排除CUCM中的IP电话注销问题

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排除许多终端注销故障

- 缩小问题的步骤：
  - EndPointUnregistered系统错误消息说明

设备类型型号列表

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简介

本文档介绍如何对未注册或未注册CUCM的IP电话进行故障排除。

要求

Cisco 建议您了解以下主题：

- 思科IP电话注册流程。
- 思科统一通信管理器 (CUCM)
- 域名系统 (DNS)
- Cisco 发现协议 (CDP)

- 动态主机配置协议 (DHCP)
- 简单文件传输协议 (TFTP)
- 语音虚拟LAN（语音VLAN）
- 以太网供电 (PoE)

使用的组件

本文档中的信息基于以下软件和硬件版本：

- CUCM 11.5(1)SU9
- SIP IP电话8811 sip88xx.14-2-1-0001-14

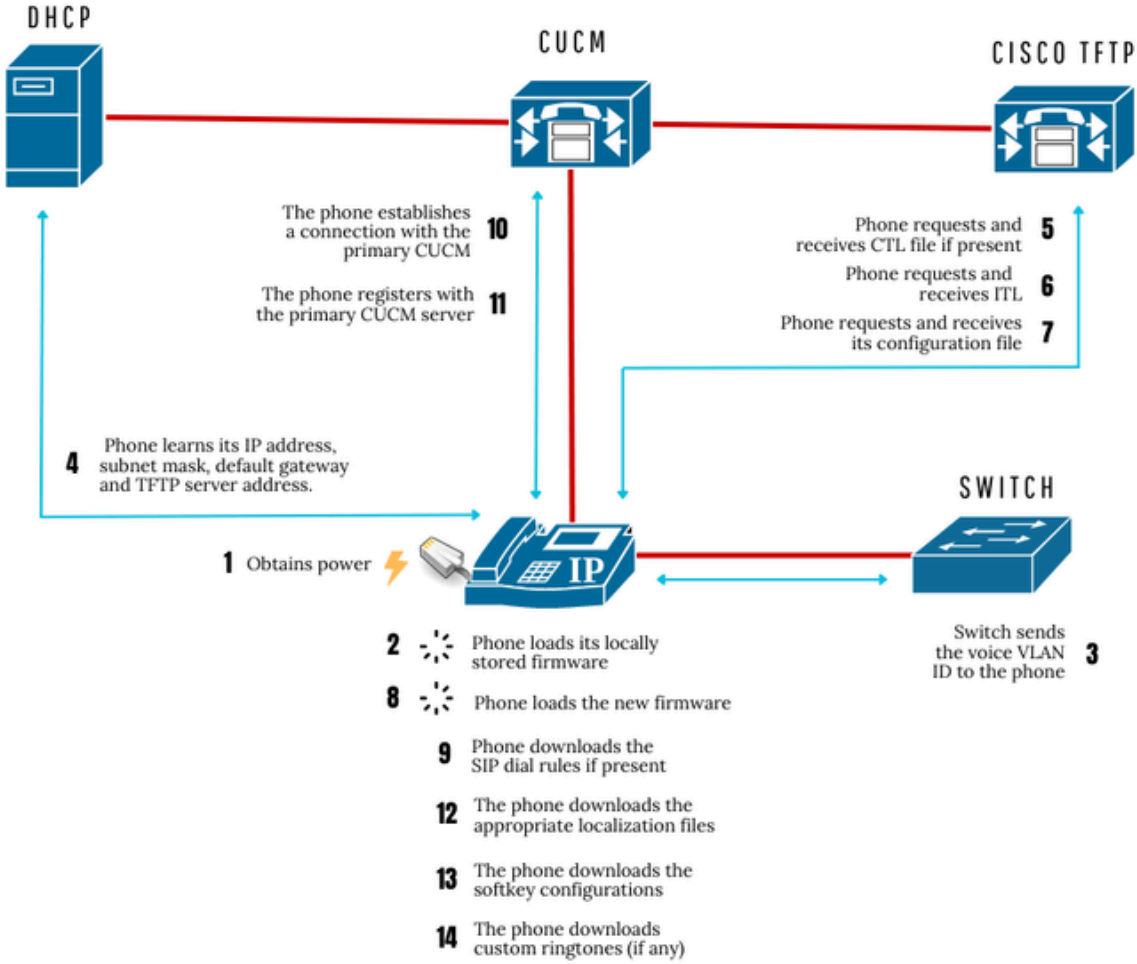
本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

