

# 確定由於證書問題導致的ASA智慧許可失敗

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## 簡介

本文檔介紹如何確定由於證書握手失敗導致的ASA智慧許可故障。

## 必要條件

### 需求

本文件沒有特定需求。

### 採用元件

本文件所述內容不限於特定軟體和硬體版本。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除 ( 預設 ) 的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

## 背景資訊

本文檔介紹如何應對2016年3月和2018年10月發生的更改，在這些更改中，主機tools.cisco.com的Web伺服器被遷移到不同的根證書頒發機構(CA)證書。遷移後，某些ASA ( 自適應安全裝置 ) 裝置在註冊ID令牌或嘗試續訂當前授權時無法連線到智慧軟體許可門戶(託管在tools.cisco.com上)。已確定這是與證書相關的問題。具體來說，向ASA提供的新證書由不同於ASA預期並預載入的中間CA簽署。

## 問題

嘗試向智慧軟體許可門戶註冊ASA v時，註冊失敗，出現連線或通訊故障。show license registration和call-home test profile license命令會顯示這些輸出。

```
<#root>
```

```
ASA v#
```

```
show license registration
```

```
Registration Status: Retry In Progress.  
Registration Start Time: Mar 22 13:25:46 2016 UTC  
Registration Status: Retry In Progress.  
Registration Start Time: Mar 22 13:25:46 2016 UTC  
Last Retry Start Time: Mar 22 13:26:32 2016 UTC.  
Next Scheduled Retry Time: Mar 22 13:45:31 2016 UTC.  
Number of Retries: 1.  
Last License Server response time: Mar 22 13:26:32 2016 UTC.  
Last License Server response message:
```

```
Communication message send response error
```

```
<#root>
```

```
ASA v#
```

```
call-home test profile License
```

```
INFO: Sending test message to DDCEService  
ERROR: Failed:
```

```
CONNECT_FAILED(35)
```

但是，ASA v可以解析tools.cisco.com並使用TCP ping在TCP埠443上連線。

## 系統日誌和調試輸出

嘗試註冊後ASA v上的Syslog輸出可以顯示以下內容：

```
<#root>
```

```
%ASA-3-717009: Certificate validation failed. No suitable trustpoints found to validate  
certificate serial number: 250CE8E030612E9F2B89F7058FD, subject name:  
cn=VeriSign Class 3 Public Primary Certification Authority - G5,ou=(c) 2006 VeriSign\, Inc.  
- For authorized use only,ou=VeriSign Trust Network,o=VeriSign\, Inc.,c=US, issuer name:  
ou=Class 3 Public Primary Certification Authority,o=VeriSign\, Inc.,c=US .
```

```
%ASA-3-717009: Certificate validation failed. No suitable trustpoints found to validate  
certificate serial number: 513FB9743870B73440418699FF, subject name:
```

```
cn=Symantec Class 3 Secure Server CA - G4
```

```
,ou=Symantec Trust Network,o=Symantec
```

Corporation,c=US, issuer name: cn=VeriSign Class 3 Public Primary Certification Authority - G5,ou=(c) 2006 VeriSign\, Inc. - For authorized use only,ou=VeriSign Trust Network, o=VeriSign\, Inc.,c=US .

有關詳細資訊，請在嘗試其他註冊時運行這些debug命令。出現安全套接字層錯誤。

```
debug license 255
debug license agent all
debug call-home all
debug ssl 255
```

具體來說，此訊息被視為輸出的一部分：

```
error:14090086:SSL routines:SSL3_GET_SERVER_CERTIFICATE:certificate verify
failed@s3_cInt.c:1492
```

在預設ASA配置中，有一個名為\_SmartCallHome\_ServerCA的信任點，該信任點載入了證書並將其頒發給使用者名稱「cn=Verisign Class 3 Secure Server CA - G3」。

