配置在CUCM-CUBE/CUBE-SBC之间的SIP TLS

目录

[简介](#)
[先决条件](#)
[要求](#)
[使用的组件](#)
[配置](#)
[网络图](#)
[配置步骤](#)
[验证](#)
[故障排除](#)
目录

简介

本文帮助配置SIP传输层安全(TLS)在Cisco Unified Communications管理器(CUCM)和Cisco Unified Border Element (多维数据集)之间

先决条件

思科推荐有这些主题知识

- SIP协议
- 安全证书

要求

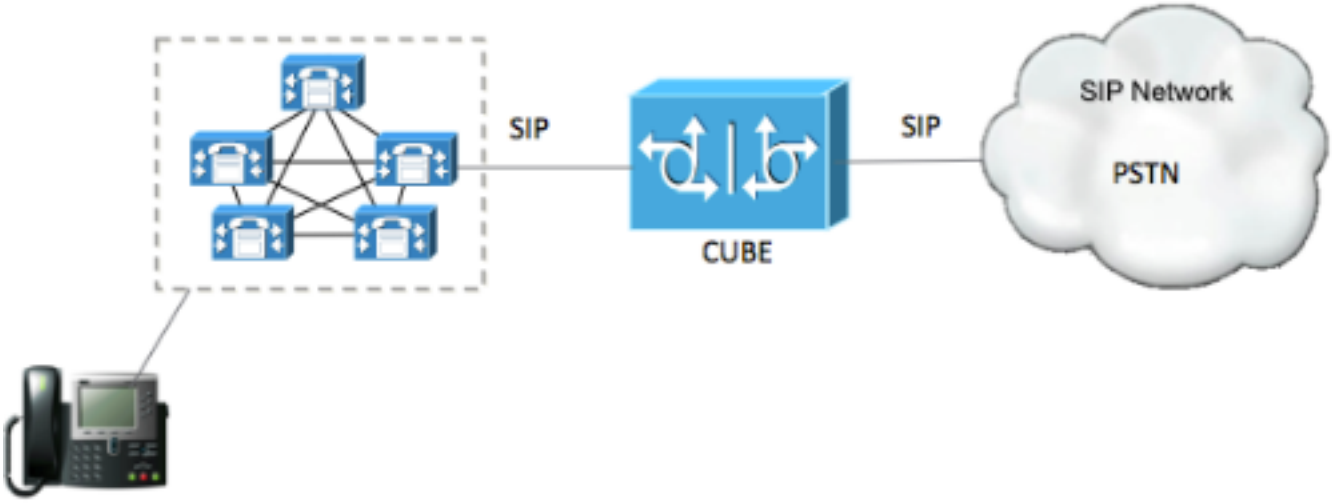
- 日期和时间在终端(推荐必须配比有同样Ntp source)。
- CUCM必须在混合模式。
- TCP连接要求(任何传输防火墙的开放端口5061)。
- 多维数据集必须有安全，并且UCK9准许已安装。

使用的组件

- SIP
- Selfsigned证书

配置

网络图



配置步骤

步骤1.创建信任点为了有CUBE的selfsigned证书

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

第二步：一旦信任点创建您运行crypto命令**pki登记CUBEtest**为了获得自己签署的certerticates

```
crypto pki enroll CUBEtest
% The fully-qualified domain name will not be included in the certificate
Generate Self Signed Router Certificate? [yes/no]: yes
```