背景信息

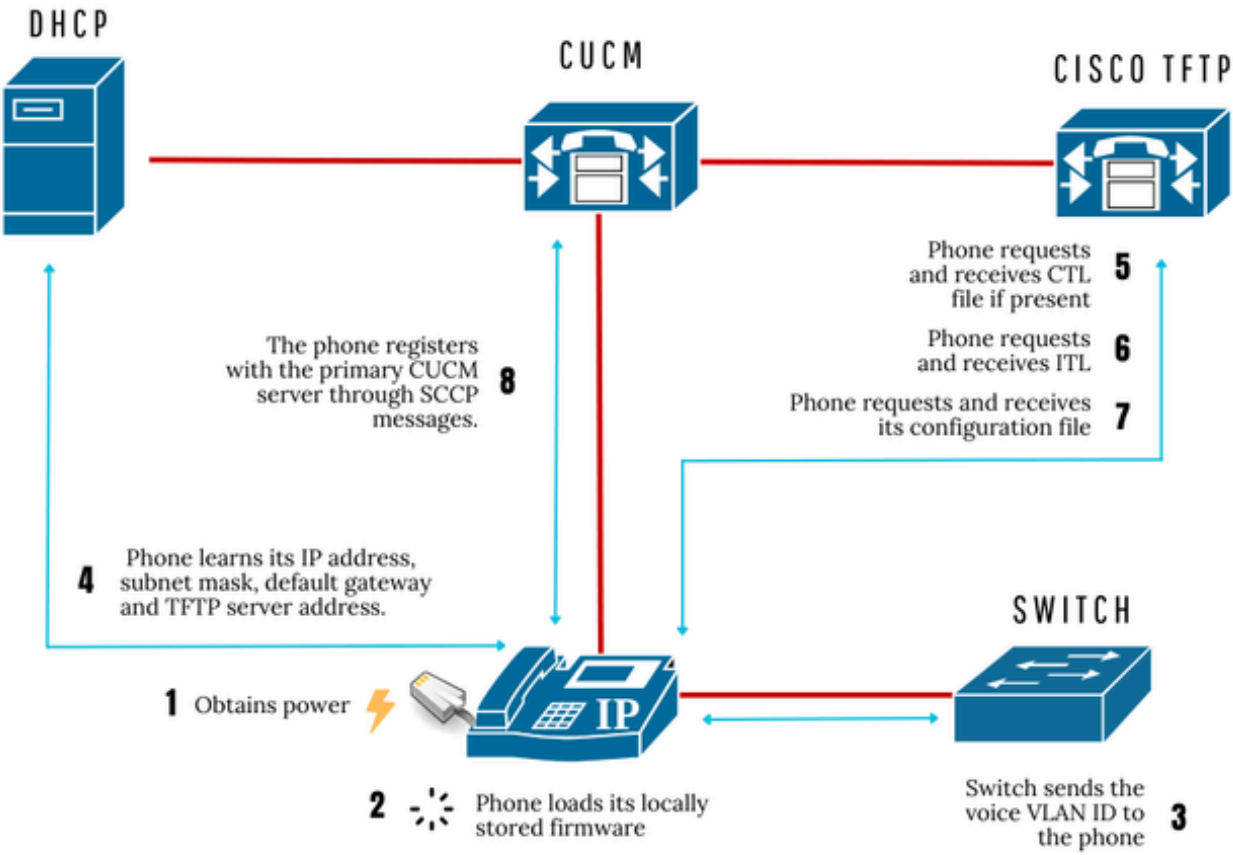
在CUCM中注册设备取决于该设备是使用瘦协议(SCCP)还是会话发起协议(SIP)，这二者之间的步骤有所更改，但故障排除步骤相同，重点在于电话注册的步骤。

通过了解设备在正确注册过程中所经历的过程，排除设备注册问题至关重要。

SIP注册流程


DHCP
CUCM
CISCO TFTP
The phone establishes a connection with the primary CUCM 10
The phone registers with the primary CUCM server 11
Phone requests and receives CTL file if present 5
Phone requests and receives ITL 6
Phone requests and receives its configuration file 7
4 Phone learns its IP address, subnet mask, default gateway and TFTP server address.
SWITCH
1 Obtains power
IP
2 Phone loads its locally stored firmware
8 Phone loads the new firmware
9 Phone downloads the SIP dial rules if present
12 The phone downloads the appropriate localization files
13 The phone downloads the softkey configurations
14 The phone downloads custom ringtones (if any)
Switch sends the voice VLAN ID to the phone 3