<#root>

ASAv#

```
show crypto ca certificate
```

CA Certificate

```
Status: Available
Certificate Serial Number: 6ecc7aa5a7032009b8cebc2d491
Certificate Usage: General Purpose
Public Key Type: RSA (2048 bits)
Signature Algorithm: SHA1 with RSA Encryption
Issuer Name:
  cn=VeriSign Class 3 Public Primary Certification Authority - G5
  ou=(c) 2006 VeriSign\, Inc. - For authorized use only
  ou=VeriSign Trust Network
  o=VeriSign\, Inc.
  c=US
Subject Name:
```

```
  cn=VeriSign Class 3 Secure Server CA - G3
```

```
  ou=Terms of use at https:// verisign /rpa (c)10
  ou=VeriSign Trust Network
  o=VeriSign\, Inc.
  c=US
```

OCSF AIA:

```
  URL: http://ocsp verisign
```

CRL Distribution Points:

```
  [1] http://crl verisign/pca3-g5.crl
```

Validity Date:

```
start date: 00:00:00 UTC Feb 8 2010
end date: 23:59:59 UTC Feb 7 2020
Associated Trustpoints: _SmartCallHome_ServerCA
```

但是，在前面的系統日誌中，ASA指示它從智慧軟體許可門戶獲取由名為「cn=Symantec Class 3 Secure Server CA - G4」的中間伺服器簽名的證書。

---

 註：主題名稱相似，但有兩個差異；Verisign與Symantec在開頭，G3與G4在結尾。

---

## 解決方案

ASAv需要下載包含正確中間和/或根證書的信任池，以便驗證鏈。

在9.5.2及更高版本中，ASAv將信任池配置為在裝置本地時間10:00自動匯入：

```
<#root>
```

```
ASAv#
```

```
sh run crypto ca trustpool
```

```
crypto ca trustpool policy
  auto-import
```

```
ASAv#
```

```
sh run all crypto ca trustpool
```

```
crypto ca trustpool policy
  revocation-check none
  crl cache-time 60
  crl enforcenextupdate
  auto-import
  auto-import url http://www.cisco.com/security/pki/trs/ios_core.p7b
  auto-import time 22:00:00
```

如果是初始安裝，且當時尚未啟動域名系統(DNS)查詢和Internet連線，則自動匯入尚未成功，需要手動完成。

在舊版本 ( 如9.4.x ) 上，裝置上未配置trustpool auto-import，需要手動匯入。

在任何版本上，此命令都會匯入trustpool和相關證書：

```
<#root>
```

```
ASAv#
```

```
crypto ca trustpool import url http://www.cisco.com/security/pki/trs/ios_core.p7b
```

```
Root file signature verified.
```

```
You are about to update the current trusted certificate pool
with the 17145 byte file at http://www.cisco.com/security/pki/trs/ios_core.p7b
Do you want to continue? (y/n)
Trustpool import:
  attempted: 14
  installed: 14
  duplicates: 0
  expired: 0
  failed: 0
```


## 驗證

使用手動命令匯入信任池或在本地時間晚上10:00之後匯入信任池後，此命令將驗證信任池中是否存在已安裝的證書：

```
<#root>
ASAv#
show crypto ca trustpool policy
14 trustpool certificates installed

Trustpool auto import statistics:
  Last import result: FAILED
  Next scheduled import at 22:00:00 UTC Wed Mar 23 2016
Trustpool Policy
  Trustpool revocation checking is disabled
  CRL cache time: 60 seconds
  CRL next update field: required and enforced
  Automatic import of trustpool certificates is enabled
  Automatic import URL: http://www.cisco.com/security/pki/trs/ios_core.p7b
  Download time: 22:00:00
  Policy Overrides:
    None configured
```

---

 注意：在先前的輸出中，由於DNS上次自動嘗試時未運行，上次自動更新匯入失敗，因此它仍然將上次自動匯入結果顯示為失敗。但是，已運行手動trustpool更新，並且已成功更新trustpool（因此顯示14個證書已安裝）。

---

安裝trustpool後，可以再次運行token registration命令以向智慧軟體許可門戶註冊ASAv。

```
<#root>
ASAv#
license smart register idtoken id_token force
```

如果ASAv已註冊到智慧軟體許可門戶，但授權續訂失敗，也可以手動嘗試這些操作。

```
<#root>
```

```
ASAv#
```

```
license smart renew auth
```