如果登记正确您必须期待此输出

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

第三步：在您请获取证书后，您需要导出它

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

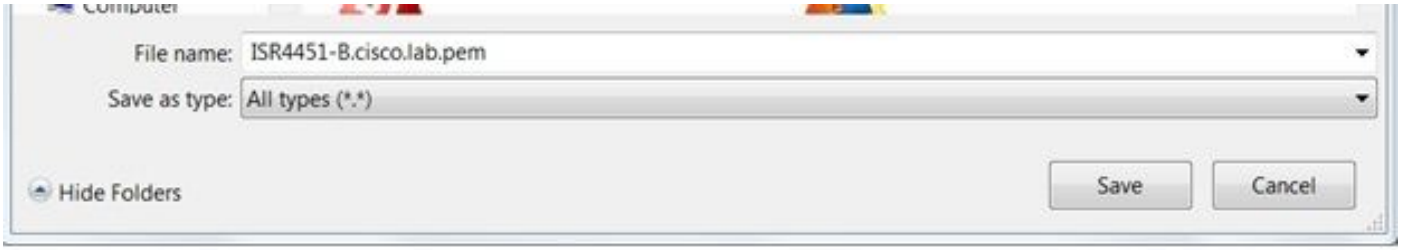
上述命令必须生成下面的证书

```
% Self-signed CA certificate:
-----BEGIN CERTIFICATE-----
MIIBgDCCASqgAwIBAgIBATANBgkqhkiG9w0BAQUFADAeMRwwGgYDVQQDExNJU1I0
NDUxLUIuY2lzY28ubGFiMB4XDTE1MTIxNTAxNTAxNVoXDTIwMDEwMTAwMDAwMFow
HjEcMBoGA1UEAxMTSVNSNDQ1MS1CLmNpc2NvLmxhYjBcMA0GCSqGSIb3DQEBAQUA
A0sAMEgCQQDGtZ974Tfv+pngs1+cCeLZ/e0b2zq6CrIj4T1t+NSlG5sjMJ919/ix
7Fa6DG33LmEYUM1NntkLaz+8UNDAyBZrAgMBAAGjUzBRMA8GA1UdEwEB/wQFMAMB
Af8wHwYDVR0jBBgwFoAU+Yy1UqKdb+rrINc7tZcrdIRMKPowHQYDVR0OBBYEFPmM
tVKinW/q6yDXO7WXK3SETCj6MA0GCSqGSIb3DQEBBQUAA0EADQXG2FYZ/MSewjSH
T88SHXq0EVqcLrgGpScwcpbR1mKFPpIhDVaJfH/FC6jnkGW7JFWcekA5Kp0tzYx4
LDQaxQ==
-----END CERTIFICATE-----

% General Purpose Certificate:
-----BEGIN CERTIFICATE-----
MIIBgDCCASqgAwIBAgIBATANBgkqhkiG9w0BAQUFADAeMRwwGgYDVQQDExNJU1I0
NDUxLUIuY2lzY28ubGFiMB4XDTE1MTIxNTAxNTAxNVoXDTIwMDEwMTAwMDAwMFow
HjEcMBoGA1UEAxMTSVNSNDQ1MS1CLmNpc2NvLmxhYjBcMA0GCSqGSIb3DQEBAQUA
A0sAMEgCQQDGtZ974Tfv+pngs1+cCeLZ/e0b2zq6CrIj4T1t+NSlG5sjMJ919/ix
7Fa6DG33LmEYUM1NntkLaz+8UNDAyBZrAgMBAAGjUzBRMA8GA1UdEwEB/wQFMAMB
Af8wHwYDVR0jBBgwFoAU+Yy1UqKdb+rrINc7tZcrdIRMKPowHQYDVR0OBBYEFPmM
tVKinW/q6yDXO7WXK3SETCj6MA0GCSqGSIb3DQEBBQUAA0EADQXG2FYZ/MSewjSH
T88SHXq0EVqcLrgGpScwcpbR1mKFPpIhDVaJfH/FC6jnkGW7JFWcekA5Kp0tzYx4
LDQaxQ==
-----END CERTIFICATE-----
```

