›„ê³ ˆ ê³„ì†ë•©ë‹ˆ,¤. ì„œëª…í•œ íƒ€ì,¬ CAPF ì›¸ì¦ ì„œê° í•„ìš”í•œ ê²½ìš°, ì¼ë°˜ì ìœ¼ë¡œ ìž¬ì´ˆê¸°í™” ì„œëª… CAPF ì›¸ì¦ ì„œëœ ì›´ ê¸°ŠŽì›„ ë¨¼ì € êµ¬ì„±í•˜ê³„ íŒŒìŠ¤íŠ¸ë¥¼ ì¶œë ¥í•©ë‹ˆ,¤. ì›´ë ‡ê²Œ í•˜ë©´ ì„œë“œíŒŒíŒ…ì° ì„œëª… CAPF ì›¸ì¦ ì„œì™€ì›˜ íŒŒìŠ¤ê°€ ì¤íŒ¨ë¡œ ê²°ê³¼ê°€ ë,˜ìŠµë‹ˆ,¤. ê²°ê³¼ê°€ ì„±ê³µì ì´ë©´ ì„œëª… CAPF ì›¸ì¦ ì„œê°€ ìž¬ìƒ ì„±ëŠ¥ ê²½ê³ ë¥¼ ì´ˆê³¼í•˜ì§€ ì•Šì•˜ë‹¤ëŠ” ì˜ë¯¸ìž…ë‹ˆ,¤.

**ê²½ê³ ** : CAPF ì„œëª¹ì„œ ê°™ì„±ì™€ ë™ì¼í•œ ì´ë¦„ì˜ ì¸ì¦ëœ ë™ì•ˆ CAPF ì›¸ì¦ ì„œë¥¼ ë‹¤ì‹œ ìƒ€ì„±í•˜ê±°, ì„œëª…íŒŒì¼ì„œ ì„œëª…ë…ë©´ CAPF ì›¸ì¦ ì„œë¥¼ ê°€ì ¸ì˜¤ê¸° CUCMì—©ì„œ ì „ì²´ê°€ ìž¬ë¶€íŒ…ë¡œ ìž¬ì„œ •ë©©ë‹ˆ,¤. ì „ì²´ê°€ ì¤ì• ì•• ìžˆëŠ” ê²½ìš° ìœ ì§€ë¨¹ì¹˜ì—©ì„œ ì›´ ì ˆì°¨ë¥¼ ì™„ë£Œí•©ë‹ˆ,¤. ìž©ì„œ ë,˜ìš©ì©€ Cisco ë²„ê·¸ ID CSCue55353 - Add Warning when Regenerate TVS/CCM/CAPF Certificate that Phones Resetì©„ ì°¸ì¡°í•˜ì‹œì˜¤.

**ì°¸ê³ ** : CUCM ë²„ì „ì—©ì„œ SBDë¥¼ ì§€ì›©í•˜ëŠ” ê²½ìš° CUCM í©´ëŸ¬ìŠ¤í„°ê° í˜¼í•©© ëª¨ë“œë¡œ ì„¤ì •ë˜ì–´ ìžˆëŠ”ì§€ ì—¬ë¶€ì—©ì„œ ê´€ê³„ì—†ì´ ì©¸ì¸ì° ì °ì¨ê°€ ì ˆìš©ë©©ë‹ˆ,¤. SBDëŠ” CUCM ë²„ì „ 8.0(1) ì©´ìƒ©ì©˜ ì©¼ë¶€ìž…ë‹ˆ,¤. ì©´ ë²„ì „ì©˜ CUCMì—©ì„œëŠ” ITL íŒŒì©¼ì—© CUCM ê²Œì‹œì©˜ CAPF ì„œë¹„ìŠ¤ì—© ëŒ€í•œ ì©¸ì¦ ì°¸ì¡°ê° í©¬í¨ë©©ë‹ˆ,¤. ë”°ë©¼ì„œ ì„œì°¸/ì—…ê·¸ë ˆì´ë“œ ì¤‘ì—… CAPF ì„œë¹„ìŠ¤ì—© ëŒ€í•œ ì°¸ì¡°ê° ì¤‘ë‹¨ë˜ì§€ ì•Šë„ë¡ ì©¸ì¦ ì°¸ì¡°ê° ì¤‘ë‹¨ë˜ì§€ ì•Šë„ë¡ ì—…ê·¸ë ˆì´ë“œ ì „ì—© ì „ì²´ ì„œë¹„ìŠ¤ì—© ì—°ê²°ì—…ê³¼ ì©¸ì¦ ì°¸ì¡°ê° ì¤‘ë‹¨ë˜ì§€ ì•Šë„ë¡ ì©¸ì¦ ì°¸ì¡°ê° ì¤‘ë‹¨ë˜ì§€ ì•Šë„ë¡ ì—…ê·¸ë ˆì´ë“œ ì „ì—© ì „ì²´ ì„œë¹„ìŠ¤ì—© ì—°ê²°ì—…ê³¼

ì„œë¹„ìŠ¤ê°€ ë¹„í™œì„±í™”ë�˜ì—ˆì§€ë§Œ ë°©ê¸ˆ í™œì„±í•œ ê²½ìš° **Cisco Unified Serviceability(Cisco Unified ì„œë¹„ìŠ¤ ê°€ìš©ì„±) > Tools(íˆ´) > Control Center - Feature Services(ì œì–´ ì„¼í„° - ê¸°ëŠ¥ ì„œë¹„ìŠ¤) > Server(ì„œë²„) > CM Services(CM ì„œë¹„ìŠ¤)ë¡œ ì�´ë™í•©ë‹ˆë‹¤.** ë‹¤ì�Œ, CUCM í�´ëŸ¬ìŠ¤í„°ì�˜ ëª¨ë“ TFTP ì„œë²„ì—�ì„œ Cisco TFTP ì„œë¹„ìŠ¤ë¥¼ ë‹¤ì‹œ ì‹œìž‘í•˜ì—¬ ITL íŒŒì¼¼ì�„ ë‹¤ì‹œ ìƒ�ì„±í•©ë‹ˆë‹¤. ë˜�í•œ Cisco ë²„ê·¸ ID CSCuj78330ì�„ ì¹˜ì§€ ì•Šì•„ì•¼ í•©ë‹ˆë‹¤.