## 根CA證書更改 — 2018年10月

tools.cisco.com的根CA證書已於2018年10月5日星期五更改。

如果不允許與[http://www.cisco.com/security/pki/trs/ios\\_core.p7b](http://www.cisco.com/security/pki/trs/ios_core.p7b)通訊，則當前部署的ASAv版本9.6(2)及更高版本以及運行ASA的Firepower 2100不會受到此更改的影響。前面提到的所有ASA智慧許可平台都預設啟用證書自動匯入功能。「show crypto ca trustpool」的輸出包含「QuoVadis Root CA 2」證書：

```
CA Certificate
Fingerprint: 5e397bddf8baec82e9ac62ba0c54002b
Issuer Name:
  cn=QuoVadis Root CA 2
  o=QuoVadis Limited
  c=BM
Subject Name:
  cn=QuoVadis Root CA 2
  o=QuoVadis Limited
  c=BM
```

對於新部署，您可以發出「crypto ca trustpool import default」命令，並下載包含QuoVadis證書的預設思科證書捆綁包。如果這不起作用，您可以手動安裝證書：

```
asa(config)# crypto ca trustpoint QuoVadisRootCA2
asa(config-ca-trustpoint)# enrollment terminal
asa(config-ca-trustpoint)# crl configure
asav(config-ca-crl)# crypto ca authenticate QuoVadisRootCA2
Enter the base 64 encoded CA certificate.
End with the word "quit" on a line by itself
```

```
-----BEGIN CERTIFICATE-----
MIIFtzCCA5+gAwIBAgICBQkwdQYJKoZIhvcNAQEFBQAwRTElMAUUEBhMCQk0x
GTAXBgNVBAoTEFFf1b1ZHZG1zIEExpbW10ZWQxGzAZBgNVBAMTE1F1b1ZHZG1zIFJv
b3QgQ0EgMjAeFw0wNjExMjM0ODIzMDBaFw0zMTExMjM0ODIzMDZNaMEUxCzAJBgNV
BAYTAKJNMkRwFwYDVQQKEwBRdW9WYW9WYWRpcyBMAW1pdGVkMRswGQYDVQQDEwJRdW9W
YWRpcyBSb290IENBIDwggIiMA0GCSqGSIb3DQEBAQUAA4ICDwAwggIKAoICAQCq
GMpL1A0ALa8DKYrwD4HIRkVwZHR0In6spRIZL4GtMh6QRr+jhiYaHv5+HBg6XJxg
Fyo6dIMzMH1hVBHL7avg5tKifvVrbxi3Cgst/ek+7wrGsxDp3MJGF/hd/aTa/55J
WpzmM+Yk1vc/u1srHh01wtZn/qtmUIttKGA79dgw8eTvI02kfN/+NsRE8Scd3bB
rrcCaoF6qUWD4gXmuVbB1DePSHFjIuwXZQeVikvfj8ZaCuWw419eaxGrDPmF60Tp
+ARz8un+XJiM9X0va7R+zdrCAitMOeGylZUtQofX1b0QQ7dsE/He3fbE+Ik/0XX1
ks0R1YqI0JDs3G3eicJlZcZaLdQP9nL9bFqyS2+r+eXyt66/3FsvbzSUR5R/7mp/i
Ucw6UwxI5g69ybR2B1LmEROFcmMDBOENisgGQLodKcfts1WZvB1JdxnwQ5hYIiz
PtGo/KPaHbDRsSNU30R2be1B2MGyIrZTHN81Hdyhdyox5C315eXbyOD/5YDXC20g
```

```
/z0hD7osFRXq17PSorW+8oyWHhqPHWykYTe5hnMz15eWniN9ggRMgeKh0bpnX5UH
oycR7hYQe7xFSkyyBNKr79X9DFHOUGoIMfmR2gyPZFwDwzqLID9ujWc90tb+fVuI
yV77zGHcizN300QyNQ1iBJIWENieJ0f70yHj+0sdWwIDAQABo4GwMIGtMA8GA1Ud
EwEB/wQFMAMBAf8wCwYDVR0PBAQDAgEGMBOGA1UdDgQWBQahGK8SEwzJQTU7tD2
A8QZRtGUazBuBgNVHSMZzB1gBQahGK8SEwzJQTU7tD2A8QZRtGUa6FJpEcwRTEL
MAKGA1UEBhMCQk0xGTAXBgNVBAoTEFF1b1ZhZG1zIEExpbW10ZWQxGzAZBgNVBAMT
E1F1b1ZhZG1zIFJvb3QgQ0EgMoICBQkwDQYJKoZIhvcNAQEFBQADggIBAD4Kfk2f
B1uornFdLwUvZ+YTRYPENvbzWCYMDbVHZF34tHLJRqUDGCdViXh9duqWNIAXINzn
g/iN/Ae4219NLmeyhP3ZRPx3UIHmFLTJDQtyU/h2BwdBR5YM++CCJpNVjP4iH2B1
fF/nJrP3MpCYUNQ3cVX2kiF495V5+vgtJodmVjB3pjd4M1IQWK4/YY7yarHvGH5K
WPKjaJW1acvvFYfzZnB4vsKqBUsfU16Y8Zs10Q80m/DShcK+JDSV6IZUaUt10Ha
B0+pUNqQjZRG4T7w1POQADj10+hA4bRuVhogzG9Yje0uRY/W6ZM/57Es3zrWIozc
hLsib9D45MY56QSIPO661V6bYCZJPVsAfV417CUw+v90m/xd2gNNWQjrLhVoQPR
TUIZ3Ph1WVaj+ahJefivDrkRoHy3au000LYmYjgahwz46P0u05B/B5EqHdZ+XIWD
mbA4CD/pXvk1B+TJYm5Xf6dQ1fe6yJvmjqIBxdZmv31h8zwc4bmCXF2gw+nYSL0Z
ohEUGW6yhhtoPkg3Go13XZZenMfvJ2II4pEZXNLxId26F0KC13GBuzGpn/Z9Yr9y
4a0THcyKJ1oJONDO1w2AFrR4pTqHTI2KpdVG1/IsELm8VCLAABpQ570su9t+Oza
8e0x79+Rj1QqCyXBjhnEUhAFZdwCEOrCMc0u
-----END CERTIFICATE-----
```