SCCP注册流程



问题

某些事件（如断电、硬件或软件缺陷、连接不稳定、网络中服务质量欠佳等）可能导致一个或多个电话从Call Manager注销。无论是单个事件还是间歇性事件，澄清问题以缩小范围非常重要。

有待澄清的信息

- 完整CUCM版本
- 是否仅在特定型号下才发生这种情况？
- 它是否发生在单个站点或位置？
- 有多少部电话受到影响？
- 所有电话是否共享相同的固件版本？
- 您最近是否升级或降级了固件？
- 您最近是否重新生成了证书？
- 你重置了出厂设置吗？
- 问题是否可随意重现？
- 记录受影响电话的几个MAC地址，并在问题开始出现时记录时间戳。

要收集的日志

必须拥有电话注册过程中所涉及的每个组件的日志，才能找到问题所在。

从电话：

在IP电话网页上：

- 电话问题报告(PRT)或控制台日志

在Wireshark上（并非始终需要）：

- 来自电话的Pcap

从CUCM:

从RTMT（实时监控工具）：

- Cisco CallManager跟踪
- 事件查看器应用程序日志
- 事件查看器系统日志
- Cisco TFTP

从CUCM CLI会话（不总是需要）：

- 来自主CUCM（电话注册的位置）的PCAP

从交换机：

- Span（可选，以防无法收集电话pcap）



注意：具有Timestamp（发生问题时的时间戳）重要信息以及电话详细信息。

如何收集日志指南

- 如何从RTMT收集CUCM日志
- 如何收集IP电话pcap
- 如何收集CUCM pcap
- 如何收集IP电话PRT
- 如何收集电话控制台日志
- 如何在交换机上收集SPAN

了解PRT/控制台日志

电话从涉及的其他组件请求特定功能（IP、配置文件和其他功能）的过程可以在PRT或控制台日志中看到。PRT包括控制台日志。



注意：为了能够读取PRT中的控制台日志，需要解压缩路径prt-date-time-MACAddress > data > logsave > main中包含的文件夹

******** PRT/控制台日志显示电话如何加载其固件映像：********

```
1429 NOT Jul 21 18:05:16.217247 (620-869) JAVA-SIPCC-PLAT_API: extract_release_num_from_phone_load_name
```

********电话请求证书信任列表(CTL)文件********

```
2056 NOT Jul 21 18:05:24.839195 (351-928) downd-GETXXTP [GT351][src=CTLSEPD0EC35C1D98E.tlv][dest=/tmp/C
2057 NOT Jul 21 18:05:24.839912 (351-928) downd-handle_get_file:SEP file is:SEPD0EC35C1D98E.cnf.xml
2058 NOT Jul 21 18:05:24.840023 (351-928) downd-handle_get_file:dst:/tmp/CTLFile.tlv
2059 NOT Jul 21 18:05:24.891683 (351-928) downd-In normal mode, call - > makeXXTPrequest (V6...)
2060 NOT Jul 21 18:05:24.892095 (351-928) downd-EMCC mode is false
2061 NOT Jul 21 18:05:24.893087 (351-928) downd-parseDhcpInfoIntoTftpList(): no valid load server
2062 NOT Jul 21 18:05:24.893555 (351-928) downd-AUTH.SRVR [GT351] look up server - 0 - 198.51.100.30
2063 NOT Jul 21 18:05:24.944833 (351-928) downd-AUTH.SRVR [GT351] authentication retval = 9
2064 NOT Jul 21 18:05:24.944987 (351-928) downd-XXTP Non secure file requested
```

```
2065 NOT Jul 21 18:05:24.945138 (351-928) downd-tftp.avail file does not exist, so creating it
```

如果集群处于非安全模式，则TFTP会向请求发送404 Not Found（如果集群处于混合模式，则TFTP应发送200 OK）

```
2078 NOT Jul 21 18:05:24.947516 (351-931) downd-XXX arg[4] CTLSEPD0EC35C1D98E.tlv
2079 NOT Jul 21 18:05:24.947550 (351-931) downd-XXX arg[5] /tmp/CTLFile.tlv
2080 NOT Jul 21 18:05:24.947584 (351-931) downd-XXX arg[6] (null)
2081 NOT Jul 21 18:05:24.976370 (931-931) GHTTP-LIMIT downdload will be limited to 8192 KB
2082 ERR Jul 21 18:05:24.994707 (931-931) GHTTP-http get [HTTP/1.1 404 Not Found^M
```