ì°¸ê³ ** : ì�´ ìž‘ì—…ì€ ì„„ í˜„ìž¬ CUCM ê²Œì‹œìž CAPF ì�¸ì¦�ì„œê°€ íŒŒì¼¼ì—� í¬í•¨ë˜ì–´ ìžˆëŠ”ì§€ í™•ì�¸í•˜ê¸° ìœ„í•´ CUCM í�´ëŸ¬ìŠ¤í„°ì˜ ëª¨ë“ TFTP ì„œë²„ì—�ì„œ **show itl ëª…ë ¹ì„ ì‹¤í–‰í•©ë‹ˆë‹¤.

<#root>

ITL Record #:1

BYTEPOS TAG LENGTH VALUE

------- --- ------ -----

1 RECORDLENGTH 2 727

2 DNSNAME 2

3 SUBJECTNAME 64 CN=CAPF-7f0ae8d7;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US

4 FUNCTION 2 CAPF

5 ISSUERNAME 64 CN=CAPF-7f0ae8d7;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US

6 SERIALNUMBER 16 64:F2:FE:61:3B:79:C5:D3:62:E2:6D:AB:4A:8B:76:1B

7 PUBLICKEY 270

8 SIGNATURE 256

11 CERTHASH 20 C3 E6 97 D0 8A E1 0B F2 31 EC ED 20 EC C5 BC 0F 83 BC BC 5E

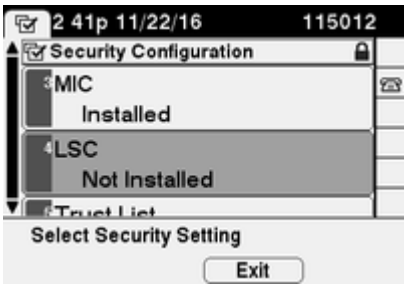
12 HASH ALGORITHM 1 null

```
 ITL Record #:2
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 717
2 DNSNAME 2
3 SUBJECTNAME 59 CN=ao115pub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 TVS
5 ISSUERNAME 59 CN=ao115pub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 6B:99:31:15:D1:55:5E:75:9C:42:8A:CE:F2:7E:EA:E8
7 PUBLICKEY 270
8 SIGNATURE 256
11 CERTHASH 20 05 9A DE 20 14 55 23 2D 08 20 31 4E B5 9C E9 FE BD 2D 55 87
12 HASH ALGORITHM 1 null

 ITL Record #:3
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 1680
2 DNSNAME 2
3 SUBJECTNAME 71 CN=ITLRECOVERY_ao115pub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 System Administrator Security Token
5 ISSUERNAME 71 CN=ITLRECOVERY_ao115pub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 51:BB:2F:1C:EE:80:02:16:62:69:51:9A:14:F6:03:7E
7 PUBLICKEY 270
8 SIGNATURE 256
9 CERTIFICATE 963 DF 98 C1 DB E0 61 02 1C 10 18 D8 BA F7 1B 2C AB 4C F8 C9 D5 (SHA1 Hash HEX)
This etoken was not used to sign the ITL file.

 ITL Record #:4
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 717
2 DNSNAME 2
3 SUBJECTNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 TVS
5 ISSUERNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 65:E5:10:72:E7:F8:77:DA:F1:34:D5:E3:5A:E0:17:41
7 PUBLICKEY 270
8 SIGNATURE 256
11 CERTHASH 20 00 44 54 42 B4 8B 26 24 F3 64 3E 57 8D 0E 5F B0 8B 79 3B BF
12 HASH ALGORITHM 1 null

 ITL Record #:5
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 1652
2 DNSNAME 2
3 SUBJECTNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 System Administrator Security Token
5 ISSUERNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 48:F7:D2:F3:A2:66:37:F2:DD:DF:C4:7C:E6:B9:CD:44
7 PUBLICKEY 270
8 SIGNATURE 256
```

```
9 CERTIFICATE 959 20 BD 40 75 51 C0 61 5C 14 0D 6C DB 79 E5 9E 5A DF DC 6D 8B (SHA1 Hash HEX)
This etoken was used to sign the ITL file.

 ITL Record #:6
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 1652
2 DNSNAME 2
3 SUBJECTNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 TFTP
5 ISSUERNAME 59 CN=ao115sub;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 48:F7:D2:F3:A2:66:37:F2:DD:DF:C4:7C:E6:B9:CD:44
7 PUBLICKEY 270
8 SIGNATURE 256
9 CERTIFICATE 959 20 BD 40 75 51 C0 61 5C 14 0D 6C DB 79 E5 9E 5A DF DC 6D 8B (SHA1 Hash HEX)

 ITL Record #:7
 ----
BYTEPOS TAG LENGTH VALUE
------- --- ------ -----
1 RECORDLENGTH 2 1031
2 DNSNAME 9 ao115sub
3 SUBJECTNAME 62 CN=ao115sub-EC;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
4 FUNCTION 2 TFTP
5 ISSUERNAME 62 CN=ao115sub-EC;OU=TAC;O=Cisco Systems;L=Boxborough;ST=MA;C=US
6 SERIALNUMBER 16 53:CC:1D:87:BA:6A:28:BD:DA:22:B2:49:56:8B:51:6C
7 PUBLICKEY 97
8 SIGNATURE 103
9 CERTIFICATE 651 E0 CF 8A B3 4F 79 CE 93 03 72 C3 7A 3F CF AE C3 3E DE 64 C5 (SHA1 Hash HEX)

The ITL file was verified successfully.
```

CAPF í•ëª©ì�´ ITLì�˜ í•ëª©ìœ¼ë¡œ í™•ì�¸ë�˜ë©´ ì „í™”ê¸°ì—�ì„œ ì�¸ì¦ì—…ì�„ ì™„ë£Œí• ì^˜ ìžˆìŠµë‹ˆë‹¤. ì�´ ì˜ˆì—�ì„œëŠ” Null ë¬¸ìž�ì—´ ì�¸ì¦ì�„ ì‚¬ìš©í•˜ì—¬ 2048ë¹„íŠ¸ RSA ì�¸ì¦ì„œë¥¼ ì„¤ì¹˜í•©ë‹ˆë‹¤.