quit

```
INFO: Certificate has the following attributes:
Fingerprint:      5e397bdd f8baec82 e9ac62ba 0c54002b
Do you accept this certificate? [yes/no]: yes
```

Trustpoint CA certificate accepted.

% Certificate successfully imported

## 運行ASA的4100/9300平台

此問題已影響現場運行依賴Firepower可擴展作業系統(FXOS)提供智慧許可資訊的ASA的大約4100/9300:

受影響的裝置 :

<#root>

```
FP9300-1-A-A-A /license # show license all
```

```
Smart Licensing Status
```

```
=====
```

```
Smart Licensing is ENABLED
```

```
Registration:
```

```
Status: REGISTERED
```

```
Smart Account: TAC Cisco Systems, Inc.
```

```
Virtual Account: CALO
```

```
Export-Controlled Functionality: Allowed
```

```
Initial Registration: SUCCEEDED on Jul 01 18:37:38 2018 UTC
```

```
Last Renewal Attempt: FAILED on Oct 09 17:32:59 2018 UTC
```

```
Failure reason: Failed to authenticate server
```

## 解決步驟

要解決此問題，您需要建立新的信任點並在FXOS中輸入證書資料：

```
<#root>
```

```
FPR-2-A /license # scope security
FPR-2-A /security # enter trustpoint QuoVadisRootCA2
FPR-2-A /security/trustpoint* # set certchain
Enter lines one at a time. Enter ENDOFBUF to finish. Press ^C to abort.
Trustpoint Certificate Chain: (THIS PART NEEDS TO BE COPY/PASTED)
```

```
>
```

```
-----BEGIN CERTIFICATE-----
```

```
MIIFtzCCA5+gAwIBAgICBQkwdQYJKoZIhvcNAQEFBQAwRTELMAkGA1UEBhMCQk0x
GTAXBgNVBAoTEFF1b1ZhZG1zIEExpbW10ZWQxGzAZBgNVBAMTE1F1b1ZhZG1zIFJv
b3QgQ0EgMjAeFw0wNjExMjQxODIzMDBaFw0zMTExMjQxODIzMDZNaMEUxCzAJBgNV
BAYTAkNMRkwFwYDVQQKExBRdW9wYWRpcyBMAw1pdGVkMRswGQYDVQQDEExJRdW9w
YWRpcyBSb290IENBIDwggIiMA0GCSqGSIb3DQEBAQUAA4ICDwAwggIKAoICAQCa
GMpL1A0ALa8DKYrwd4HIRkvwZr0In6spRiXzL4GtMh6QRr+jhiYaHv5+HBg6XJxg
Fyo6dIMzMH1hVBHL7avg5tKiFvVrbxi3Cgst/ek+7wrGsxDp3MJGF/hd/aTa/55J