******** Phone请求身份信任列表(ITL)文件********

```
2088 NOT Jul 21 18:05:25.049240 (351-935) downd-GETXXTP [GT351][src=ITLSEPD0EC35C1D98E.tlv][dest=/tmp/I
2089 NOT Jul 21 18:05:25.049419 (351-935) downd-handle_get_file:SEP file is:SEPD0EC35C1D98E.cnf.xml
2090 NOT Jul 21 18:05:25.049484 (351-935) downd-handle_get_file:dst:/tmp/ITLFile.tlv
2091 NOT Jul 21 18:05:25.049525 (351-935) downd-handle_get_file:downloading ITLFILE
2092 NOT Jul 21 18:05:25.100110 (351-935) downd-In normal mode, call - > makeXXTPrequest (V6...)
```

TFTP为ITL文件请求发送200 OK

```
2110 NOT Jul 21 18:05:25.153781 (351-938) downd-XXX arg[4] ITLSEPD0EC35C1D98E.tlv
2111 NOT Jul 21 18:05:25.153815 (351-938) downd-XXX arg[5] /tmp/ITLFile.tlv
2112 NOT Jul 21 18:05:25.153849 (351-938) downd-XXX arg[6] (null)
2113 NOT Jul 21 18:05:25.166084 (938-938) GHTTP-LIMIT downdload will be limited to 8192 KB
2114 NOT Jul 21 18:05:25.168904 (938-938) GHTTP-hdr->HTTP/1.1 200 OK
2115 NOT Jul 21 18:05:25.169081 (938-938) GHTTP-hdr->Content-length: 11698
2116 NOT Jul 21 18:05:25.169149 (938-938) GHTTP-hdr->Cache-Control: no-store
2117 NOT Jul 21 18:05:25.169211 (938-938) GHTTP-hdr->Content-type: */*
2118 NOT Jul 21 18:05:25.170338 (351-935) downd-PARENT, child process status: 25600
2119 NOT Jul 21 18:05:25.170472 (351-935) downd-NORMAL tftp-exit 100
2120 NOT Jul 21 18:05:25.170724 (351-935) downd-XXTP complete - status = 100
2121 NOT Jul 21 18:05:25.170755 (351-935) downd-cancel the monitor timer
2122 NOT Jul 21 18:05:25.175638 (355-939) SECUREAPP-validateSignedCTL: new TL matches old, not updating
2123 NOT Jul 21 18:05:25.186516 (351-935) downd-DDGETTFTP.RESULT [_100_ HTTP NO ERROR
```

********电话向TFTP请求配置文件********

```
2140 NOT Jul 21 18:05:26.436017 (351-965) downd-GETXXTP [GT351][src=SEPD0EC35C1D98E.cnf.xml][dest=/tmp/
2141 NOT Jul 21 18:05:26.436216 (351-965) downd-handle_get_file:SEP file is:SEPD0EC35C1D98E.cnf.xml
2142 NOT Jul 21 18:05:26.436285 (351-965) downd-handle_get_file:dst:/tmp/ram/SEPD0EC35C1D98E.cnf.xml.19
2143 NOT Jul 21 18:05:26.436346 (351-965) downd-handle_get_file:downloading CNF FILE
2144 NOT Jul 21 18:05:26.487402 (351-965) downd-In normal mode, call - > makeXXTPrequest (V6...)
2145 NOT Jul 21 18:05:26.487841 (351-965) downd-EMCC mode is false
2146 NOT Jul 21 18:05:26.488595 (351-965) downd-parseDhcpInfoIntoTftpList(): no valid load server
2147 NOT Jul 21 18:05:26.488787 (351-965) downd-AUTH.SRVR [GT351] look up server - 0 - 198.51.100.30
2148 NOT Jul 21 18:05:26.539279 (351-965) downd-AUTH.SRVR [GT351] authentication retval = 9
2149 NOT Jul 21 18:05:26.539419 (351-965) downd-XXTP Secure file requested
2150 NOT Jul 21 18:05:26.539536 (351-965) downd-XXTP authenticated file approved - add .sgn if necessar
```