ì „í™”ê¸°ì—�ì„œ ì�´ë¯¸ì§€ ë˜€ë¡œ LSCê°€ ì•„ì§ ì„¤ì¹˜ë˜ì§€ í•Šì•˜ëŠ”ì§€ í™•ì�¸í•©ë‹ˆë‹¤. ì˜ˆë¥¼ ë“¤ì–´, 79XX ì‹œë¦¬ì¦ˆ ì „í™”ê¸°ì—�ì„œ **Settings(ì„¤ì •)** > **4 - Security Configuration(4 - ë³´ì•ˆ ì»¨í”¼ê·¸ ˆì�´ì…˜)** > **4 - LSCë¡œ ì�´ë™í•©ë‹ˆë‹¤**.

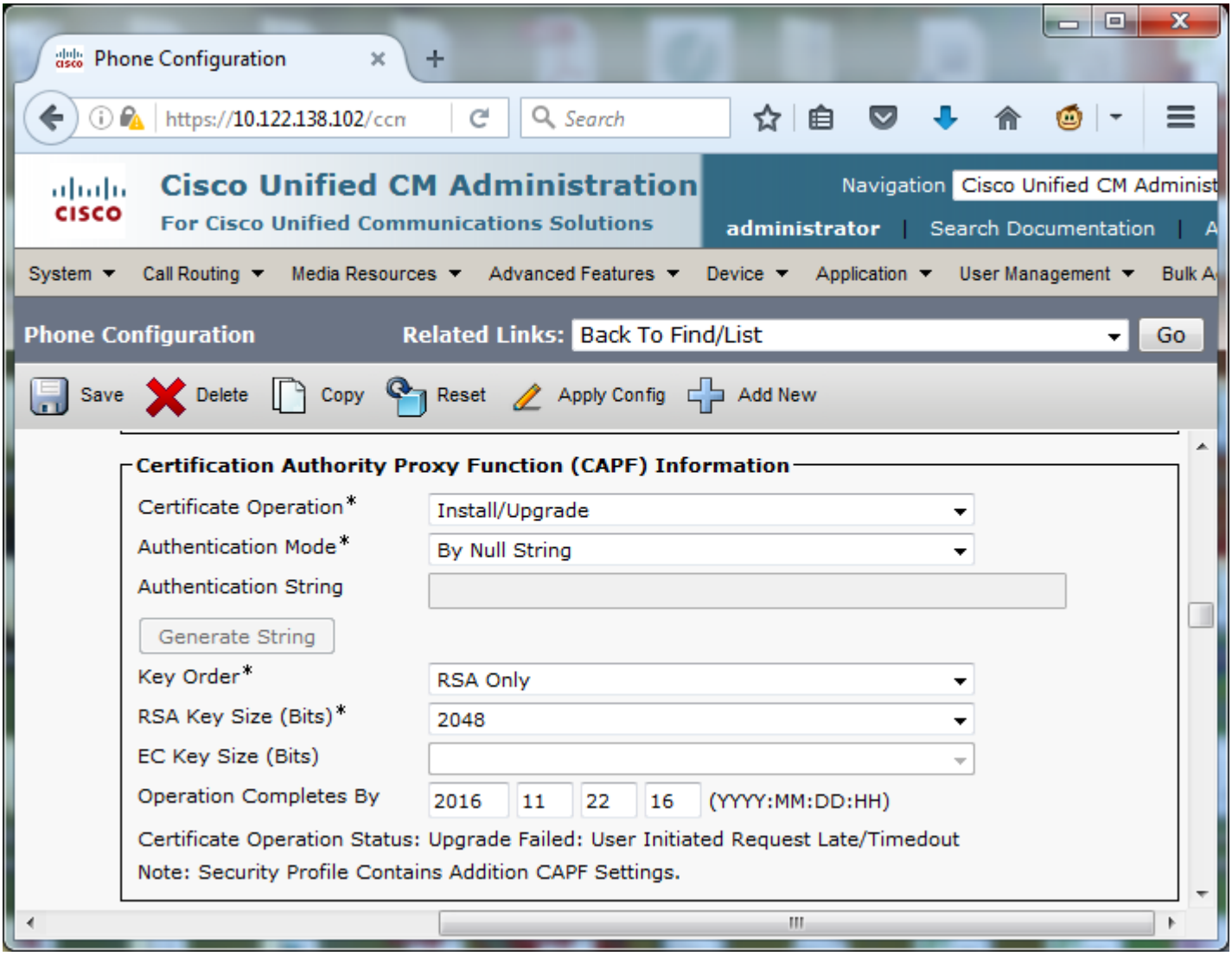


ì „í™”ê¸°ì—�ì„œ ì „í™”ê¸° ì»¨í”¼ê·¸ ˆì�´ì…˜ íŽ˜ì�´ì§€ë¥¼ ì—½ë‹ˆë‹¤. **Cisco** Unified **CM Administration(Cisco Unified CM ê´€ë¦¬) > Device(ë””ë°”ì�´ìŠ¤) > Phone(ì „í™”ê¸°)ìœ¼ë¡œ ì�´ë™í•©ë‹ˆë‹¤**.

ê·¸ë¦¼ê³¼ ê°™ì�´ ì „í™”ê¸° ì»¨í”¼ê·¸ ˆì�´ì…˜ íŽ˜ì�´ì§€ì—�ì„œ CAPF Information ì„¹ì…˜ì—�ë‹¤ì„œ

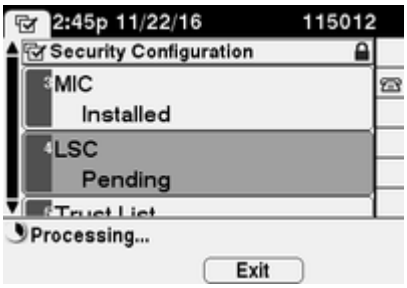
ì •ë³´ë¥¼ ìž…ë ¥í•©ë‹ˆë‹¤.

- Certificate Operation(ì⍰¸ì¦⍰ì„œ ìž‘ì—…)ì—⍰ì„œ **Install/Upgrade(ì„¤ì¹˜/ì—…ê·¸ë ˆì⍰´ë“œ)ë¥¼** ì„ íƒ⍰í•©ë‹ˆë‹¤.
- ì⍰¸ì¦⍰ ëª¨ë“œì⍰˜ ê²½ìš° By Null **Stringì⍰„ ì„ íƒ⍰í•©ë‹ˆë‹¤**
- ì⍰´ ì˜ˆì—⍰ì„œëŠ” Key Order(í,¤ ìˆœì„œ), RSA Key Size(Bits)(RSA í,¤ í⍰¬ê¸°(ë¹„íŠ¸)) ë°⍰ EC Key Size(Bits)(EC í,¤ í⍰¬ê¸°(ë¹„íŠ¸))ë¥¼ ì‹œìŠ¤í…œ ê¸°ë³¸ê°’ìœ¼ë¡œ ì„¤ì •ë⍰œ ìƒ⍰íƒœë¡œ ë‘¡ë‹ˆë‹¤.
- Operation Completes By(ìž‘ì—… ì™„ë£Œìž⍰)ì—⍰ ì ⍰ì–´ë⍰„ 1ì‹œê°„ ì⍰´ìƒ⍰ì⍰˜ ë¯¸ëž˜ ë, ì§œì™€ ì‹œê°„ì⍰„ ìž…ë ¥í•©ë‹ˆë‹¤.