WpzmM+Yk1vc/u1srHh01wtZn/qtmUIttKGA79dgw8eTvI02kfn/+NsRE8Scd3bB
rrcCaoF6qUWD4gXmuVbB1DePSHFjIuwXZQeVikvfj8ZaCuWw419eaxGrDPmF60Tp
+ARz8un+XJiM9X0va7R+zdRcAi tMOeGylZUtQofX1b0Q07dsE/He3fbE+Ik/0XX1
ks0R1YqI0JDs3G3ei cJl cZaLDQP9nL9bFqyS2+r+eXyt66/3FsvbzSUR5R/7mp/i
Ucw6UwxI5g69ybR2B1LmER0FcmMDBOAEInsgGQLodKcfts1WZvB1JdxnwQ5hYIiz
PtGo/KPaHbDRsSNU30R2be1B2MGyIrZTHN81Hdyhdyox5C315eXbyOD/5YDXC20g
/z0hD7osFRXq17PSorw+8oyWHhQPHWykYTe5hnMz15eWniN9gqRMgeKh0bpnX5UH
oycR7hYQe7xFSkyyBNKr79X9DFHOUGoIMfmR2gyPZFwDwzqLID9ujWc90tb+fVuI
yV77zGHciZn300QyNQ1iBJIWIENieJ0f70yHj+0sdWwIDAQABo4GwMIgTMA8GA1Ud
EwEB/wQFMAMBAF8wCwYDVR0PBAQDAgEGMBOGA1UdDgQWBBQahGK8SEwzJQTU7tD2
A8QZRtGUazBuBgNVHSMEZzB1gBQahGK8SEwzJQTU7tD2A8QZRtGUa6FJpEcwRTEL
MAkGA1UEBhMCQk0xGTAXBgNVBAoTEFF1b1ZhZG1zIEExpbW10ZWQxGzAZBgNVBAMT
E1F1b1ZhZG1zIFJv b3QgQ0EgMoICBQkwdQYJKoZIhvcNAQEFBQADggIBAD4Kfk2f
B1uornFdLwUvZ+YTRYPENvbzwcYMDbVHZF34tHLJRqUDGCdViXh9duqWNIAXINzn
g/iN/Ae4219NLmeyhP3ZRPx3UIHmFLTJJDQTyU/h2BwdBR5YM++CCJpNVjP4iH2B1
fF/nJrP3MpCYUNQ3cVX2kiF495V5+vgtJodmVjB3pjd4M1IQWK4/YY7yarHvGH5K
WPKjaJw1acvvFYfzZnB4vsKqBUsfU16Y8Zs10Q80m/DSHck+JDSV6IZUaUt10Ha
B0+pUnQjZRG4T7w1PQADj10+hA4bRuVhogzG9Yje0uRY/W6ZM/57Es3zrWIoZc
hLsib9D45MY56QSIPO661V6bYCZJPVsAfv417CUw+v90m/xd2gNNWQjrLhVoQPR
TUIZ3Ph1WVaj+ahJefivDrkRoHy3au00LYmYjgahwz46P0u05B/B5EqHdZ+XIWD
mbA4CD/pXvk1B+TJYm5Xf6dQ1fe6yJvjmjqIBxdZmv31h8zwc4bmCXF2gw+nYSL0Z
ohEUGW6yhhtoPkg3GoixZZenMfvJ2II4pEZXLxId26F0KC13GBUZGpn/Z9Yr9y
4a0THcyKJ1oJONDO1w2AFrR4pTqHTI2KpdVG1/IsELm8VCLAABpQ570su9t+0za
8e0x79+rj1QqCyXBjhnEUhAFZdWCEOrCMc0u
```

```
-----END CERTIFICATE-----
```

```
>ENDOFBUF
```

```
<---manually type this on a new line after the -----END OF CERTIFICATE----- line and press ENTER
```