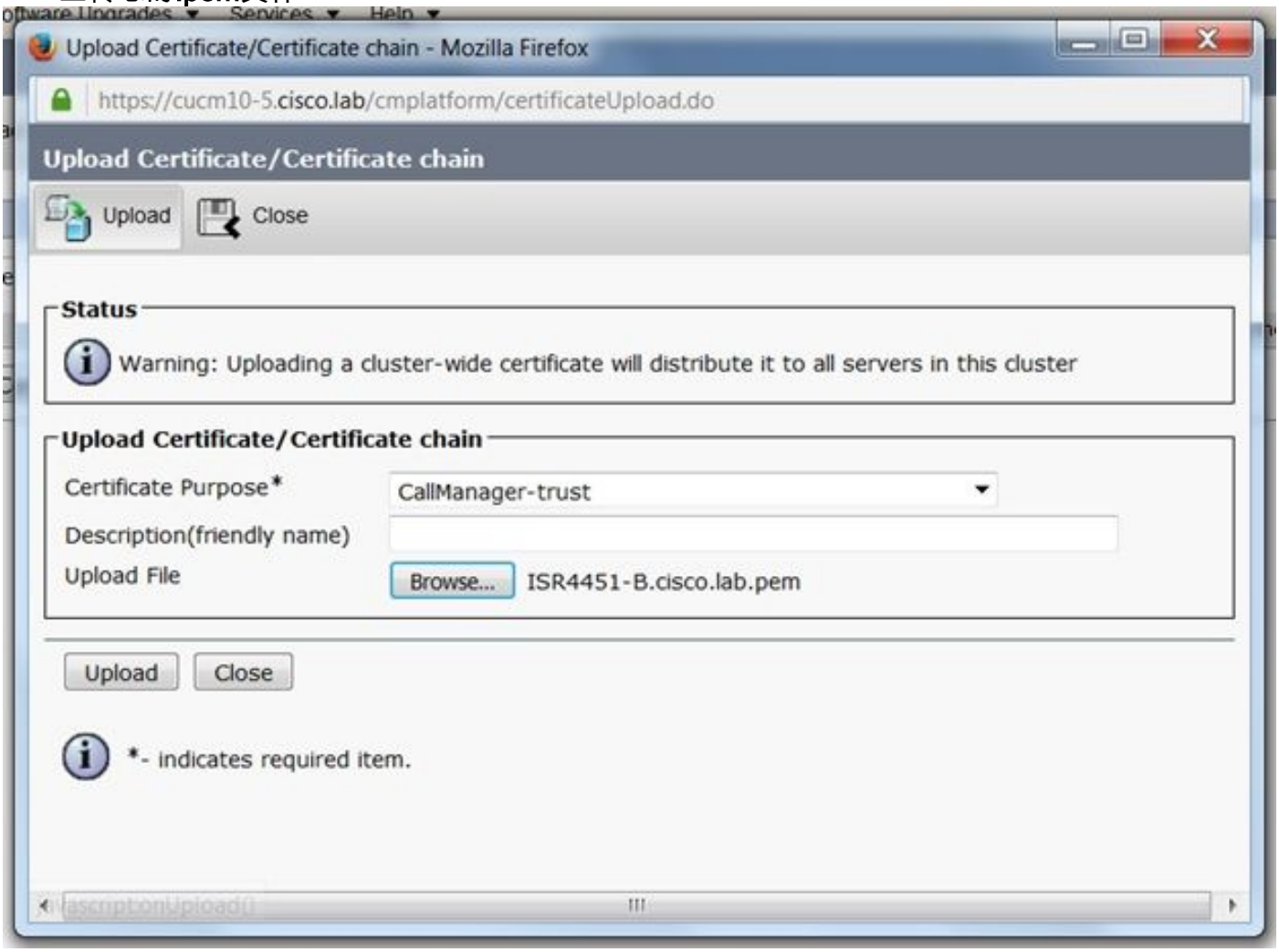
复制以上生成的自签证书并且粘贴它到有文件扩展.pem的一个文本文件

下面的示例被命名作为ISR4451-B.ciscolab.pem



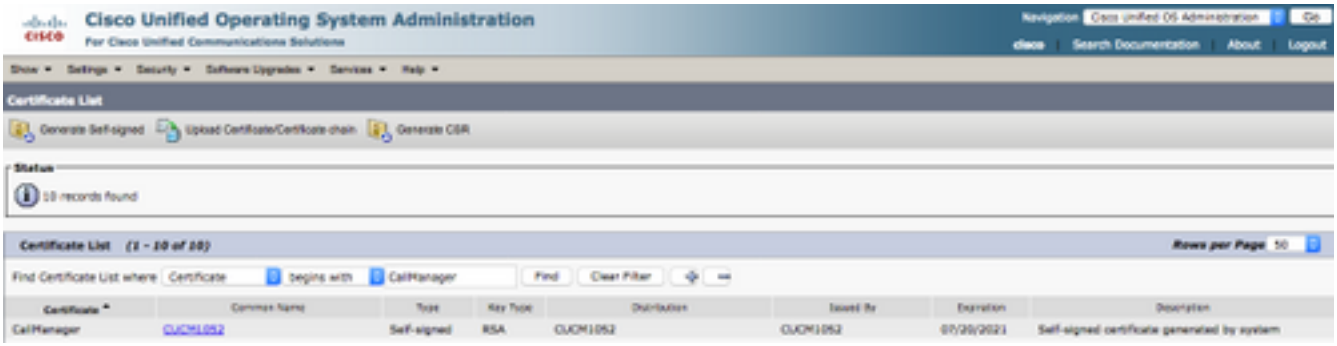