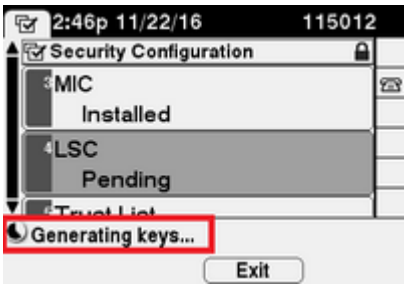


ì»¨í”¼ê·¸ë ˆì⍰´ì…˜ ë³€ê²½ ì‚¬í•ì⍰„ ì €ìž¥í•œ ë‹¤ì⍰Œ ì»¨í”¼ê·¸ë ˆì⍰´ì…˜**ì⍰„ ì ⍰ìš©í•©ë‹ˆë‹¤**.

ì „í™”ê¸°ì⍰˜ LSC ìƒ⍰íƒœê°€ ê·¸ë¦¼ê³¼ ê°™ì⍰´ Pending(ë³´ë¥˜ ì¤‘)ìœ¼ë¡œ ë³€ê²½ë⍰©ë‹ˆë‹¤.



ì „í™”ê¸°ëŠ” ì⍰´ë¯¸ì§€ì—⍰ í‘œì‹œë⍰œ ëŒ€ë¡œ í‚¤ë¥¼ ìƒ⍰ì„±í•©ë‹ˆë‹¤.



ì „í™”ê¸°ê°€ ìž¬ì„¤ì •ë⍰˜ê³ ìž¬ì„¤ì •ì⍰´ ì™„ë£Œë⍰˜ë©´ ì⍰´ë¯¸ì§€ì—⍰ í‘œì‹œë⍰œ ëŒ€ë¡œ ì „í™”ê¸° LSC ìƒ⍰íƒœê°€ Installed(ì„¤ì¹˜ë⍰¨)ë¡œ ë³€ê²½ë⍰©ë‹ˆë‹¤.

ì⍰´ ë©”ì‹œì§€ëŠ” ê·¸ë¦¼ê³¼ ê°™ì⍰´ ì „í™”ê¸°ì⍰˜ ìƒ⍰íƒœ ë©”ì‹œì§€ì—⍰ë⍰„ í‘œì‹œë⍰©ë‹ˆë‹¤.

ë‹¤ì⍰Œì⍰„ í™•ì⍰¸í•©ë‹ˆë‹¤.

êµì„±ì⍰´ ì˜¬ë°”ë¥´ê²Œ ìž‘ë⍰™í•˜ëŠ”ì§€ í™•ì⍰¸í•˜ë ¤ë©´ ì⍰´ ì„¹ì…˜ì⍰„ í™œìš©í•˜ì‹ì‹œì˜¤.

ì—¬ëŸ¬ ì „í™”ê¸°ì—⍰ì„œ LSC ì⍰¸ì¦⍰ì„œ ì„¤ì¹˜ë¥¼ í™•ì⍰¸í•˜ë ¤ë©´ Security Guide for Cisco Unified Communications Manager, Release 11.0(1)ì⍰˜ Generate CAPF Report ì„¹ì…˜ì⍰„ ì°¸ì¡°í•˜ì‹ì‹œì˜¤. ë˜⍰ëŠ” LSC ìƒ⍰íƒœë³„ ì „í™”ê¸° ì°¾ê¸° ë˜⍰ëŠ” ì⍰¸ì¦⍰ ë¬¸ìž⍰ì—´ ì ˆì°¨ë¥¼ ì‚¬ìš©í•˜ì—¬ CUCM ê´€ë¦¬ ì›¹ ì⍰¸í„°íŽ˜ì⍰´ìŠ¤ ë‚´ì—⍰ì„œ ë⍰™ì⍰¼í•œ ë⍰°ì⍰´í„°ë¥¼ ë³¼ ìˆ˜ ìžˆìŠµ‌ë‹ˆë‹¤.

ì „í™”ê¸°ì—⍰ ì„¤ì¹˜ë⍰œ LSC ì⍰¸ì¦⍰ì„œì⍰˜ ë³µì‚¬ë³¸ì⍰„ ê°€ì ¸ì˜¤ë ¤ë©´ How to Retrieve

Certificates from Cisco IP Phonesarticleì€„ ì°¸ì¡°í•˜ì‹œì˜¤.

ë¬¸ì œ í•´ê²°

ì€´ ì„¹ì…˜ì—ì„œëŠ” ì»¨í”¼ê·¸ë ˆì€´ì…˜ ë¬¸ì œë¥¼ í•´ê²°í•˜ëŠ” ì •ë³´ë¥¼ ì œê³µí•©ë‹ˆë‹¤.