********电话下载配置文件********

```
137 NOT Jul 21 18:05:26.432207 (620-840) JAVA-configmgr MQThread|cip.cfg.Config: - Requesting CONFIG fi
2138 INF Jul 21 18:05:26.432653 (620-840) JAVA-[[MESSAGE_1.0]]: [CONFIG-MGR] --> tftpRequest(ram/SEPD0E
2139 NOT Jul 21 18:05:26.435882 (351-965) downd-start the monitor timer
2140 NOT Jul 21 18:05:26.436017 (351-965) downd-GETXXTP [GT351][src=SEPD0EC35C1D98E.cnf.xml][dest=/tmp/
2141 NOT Jul 21 18:05:26.436216 (351-965) downd-handle_get_file:SEP file is:SEPD0EC35C1D98E.cnf.xml
2142 NOT Jul 21 18:05:26.436285 (351-965) downd-handle_get_file:dst:/tmp/ram/SEPD0EC35C1D98E.cnf.xml.19
2143 NOT Jul 21 18:05:26.436346 (351-965) downd-handle_get_file:downloading CNF FILE
2144 NOT Jul 21 18:05:26.487402 (351-965) downd-In normal mode, call - > makeXXTPrequest (V6...)
2145 NOT Jul 21 18:05:26.487841 (351-965) downd-EMCC mode is false
2146 NOT Jul 21 18:05:26.488595 (351-965) downd-parseDhcpInfoIntoTftpList(): no valid load server
2147 NOT Jul 21 18:05:26.488787 (351-965) downd-AUTH.SRVR [GT351] look up server - 0 - 198.51.100.30
2148 NOT Jul 21 18:05:26.539279 (351-965) downd-AUTH.SRVR [GT351] authentication retval = 9
2149 NOT Jul 21 18:05:26.539419 (351-965) downd-XXTP Secure file requested
2150 NOT Jul 21 18:05:26.539536 (351-965) downd-XXTP authenticated file approved - add .sgn if necessar
```

TFTP向配置文件请求发送200 OK

```
2163 NOT Jul 21 18:05:26.541364 (351-968) downd-XXX arg[4] SEPD0EC35C1D98E.cnf.xml.sgn
2164 NOT Jul 21 18:05:26.541398 (351-968) downd-XXX arg[5] /tmp/ram/SEPD0EC35C1D98E.cnf.xml.19036
2165 NOT Jul 21 18:05:26.541432 (351-968) downd-XXX arg[6] (null)
2166 NOT Jul 21 18:05:26.552194 (968-968) GHTTP-LIMIT downdload will be limited to 8192 KB
2167 NOT Jul 21 18:05:26.603994 (968-968) GHTTP-hdr->HTTP/1.1 200 OK
2168 NOT Jul 21 18:05:26.604360 (968-968) GHTTP-hdr->Content-length: 14939
2169 NOT Jul 21 18:05:26.604470 (968-968) GHTTP-hdr->Cache-Control: no-store
```

```
2170 NOT Jul 21 18:05:26.604523 (968-968) GHTTP-hdr->Content-type: */*
2171 NOT Jul 21 18:05:26.607331 (351-965) downd-PARENT, child process status: 25600
2172 NOT Jul 21 18:05:26.607479 (351-965) downd-NORMAL tftp-exit 100
2173 NOT Jul 21 18:05:26.607504 (351-965) downd-XXTP complete - status = 100
```

********电话加载新的固件配********

```
2202 NOT Jul 21 18:05:27.530229 (620-981) JAVA-Seamless Upgrade Thread|UpgradeService: - Got request fo
2203 NOT Jul 21 18:05:27.530908 (620-981) JAVA-Seamless Upgrade Thread|UpgradeService: - and (sip88xx.1
```

******** Phone对写入配置文件的所有参数收费********

```
4479 NOT Jul 17 22:29:45.818159 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - HEADSET_DISCOVERY_
4480 NOT Jul 17 22:29:45.819013 (559-1232) JAVA-configmgr MQThread|cip.cfg.SipConfig: - Entering setPro
4481 NOT Jul 17 22:29:45.998381 (559-1232) JAVA-configmgr MQThread|cip.cfg.SipConfig:? - embrace featur
4482 NOT Jul 17 22:29:46.037905 (559-1232) JAVA-configmgr MQThread|cip.cfg.SipConfig: - Exiting setProt
4483 NOT Jul 17 22:29:46.106088 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - CUCM in config fil
4484 NOT Jul 17 22:29:46.107950 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - CUCM in config fil
4485 NOT Jul 17 22:29:46.109415 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - CUCM in config fil
4486 NOT Jul 17 22:29:46.111032 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - CUCM in config fil
4487 NOT Jul 17 22:29:46.112528 (559-1232) JAVA-configmgr MQThread|cip.cfg.Config: - CUCM in config fil
4488 WRN Jul 17 22:29:46.291408 (345-2829) SECUREAPP-SEC_CAPF_N_IN_USE: CAPF not in use, user cancel ig
4489 NOT Jul 17 22:29:46.341949 (559-1232) JAVA-configmgr MQThread|cip.sec.CapfProperty:? - CapfProp 96
```