接下來，提交更改，然後續訂許可證：

```
FPR-2-A /security/trustpoint* # comm
FPR-2-A /security/trustpoint # scope license
FPR-2-A /license # scope licdebug
```



```
FPR-2-A /license/licdebug # renew
```

現在，您必須驗證許可是否已續訂：

```
<#root>
```

```
FP9300-1-A-A-A /license/licdebug # show license all
```

```
Smart Licensing Status
```

```
=====
```

```
Smart Licensing is ENABLED
```

```
Registration:
```

```
Status: REGISTERED
```

```
Smart Account: TAC Cisco Systems, Inc.
```

```
Virtual Account: CALO
```

```
Export-Controlled Functionality: Allowed
```

```
Initial Registration: SUCCEEDED on Jul 01 18:37:38 2018 UTC
```

```
Last Renewal Attempt: SUCCEEDED on Oct 09 17:39:07 2018 UTC
```

```
Next Renewal Attempt: Apr 07 17:39:08 2019 UTC
```

```
Registration Expires: Oct 09 17:33:07 2019 UTC
```

```
License Authorization:
```

```
Status: AUTHORIZED on Oct 09 17:39:12 2018 UTC
```

```
Last Communication Attempt: SUCCESS on Oct 09 17:39:12 2018 UTC
```

```
Next Communication Attempt: Nov 08 17:39:12 2018 UTC
```

```
Communication Deadline: Jan 07 17:33:11 2019 UTC
```

## 需要符合聯邦資訊處理標準(FIPS)的ASA軟體安裝

對於需要FIPS合規性的基於ASA的平台，QuoVadis根CA 2證書的匯入可能會因不符合簽名加密要求而失敗，並且此消息可以顯示：

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

```
Trustpoint CA certificate is not FIPS compliant.
```

```
% Error in saving certificate: status = FAIL
```

作為符合FIPS的ASA安裝的解決方法，請匯入HydrantID SSL ICA G2中間證書。HydrantID SSL ICA G2證書如下所示，並符合sha256WithRSAEncryption簽名演算法要求，請參閱本文中顯示的文檔，以便根據您的平台載入證書：

```
-----BEGIN CERTIFICATE-----
```