ìœ íš¨í•œ CAPF ì„œëª„ ì—†ì€€

LSCê°€ ì„¤ì¹˜ë€˜ì§€ ì•ŠìŠµë‹ˆë‹¤. ì „í™”ê¸°ì€˜ ìƒíƒœ ë©”ì‹§€ì—€ **ìœ íš¨í•œ CAPF ì„œëª„ê°€ ì—†ìŠµë‹ˆë‹¤**. ì€´ëŠ” ITL íŒŒì¼¼ì—€ CAPF í•ëª©ì€´ ì—†ì€Œì€„ ë,˜íƒ€ëƒ…ë‹ˆë‹¤. CAPF ì„œëë¹„ìŠ¤ê°€ í™œì„±í™”ë€˜ì—€ í™•ì€´ì§€ ë‹¤ì‹œ ì‹œìž‘ë©ë‹ˆë‹¤. ë‹¤ì‹œ ì‹œìž‘í•œ í›„ ITL íŒŒì¼¼ì—€ CAPF ì€¸ì¦ìš© ì„œëª…ì´ ìžˆëŠ”ì§€ í™•ì€´ì§€ ì„¸ì…˜ ì „í™”ê²° ì€¸ì¦ì„ ì‹œë„í•©ë‹ˆë‹¤. ì „í™”ê¸°ì—€ ë³´ì•ˆ ITL íŒŒì¼¼ì€„ ì„¤ì¹˜í•˜ì§€ ì•Šê±°ë‚˜ ì „í™”ê¸°ì—€ ì„œëª…ì´ ìžˆëŠ”ì§€ í™•ì€´ì§€ ì•Šì€„ ë•Œë©´ CAPF ì„œëë¹„ í•ëª©ì€´ íˆŠíŠ¸ì€´ë¦„ ë˜ëŠ” ì •ë¦„ì¼œ¼ë¡œ í‘œì‹œëë˜ëŠ” ê²½ìš° ì „í™”ê°€ ê°€ë‹¤ë¦¬ëŠ” IP ì£¼ì†Œë¡œ í™•ì€´ì§€ ìžˆëŠ”ì§€ í™•ì€´ì§€ë‹¤ì‹œ.

LSC: ì—°ê²° ì‹¤íŒ¨

LSCê°€ ì„¤ì¹˜ë€˜ì§€ ì•ŠìŠµë‹ˆë‹¤. ì „í™”ê¸°ì€˜ ìƒíƒœ ë©”ì‹§€ì—€ëŠ” LSC: **Connection Failed(ì—°ê²° ì‹¤íŒ¨)ê°€ í‘œì‹œëë©ë‹ˆë‹¤**. ì€´ëŠ” ë‹¤ì€Œ ì¡°ê±´ ì¤‘ í•˜ë,˜ë¼ë,¼ ì´ìž^ìŠµë‹ˆë‹¤.

- ITL íŒŒì¼¼ì€˜ CAPF ì€¸ì¦ì™€ í˜„ìž¬ ì€¸ì¦ì„œê°€ ì€¼ì¹˜í•˜ì§€ ì•Šì¼ë©´ CAPF ì„œëë¹„ìŠ¤ê°€ ì‹¤íŒ¨ì¤‘ì…ë‹ˆë‹¤.
- CAPF ì„œëë¹„ìŠ¤ê°€ ì¤‘ì§€ëë˜ê±°ë,˜ ë¹„í™œì„±í™”ëë©ë‹ˆë‹¤.
- ì „í™”ê¸°ê°€ ë„íŠ¸ì›Œí€ë¥¼ íŠµí•´ CAPF ì„œëë¹„ìŠ¤ì—€ ì—°ê²°í• ìˆ˜ ìžˆëŠ”ì§€ í™•ì€´ì§€ë‹¤ì‹œ.

CAPF ì„œëë¹„ìŠ¤ê°€ í™œì„±í™”ëë˜ì—€ í•˜ë,˜ , CAPF ì„œëë¹„ìŠ¤ë¥¼ ë‹¤ì‹œ ì‹œìž‘í•˜ê³ , í´ëŸ¬ìŠ¤í„° ì „ì²´ì—€ì„œ TFTP ì„œëë¹„ìŠ¤ë¥¼ ë‹¤ì‹œ ì‹œìž‘í•˜ê³ , ì „í™”ê¸°ë¥¼ ìž¬ì„¤ì • í•˜ì—¬ ìµœì‹ ITL íŒŒì¼¼ì„ ì„¤ì¹˜í•©ë‹ˆë‹¤. ë¬¸ì œê°€ ê³„ì†ë˜ë©´ CUCM ê²Œì‹œìžë¡œì—€ íŒ¨í‚· ìº¡ì²˜ë¥¼ ê°€ì ¸ì˜¨ ë‹¤ìŒ CAPF ì„œëë¹„ìŠ¤ í¬íŠ¸ 3804ì—€ì„œ ì–‘ë°©í–¥ íŠµì‹ ì€´ ìžˆëŠ”ì§€ ë¶„ì„í•©ë‹ˆë‹¤. ê·¸ ‡ì§€ ì•Šì€€ ê²½ìš° ë„íŠ¸ì›Œí€¬ ë¬¸ì œê°€ ë°œìƒí• ìˆ˜ ìžˆìŠµë‹ˆë‹¤.

LSC: ì‹¤íŒ¨

LSCê°€ ì„¤ì¹˜ë€˜ì§€ ì•ŠìŠµë‹ˆë‹¤. ì „í™”ê¸°ì€˜ ìƒíƒœ ë©”ì‹§€ì—€ëŠ” LSC: **Failed(LSC: ì‹¤íŒ¨)ê°€ í‘œì‹œëë©ë‹ˆë‹¤**. Phone Configuration(ì „í™”ê¸° ì»¨í”¼ê·¸ë ˆì´ì…˜) ì¹¹ íŽ˜ì€´ì§€ì—€ëŠ” **Certificate Operation Status(ì€¸ì¦ì„œ ìž‘ì—… ìƒíƒœ): Upgrade Failed(ì—…ê·¸ë ˆì´ë“œ ì‹¤íŒ¨): User Initiated Request Late/Timeout(ì‚¬ìš©ìž€ê°€ ì‹œìž‘í•œ ìš”ì² ì§€ì—°/ì‹œê°„ ì´ˆê³¼)ì€´ í‘œì‹œëë©ë‹ˆë‹¤**. ì€´ëŠ” ìž‘ì—… ì™„ë£Œ ë, ì§œê°€ ë§Œë£Œì™€ ì‹œê°„ì€´ ìžˆëŠ”ì§€ í™•ì€´ì§€ë‹¤ì‹œ. ì ì–´ë€ 1ì‹œê°„ ì€´ìƒ ê²½ê³¼í•œ ë, ì§œì™€ ì‹œê°„ì€´ ìžˆë ¥í˜ê³ ì€´ì„ ë€˜ì—€ ì‹œìž‘ëë˜ëŠ” ì‹œê°„ì€´ ìžˆìŠµë‹ˆë‹¤.