********注册消息********

```
6260 DEB Jul 17 22:29:50.880584 (610-796) JAVA-SIPCC-SIP_STATE: 201/1, sip_reg_sm_change_state: Registr
6261 DEB Jul 17 22:29:50.880638 (610-796) JAVA-SIPCC-SIP_MSG_SEND: ccsip_register_send_msg: cmd=85=SIP_
6262 DEB Jul 17 22:29:50.880750 (610-796) JAVA-SIPCC-SIP_STATE: 201/1, sip_reg_sm_change_state: Registr
```

********电话向CUCM服务器发送SIP REGISTER消********

```
76 DEB Jul 17 22:29:50.882403 (610-796) JAVA-sipio-sent---> REGISTER sip:198.51.100.31 SIP/2.0^M
Via: SIP/2.0/TCP 198.51.100.109:50020;branch=z9hG4bK775c97a8^M
From: <sip:***@198.51.100.31>;tag=d0ec35c1d98e2e142ea51ccd-2fdbbe4d^M
To: <sip:***@198.51.100.31>^M
Call-ID: d0ec35c1-d98e0017-3593f645-7a3311ca@198.51.100.109^M
Max-Forwards: 70^M
Session-ID: 0ffda3aa00105000a000d0ec35c1d98e;remote=00000000000000000000000000000000^M
Date: Mon, 17 Jul 2023 22:29:50 GMT^M
CSeq: 11749 REGISTER^M
User-Agent: Cisco-CP8811/14.2.1^M
Contact: <sip:***@198.51.100.109:50020;transport=tcp>;+sip.instance="<urn:uuid:00000000-0000-0000-0000-
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Content-Length: 0^M
Expires: 3600^M
^M
```

********CUCM接收到REGISTER的SIP尝试消********

```
6284 DEB Jul 17 22:29:50.884485 (610-796) JAVA-sipio-recv<--- SIP/2.0 100 Trying^M
Via: SIP/2.0/TCP 198.51.100.109:50020;branch=z9hG4bK775c97a8^M
From: <sip:***@198.51.100.31>;tag=d0ec35c1d98e2e142ea51ccd-2fdbbe4d^M
To: <sip:***@198.51.100.31>^M
Date: Mon, 17 Jul 2023 22:29:52 GMT^M
Call-ID: d0ec35c1-d98e0017-3593f645-7a3311ca@198.51.100.109^M
CSeq: 11749 REGISTER^M
Content-Length: 0^M
^M
```

******** 200 OK响应来自CUCM服务器的REGISTER消********

```
6294 DEB Jul 17 22:29:50.885744 (610-796) JAVA-sipio-recv<--- SIP/2.0 200 OK^M
Via: SIP/2.0/TCP 198.51.100.109:50020;branch=z9hG4bK775c97a8^M
From: <sip:***@198.51.100.31>;tag=d0ec35c1d98e2e142ea51ccd-2fdbbe4d^M
To: <sip:***@198.51.100.31>;tag=696179034^M
Date: Mon, 17 Jul 2023 22:29:52 GMT^M
Call-ID: d0ec35c1-d98e0017-3593f645-7a3311ca@198.51.100.109^M
Server: Cisco-CUCM14.0^M
CSeq: 11749 REGISTER^M
Expires: 120^M
Contact: <sip:***@198.51.100.109:50020;transport=tcp>;+sip.instance="<urn:uuid:00000000-0000-0000-0000-
Supported: X-cisco-srtp-fallback,X-cisco-sis-10.0.0^M
Content-Length: 0^M
^M
```