步骤4.上传多维数据集证书对CUCM

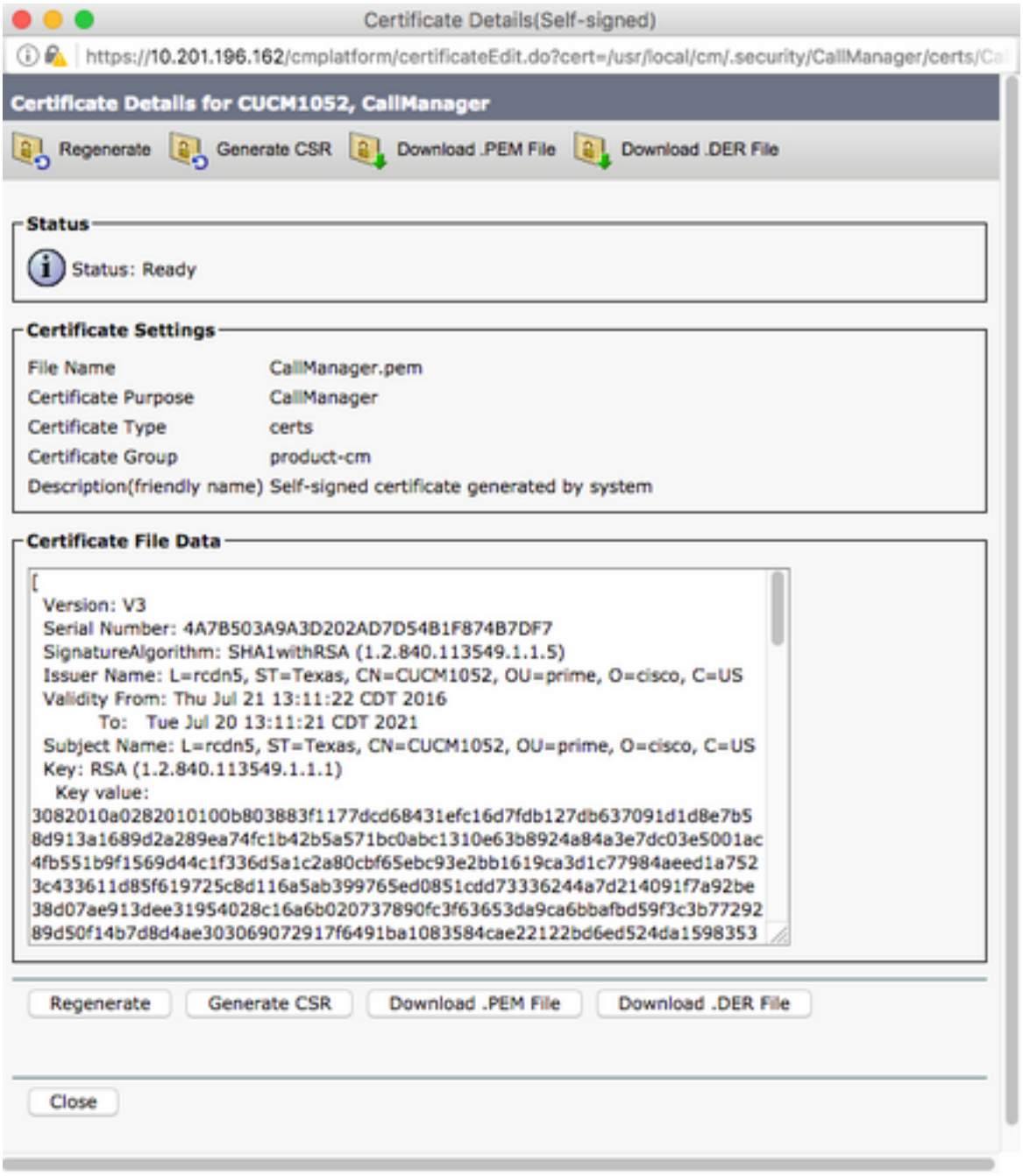
- CUCM OS Admin > Security > Certificate Management >加载证书/证书链
- 证书目的= CallManager托拉斯
- 上传您的.pem文件