LSC: ìž‘ì—… ë³´ë¥˜ ì¤‘

LSCê°€ ì„¤ì¹˜ë�˜ì§€ ì•ŠìŠµë‹ˆë‹¤. ì „í™”ê¸°ì�˜ ìƒíƒœ ë©”ì‹œì§€ì— LSC: **Connection Failed(ì—°ê²° ì‹¤íŒ¨)ê°€ í‘œì‹œë�©ë‹ˆë‹¤**. Phone Configuration(ì „í™”ê¸° ì»¨í”¼ê·¸ ˆì�´ì...˜) íŽ˜ì�´ì§€ì— **Certificate Operation Status(ì•¸ì¦ì—… ìƒíƒœ): Operation Pending(ìž‘ì—... ë³´ë¥˜ ì¤‘')ì�´ í‘œì‹œë�©ë‹ˆë‹¤. Certificate Operation Status(ì•¸ì¦ì—… ìž‘ì—... ìƒíƒœ): Operation Pending** status(**ìž‘ì—… ë³´ë¥˜ ì¤‘** ìƒíƒœ)ë¥¼ ë³¼ ì˜ ìžˆëŠ” ì—¬ëŸ¬ ê°€ì§€ ì�´ìœ ê°€ ìžˆìŠµë‹ˆë‹¤. ê·¸ ì¤‘ ì�¼ë¶€ëŠ” ë‹¤ìŒê³¼ ê°™ìŠµë‹ˆë‹¤.

- ì „í™”ê¸°ì�˜ ITLì�´ í˜„ìž¬ í˜¼ë�™ë�œ TFTP ì„œë²„ì—�ì„œ ì‚¬ìš©ë�˜ëŠ” ê²ƒê³¼ ë‹¤ë¦…ë‹ˆë‹¤.
- ì†�ìƒë�œ ITLì�˜ ë¬¸ì œ. ì�´ ê²½ìš° ë""ë°"ì�´ìŠ¤ëŠ” ì‹ ë¢°í• ì^˜ ìžˆëŠ” ìƒíƒœë¥¼ ìžƒê²Œ ë�˜ë©° ì „í™”ê¸°ì—�ì„œ ì�´ì œ ITLRecovery ì•¸ì¦ì„œë¥¼ ì‚¬ìš©í•˜ë„ë¡ êº•ì œí•˜ë ¤ë©´ CUCM ê²Œì‹œìž�ì—�ì„œ **utils itl reset localkey ëª…ë ¹ì•„** ì‹¤í–‰í•´ì•¼ í•©ë‹ˆë‹¤. í�´ëŸ¬ìŠ¤í„°ì€ ëª¨ë"ˆ ê²½ìš° utils ctl reset localkey ëª…ë ¹ì•„ **ì‚¬ìš©í•´ì•¼ í•©ë‹ˆë‹¤.** ë‹¤ì�Œì•€ CUCMì�˜ CLIì—�ì„œ ì†ìƒë�œ ITLì•„ ë³´ë ¤ê³ í• ë•Œ í‘œì‹œë�˜ëŠ” ì˜ˆìž...ë‹ˆë‹¤. ITLì•„ ë³´ê³ **utils itl reset localkey ëª…ë ¹ì•„** ì‹¤í–‰í•˜ë ¤ê³ í• ë•Œ ì˜¤ë¥˜ê°€ ìžˆì§€ë§Œ ë‘ ê²² ë²ˆì§¸ ì˜¤ë¥˜ê°€ í‘œì‹œë�˜ëŠ” ê²½ìš° Cisco ë„ê·¸ ID CSCus33755 ê²°í•¨ì�¼ ì˜ˆ ìžˆìŠµë‹ˆë‹¤. CUCM ë²„ì „ì´ ì˜¤í–¥ì•„ë„ ë°›ëŠ”ì§€ í™•ì•¸í•©ë‹ˆë‹¤.

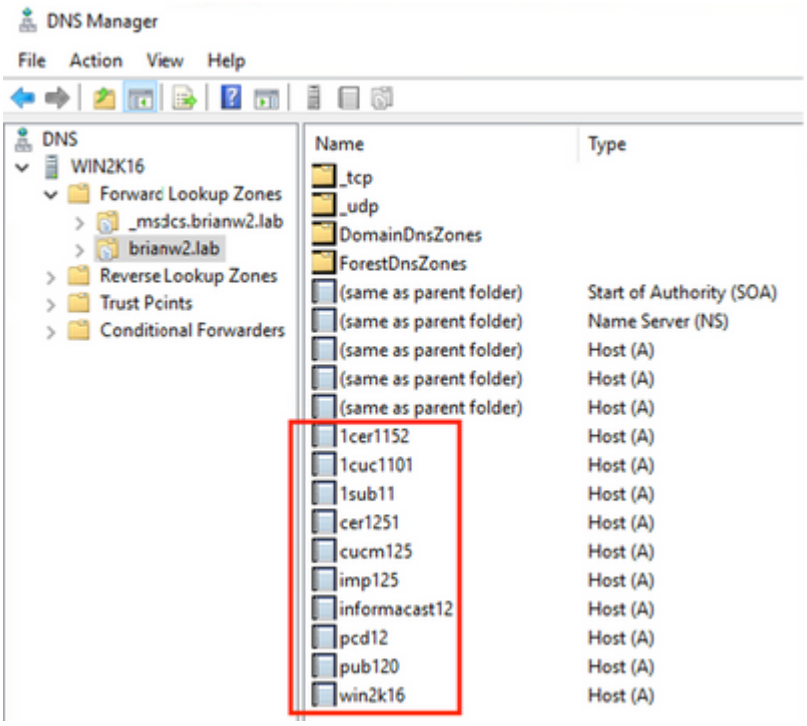
```
admin:show itl
Length of ITL file: 0
ITL File not found. To generate an ITL file, activate or restart the Cisco TFTP service as thi
servers.
Error parsing the ITL File.


admin:utils itl reset localkey
Enter CCM Administrator password :

Locating active Tftp servers in the cluster.....

Unable to determine the active and running  TFTP nodes in the cluster
Ensure that the DB replication is working on all nodes and the correct Password has been en
Then retry the command

Executed command unsuccessfully
chmod: changing permissions of `/var/log/active/cm/trace/dbl/sdi/replication_scripts_output
```

- TVS ì˜¤ë¥˜ë¡œ ì•¸í•´ ì „í™”ê°€ ìƒˆ LSCë¥¼ ì•¸ì¦í•˜ì§€ ëª»í•©ë‹ˆë‹¤.
- ì „í™”ê¸°ì—�ì„œ MIC ì•¸ì¦ì„œë¥¼ ì‚¬ìš©í•˜ì§€ë§Œ ì „í™”ê¸° ì»¨í”¼ê·¸ ˆì•¸ì...˜ íŽ˜ì§€ì•¸ CAPF(Certificate Authority Proxy Function) ì •ë³´ ì„¹ì…˜ì—�ì„œ Authentication Mode(ì•¸ì¦ ëª¨ë"œ)ê°€ Existing Certificate(LSCì—� ìš©ì„)ë¡œ ì„¤ì •ë•Œ ìžˆìŠµë‹ˆë‹¤.
- ì „í™”ê¸°ì—�ì„œ CUCMì�˜ FQDNì•„ í™•ì•¸í• ˆì˜ ì—†ìŠµë‹ˆë‹¤.