IP电话PCAP注册过程

在pcap中，显示了设备如何执行与其他组件（如CUCM、TFTP和DHCP）通信的完整过程。如果您想详细了解日志中未发现的内容，则需要使用pcap。

SIP设备情况下的推荐过滤器：((tcp) ||(http) ||(sip)&(ip.addr == XX.XX.XX.XX)

SCCP设备情况下的推荐过滤器：((tcp) ||(http) || （瘦客户端）&&(ip.addr == XX.XX.XX.XX)

其中XX.XX.XX.XX是电话的IP。

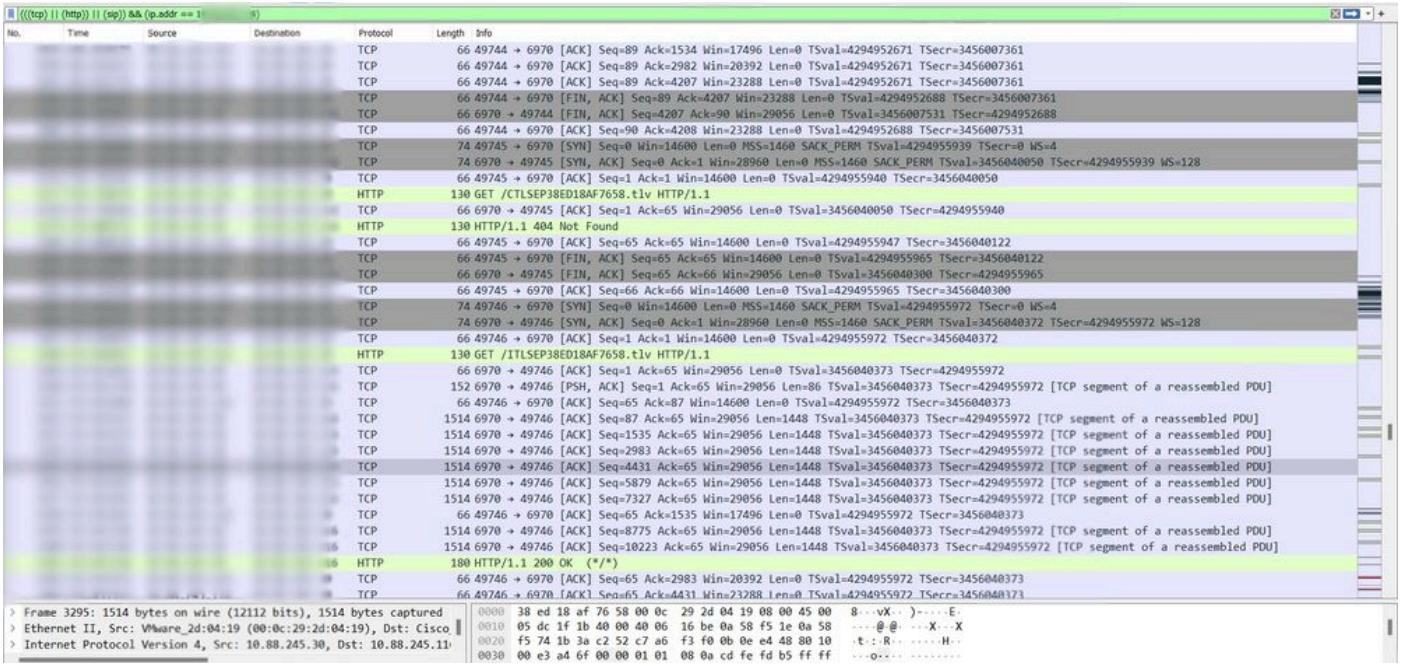
或其他选项

对于SIP设备:((tcp) ||(http) ||(sip)&&(eth.addr == YYYYYYYYYYYY)

对于SCCP设备：((tcp) ||(http) || （瘦客户端）&&(eth.addr == YYYYYYYYYYYY)