步骤5.下载CallManager自签名证书

- 查找说CallManager的证书
- 点击主机名
- 点击下载PEM文件
- 保存它到您的计算机





步骤6.上传Callmanager.pem证书求立方

- 打开Callmanager.pem用文本文件编辑器
- 复制文件的整个内容
- 运行此on命令多维数据集

```
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
```

步骤7.配置SIP使用CUBE的selfsigned证书信任点

```
sip-ua
 crypto signaling default trustpoint CUBEtest
```

步骤8.配置有TLS的拨号对端

```
dial-peer voice 9999 voip
 answer-address 35..
 destination-pattern 9999
 session protocol sipv2
 session target dns:cucm10-5
```

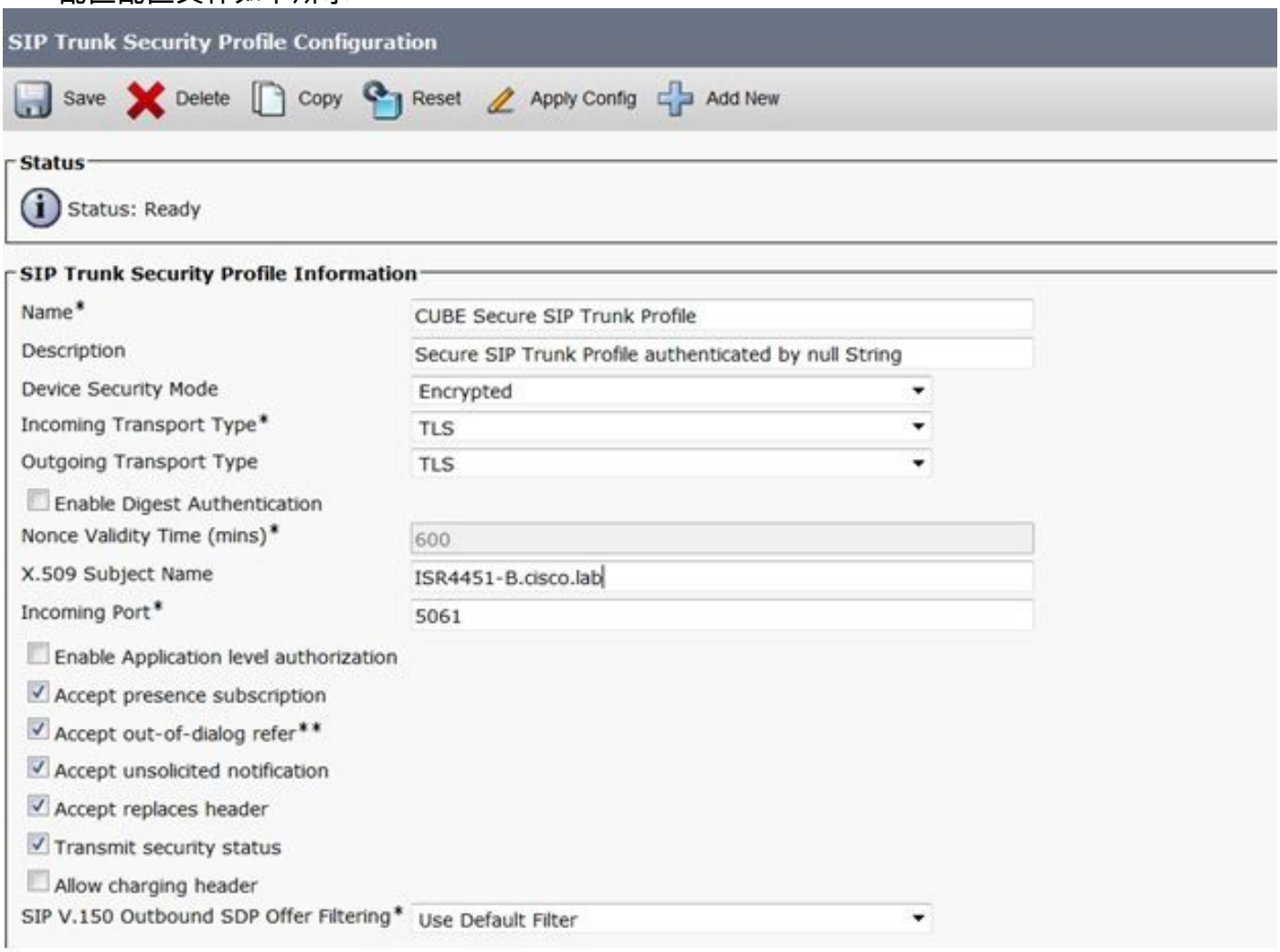
```
session transport tcp tls

voice-class sip options-keepalive

srtp
```