MIIGxDCCBKyGawIBAgIUdRcWd4PQQ361VsNX1G5FY7jr06wwDQYJKoZIHvcNAQEL  
BQAwRTELMakGA1UEBhMCQk0xGTAXBgNVBAoTEFF1b1ZlZG1zIEExpbW10ZWQxGzAZ  
BgNVBAMTE1F1b1ZlZG1zIFJvb3QgQ0EgMjAeFw0xMzEyMTcxNDI1MTBaFw0yMzEy  
MTcxNDI1MTBaMF4xZzAJBgNVBAYTA1VTMTAwLgYDVQKKEydIeWRyYw50SUQgKEF2  
YWxhbmNoZSBDbG91ZCBDb3Jwb3JhdG1vbikxHTAbBgNVBAMTFEh5ZlJhbnRJRjRBT  
U0wgSUNBIEcyMIIiCjANBgkqhkiG9w0BAQEFAAOCAg8AMIICGKCAgEA9p1ZOa9+  
H+tgdl+n+STF7bd0xvnOERYyjo8ZbKumzigNePSwbQYVWuso76GI843yjaX2rh0+  
Jt0NVJM41jVctf9qwcVduR7CEi0qJgpAUJyZUuB9IpFWF1Kz1403Leh6URuRZ43  
RzHaRmNtzkxxttGBuOtAg+i10uwiGAo9VQLgdON1qQFcrbp97/f08ZiQiPrbhLxCZ  
fXkYi3mktZVRFKXG62FHAuH1sLDXCKba3avDcUR7ykG4ZXcmp6k114UKa8JHOHPE  
NYyr0R6oHELOGZMox1nQcFwuYMX9sJdAUU/9SQVXYA6u6Ytx1pZiC8qhXM1IE00T  
Q9+q5ppffSUDMC4V/5IF5A6snKVP78M8qd/RMVswcjMUMEnov+wykwCbDLD+IREM  
A57XX+HojN+8XFTL9Jwge3z3Z1MwL7E54W3cI7f6cx05DVwoKxkd2jRIg37oqS1  
SU3z/bA9UXjHcT1/6BoLho2p9rWm6o1jANPeQuLHyGJ3hc19N8nDo2IATp70k1GP  
kd1qhIgrdkki7gBpanMOK98hKMPdQgs+NY4DkaMJqfrHzWR/CYkdyUCivFaepaFS  
K78+jVu1oCMOFOnucPXL2fQa3VQn+69+7mA324frjwzj9NzrHjd0a5UP7waPpd9W  
2jZoj4b+g+l+XU1SQ+9DWiuZtvfDw++k0BMCAwEAa0CAZEwggGNMBIGA1UdEwEB  
/wQIMAYBAf8CAQAwEAYDVR0gBHEwBzAIBgZngQwBAGewCAYGZ4EMAQICMA4GDCsG  
AQQBv1gAAmQBAjBJBgrBgEEAb5YAAOHBAAwOTA3BggrBgEFBQcCARYraHR0cDov  
L3d3dy5oeWRyYw50aWQuY29tL3N1cHBvcnQvcmlvbnNpdG9yeTB5BggrBgEFBQcB  
AQRmMQwKqYIKwYBBQUHAGGhmhOdHA6Ly9vY3NwLnF1b3ZlZG1zZ2xvYmFsLmNvbS9x  
dnJjYTIuY3J0MA4GA1UdDwEB/wQEAwIBBjAfbGNVHSMEGDAwGBQahGK8SEwzJQTU  
7tD2A8QZRtGUazA5BgNVHR8EMjAwMCG6LKAqh1hodHRwOi8vY3JsLnF1b3ZlZG1z  
Z2xvYmFsLmNvbS9xdnJjYTIuY3J0MA4GA1UdDgQWBBSYarYtLr+nqp/299YJr9WL  
V/mKtzANBgkqhkiG9w0BAQsFAAOCAgEA1raik8EDDUkpAnIOaj09/r4dpj/Zry76  
6SH1oYPo7eTGzpdanPMeGmuSmwdjUkFUPALuwwkaDERfz9xdyFL3N8CRg9mQhdtT  
3awQUv/iyXULXT87EgL3b8zzf8fhTS7r654m9WM2w7pFqfmx9qA1Fe9Xcv1ZrUu  
9hph+/MfWMrUju+VPL5U7hZvUppg66mS3BaN15rsXv2+Vw6kQsQC/82iJLHvtYVL/  
LwbNio18CsinDeyRE0J9w1YDqzcg5rhD0rtX4JEmBzq8yBRvHIB/023o/vIO5oxh  
83HiC/2Xgwksf1DKS3/z5nTzhsUJpCpwkN6nHp6gmA8JBXoU1KQz4eYHJCq/ZyC+  
BuY2vHpNx6101J5dmy7ps7J7d6mZXzguP3DQN84hjtJwJPqdf+/9RgLriXeFTqwe  
snxbk2FsPhwxhiNOH98GSZVvG02v10uHLVaf9B+puYpoUiEqgm1WG5mWW1PxHstu  
Ew9jBMcJ6wjQc8He9rSUMrhBr0HyhckdC99RgEvpcZpV2XL4nPPrTI2ki/c9xQb9  
kmhVGonSXY5aP+hDC+Ht+bxmc4wN5x+vB02hak8Hh8jIUSTRx0sRfJozU0R9ysyP  
EZAHFZ3Zivg2BaD4t0IS08/T2FDjG7PNUv0tgPAOKw2t94B+1evrSUhqJDU0Wf9c  
9vkaKoPvX4w=  
-----END CERTIFICATE-----

## 相關資訊

- [思科技術支援與下載](#)

## 關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。