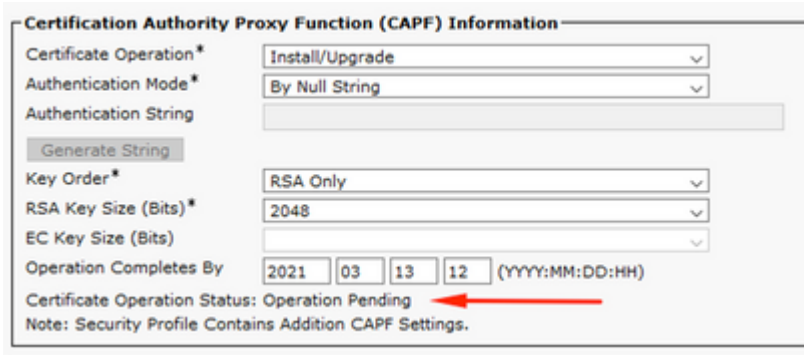
ë§ˆì§€ë§‰ ì‹œë„ ë¡¤ì˜¤ë²—ì—�ì„œëŠ” ì „í™”ê°€ CUCMì�˜ FQDNì•„ í™•ì•¸í• ˆì˜ ì—†ëŠ” ê²½ìš°ì—¡ì—� í‘œì‹œë�˜ëŠ” ë¸ìš©ìž ì‹œë®¬ë ˆì´ˆì…˜ ì‹¤íŒ¨ ë©”ì‹œì§€ì—¡ë¥¼ ì„¤ì •í•©ë‹ˆë‹¤. í˜„ìž¬ ì•¸ì¦ì„œ ë‹¤ì‹œ ìƒì—…ì—�ì„œ ë‚˜ì¤‘ì—¡ ì„¤ì •ë¼ ìžˆìŠµë‹ˆë‹¤.

- ë²„ì „ 11.5.1.15038-2ë¥¼ ì‹¤í–‰í•˜ëŠ” CUCM ê²Œì‹œìž€ ë°© ê°€ìž…ìž€
- Windows 2016 Serverë¥¼ ë,´ DNS ì„œë²„ë¡œ ì„¤ì •

í…ŒìŠ¤íŠ¸ì—ëŠ” êµ¬ì„±ë€œ PUB11 CUCM ì„œë²„ì—€ ëŒ€í•œ DNS í•ëª©ì€´ ì—†ìŠµë‹ˆë‹¤.



Labì€˜ ì „í™”ê¸° ì¤‘ í•˜ë‚˜(8845)ì—€ LSCë¥¼ í'¸ì‹œí•˜ë ¤ê³ í–ˆìŠµë‹ˆë‹¤. ì—¬ì „ížˆ Certificate Operation Status(ì€¸ì¦ ì€„ìž'ì—… ìƒ€íƒœ): Operation Pending(ìž'ì—… ë³´ë¥˜ ì¤‘)ì€´ í'œì‹œë€©ë‹ˆë‹¤.