步骤9.配置CUCM SIP中继安全配置文件

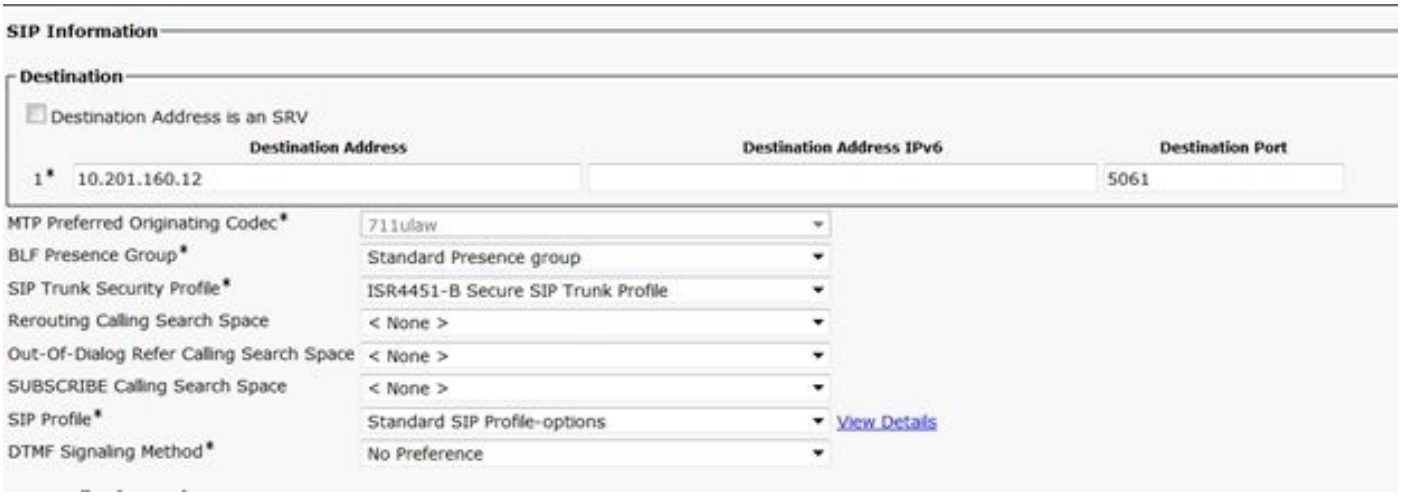
- CUCM管理员页面>System > Security > SIP中继安全配置文件
- 配置配置文件如下所示



Note: 是极其重要的X.509字段匹配您以前配置的CN名称，当您生成自签名证书时

步骤10.配置在CUCM的一SIP中继

- 保证允许的SRTP复选框被检查
- 配置适当的目的地址并且保证用端口5061替换端口5060
- 保证选择在步骤9)创建的正确Sip中继安全配置文件(



- 保存并且重置中继。

验证

因为您在CUCM的已启用选项PING， SIP中继必须在FULL服务状态

SIP中继线状态显示服务周到。

拨号对端状态显示和跟随：

```
show dial-peer voice summary

TAG    TYPE  MIN  OPER PREFIX    DEST-PATTERN      FER THRU SESS-TARGET    STAT PORT
KEEPALIVE

9999   voip  up   up             9999               0  syst dns:cucm10-5                active
```

故障排除

启用并且收集这些调试输出

```
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 ccsip verbose
```

WebEx录音链路：

https://goo.gl/QOS1iT