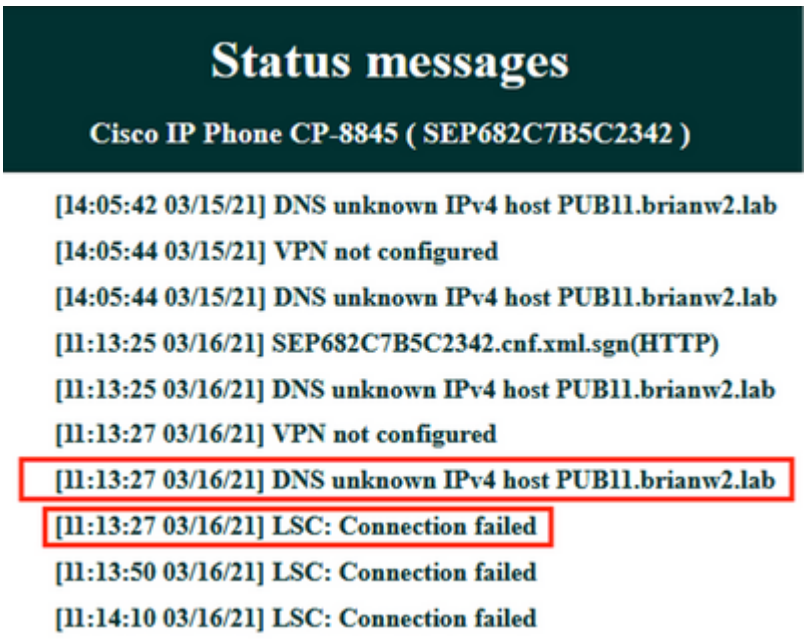


êµì„±ë€œ DNS ì„œë²„ ì£¼ì†Œë¡œ ì¿¼ë¦¬ë¥¼ ì „ë‹¬í•˜ê¸° ì „ì—€ ì „í™”ê¸° ì½˜ì†” ë¡œê·¸ì—€ì„œ í•´ë‹¹ ë¡œì»¬ ì°€ìƒ IP(127.0.0.1)ë¥¼ í™•ì€¸í•©ë‹ˆë‹¤.

```
0475 INF Mar 12 15:07:53.686410 dnsmasq[12864]: query[A] PUB11.brianw2.lab from 127.0.0.1
0476 INF Mar 12 15:07:53.686450 dnsmasq[12864]: forwarded PUB11.brianw2.lab to X.X.X.X
0477 INF Mar 12 15:07:53.694909 dnsmasq[12864]: forwarded PUB11.brianw2.lab to X.X.X.X
0478 INF Mar 12 15:07:53.695263 dnsmasq[12864]: reply PUB11.brianw2.lab is NXDOMAIN-IPv4
0479 INF Mar 12 15:07:53.695833 dnsmasq[12864]: query[A] PUB11.brianw2.lab from 127.0.0.1
0480 INF Mar 12 15:07:53.695865 dnsmasq[12864]: cached PUB11.brianw2.lab is NXDOMAIN-IPv4
0481 WRN Mar 12 15:07:53.697091 (12905:13036) JAVA-configmgr MQThread|NetUtil.traceIPv4DNSErrors:? - DNS

++ However, we see that the phone is not able to resolve the FQDN of the CUCM Publisher. This is because
```

```
0482 ERR Mar 12 15:07:53.697267 (12905:13036) JAVA-configmgr MQThread|cip.sec.TvsProperty:? - Failed to

++ Afterwards, we see the CAPF operation fail. This is expected because we do not have a DNS mapping for

0632 NOT Mar 12 15:07:55.760715 (12905:13036) JAVA-configmgr MQThread|cip.sec.CertificateProperty:? - Ce
0633 NOT Mar 12 15:07:55.761649 (322:17812) SECUREAPP-RCAPF_START_MODE: Start CAPF - mode:[1]([NULL_STR]
0634 NOT Mar 12 15:07:55.761749 (322:17812) SECUREAPP-CAPF_CLNT_INIT:CAPF clnt initialized
0635 NOT Mar 12 15:07:55.761808 (322:17812) SECUREAPP-CAPFClnt: SetDelayTimer - set with value <0>
0636 ERR Mar 12 15:07:55.761903 (322:17812) SECUREAPP-Sec create BIO - invalid parameter.
0637 ERR Mar 12 15:07:55.761984 (322:17812) SECUREAPP-SEC_CAPF_BIO_F: CAPF create bio failed
0638 ERR Mar 12 15:07:55.762040 (322:17812) SECUREAPP-SEC_CAPF_OP_F: CAPF operation failed, ret -7
0639 CRT Mar 12 15:07:55.863826 (12905:13036) JAVA-configmgr MQThread|cip.sec.CertificateProperty$1:? -

++ What we would expect to see is something similar to the following where DNS replies with the IP addre

4288 INF Mar 12 16:34:06.162666 dnsmasq[12864]: query[A] PUB11.brianw2.lab from 127.0.0.1
4289 INF Mar 12 16:34:06.162826 dnsmasq[12864]: forwarded PUB11.brianw2.lab to X.X.X.X
4290 INF Mar 12 16:34:06.164908 dnsmasq[12864]: reply PUB11.brianw2.lab is X.X.X.X
4291 NOT Mar 12 16:34:06.165024 (12905:13036) JAVA-configmgr MQThread|cip.sec.TvsProperty:? - Resolve Tv
```

ì•„ëž˜ì⍰˜ ì „í™”ê¸° ìƒ⍰íƒœ ë©”ì‹œì§€ì—⍰ì„œ PUB11.brianw2.labì⍰„ í™•ì⍰¸í• ì^˜ ì—†ì⍰Œì⍰„ ì°¸ì¡°í•˜ì‹ì‹œì˜¤. ê·¸ëŸ° ë‹¤ì⍰Œ LSC: **Connection failed(LSC: ì—°ê²° ì‹¤íŒ¨) ë©”ì‹œì§€ë¥¼** í™•ì⍰¸í•©ë‹ˆë‹¤.



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Cisco ë²„ê·¸ ID CSCub62243 - LSC ì„¤ì¹˜ê°€ ê°„í—⍰ì ⍰ìœ¼ë¡œ ì‹¤íŒ¨í•˜ê³ CAPF Serverê°€ ì •ì§€ë⍰¨

ê³ ë ¤í• ê°œì„ ê²°í•¨:

Cisco ë²„ê·¸ ID CSCuz18034 - ë§Œë£Œ ìƒ⍰íƒœì™€ í•¨ê»˜ LSC ì„¤ì¹˜ ì—”ë“œí⍰¬ì⍰¸íŠ¸ì—⍰ ëŒ€í•œ ë³´ê³ í•„ìš”

ê´€ë ¨ ì •ë³´

ì⓪´ ë¬¸ì„œì—⓪ì„œëŠ” AnyConnect VPN í⓪´ë⓪¼ì⓪´ì–¸íŠ¸ ì⓪¸ì¦⓪ ë°⓪ 802.1X ì⓪¸ì¦⓪ì⓪„ ìœ„í•œ ì»¨í…⓪ìŠ¤íŠ¸ì—⓪ì„œ LSCë¥¼ ì‚¬ìš©í•˜ëŠ” ë°©ë²•ì—⓪ ëŒ€í•œ ìž⓪ì„¸í•œ ì •ë³´ë¥¼ ì œê³µí•©ë‹ˆë‹¤.

- AnyConnect VPN Phone - IP Phone, ASA ë°⓪ CUCM ë¬¸ì œ í•´ê²°
- ID ê¸°ë°˜ ë„¤íŠ¸ì›Œí‚¹ ì„œë¹„ìŠ¤: IEEE 802.1X ì§€ì›⓪ ë„¤íŠ¸ì›Œí⓪¬ êµ¬ì¶• ë°⓪ êµ¬ì„± ì„¤ëª…ì„œì⓪˜ IP í…”ë ˆí⓪¬ë‹ˆ

LSC ì⓪¸ì¦⓪ì„œëŠ” CAPF ì⓪¸ì¦⓪ì„œê°€ ì•„ë‹ˆë⓪¼ ì„œë“œíŒŒí‹° ì⓪¸ì¦⓪ ê¸°ê´€ì—⓪ì„œ ì§⓪ì ‘ ì„œëª…í•˜ëŠ” ê³ ê¸‰ ìœ í˜•ì⓪˜ LSC ì»¨í”¼ê·¸ë ˆì⓪´ì…˜ë⓪„ ìžˆìŠµë‹ˆë‹¤.

ìž⓪ì„¸í•œ ë‚´ìš©ì⓪€ CUCM ì„œë“œíŒŒí‹° CA ì„œëª… LSC ìƒ⓪ì„± ë°⓪ ê°€ì ¸ì˜¤ê¸° ì»¨í”¼ê·¸ë ˆì⓪´ì…˜ ì˜ˆë¥¼ ì°¸ì¡°í•˜ì‹ì‹œì˜¤.

- ê¸°ìˆ ì§€ì›⓪ ë°⓪ ë¬¸ì„œ âˆ’ Cisco Systems

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