其中YYYYYYYYYYYYYYYY是电话的MAC。

也可以将MAC地址与冒号一起使用：eth.addr == YY:YY:YY:YY:YY



电话使用TFTP打开TCP会话

Protocol	Length	Info
TCP	66	49744 → 6970 [ACK] Seq=89 Ack=1534 Win=17496 Len=0 TSval=4294952671 TSecr=3456007361
TCP	66	49744 → 6970 [ACK] Seq=89 Ack=2982 Win=20392 Len=0 TSval=4294952671 TSecr=3456007361
TCP	66	49744 → 6970 [ACK] Seq=89 Ack=4207 Win=23288 Len=0 TSval=4294952671 TSecr=3456007361
TCP	66	49744 → 6970 [FIN, ACK] Seq=89 Ack=4207 Win=23288 Len=0 TSval=4294952688 TSecr=3456007361
TCP	66	6970 → 49744 [FIN, ACK] Seq=4207 Ack=90 Win=29056 Len=0 TSval=3456007531 TSecr=4294952688
TCP	66	49744 → 6970 [ACK] Seq=90 Ack=4208 Win=23288 Len=0 TSval=4294952688 TSecr=3456007531
TCP	74	49745 → 6970 [SYN] Seq=0 Win=14600 Len=0 MSS=1460 SACK_PERM TSval=4294955939 TSecr=0 WS=4
TCP	74	6970 → 49745 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM TSval=3456040050 TSecr=4294955939 WS=128
TCP	66	49745 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294955940 TSecr=3456040050
HTTP	130	GET /CTLSEP38ED18AF7658.tlv HTTP/1.1

电话请求CTL文件并从TFTP接收，但找不到404

TCP	66	49745 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294955940 TSecr=3456040050
HTTP	130	GET /CTLSEP38ED18AF7658.tlv HTTP/1.1
TCP	66	6970 → 49745 [ACK] Seq=1 Ack=65 Win=29056 Len=0 TSval=3456040050 TSecr=4294955940
HTTP	130	HTTP/1.1 404 Not Found
TCP	66	49745 → 6970 [ACK] Seq=65 Ack=65 Win=14600 Len=0 TSval=4294955947 TSecr=3456040122
TCP	66	49745 → 6970 [FIN, ACK] Seq=65 Ack=65 Win=14600 Len=0 TSval=4294955965 TSecr=3456040122
TCP	66	6970 → 49745 [FIN, ACK] Seq=65 Ack=66 Win=29056 Len=0 TSval=3456040300 TSecr=4294955965
TCP	66	49745 → 6970 [ACK] Seq=66 Ack=66 Win=14600 Len=0 TSval=4294955965 TSecr=3456040300
TCP	74	49746 → 6970 [SYN] Seq=0 Win=14600 Len=0 MSS=1460 SACK_PERM TSval=4294955972 TSecr=0 WS=4
TCP	74	6970 → 49746 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM TSval=3456040372 TSecr=4294955972 WS=128
TCP	66	49746 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294955972 TSecr=3456040372
HTTP	130	GET /ITLSEP38ED18AF7658.tlv HTTP/1.1

电话请求ITL文件并通过TCP数据包从TFTP接收该文件

TCP	66	49746 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294955972 TSecr=3456040372
HTTP	130	GET /ITLSEP38ED18AF7658.tlv HTTP/1.1
TCP	66	6970 → 49746 [ACK] Seq=1 Ack=65 Win=29056 Len=0 TSval=3456040373 TSecr=4294955972
TCP	152	6970 → 49746 [PSH, ACK] Seq=1 Ack=65 Win=29056 Len=86 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=87 Win=14600 Len=0 TSval=4294955972 TSecr=3456040373
TCP	1514	6970 → 49746 [ACK] Seq=87 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=1535 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=2983 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=4431 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=5879 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=7327 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=1535 Win=17496 Len=0 TSval=4294955972 TSecr=3456040373
TCP	1514	6970 → 49746 [ACK] Seq=8775 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
TCP	1514	6970 → 49746 [ACK] Seq=10223 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
HTTP	180	HTTP/1.1 200 OK (*/*)

TFTP为ITL文件请求发送200 OK，电话确认收到数据并关闭TCP会话

TCP	1514	6970 → 49746 [ACK] Seq=10223 Ack=65 Win=29056 Len=1448 TSval=3456040373 TSecr=4294955972 [TCP segment of a reassembled PDU]
HTTP	180	HTTP/1.1 200 OK (*/*)
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=2983 Win=20392 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=4431 Win=23288 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=5879 Win=26184 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=7327 Win=29080 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=8775 Win=31976 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=10223 Win=34872 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=11671 Win=37768 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [ACK] Seq=65 Ack=11785 Win=37768 Len=0 TSval=4294955972 TSecr=3456040373
TCP	66	49746 → 6970 [FIN, ACK] Seq=65 Ack=11785 Win=37768 Len=0 TSval=4294955993 TSecr=3456040373
TCP	66	6970 → 49746 [FIN, ACK] Seq=11785 Ack=66 Win=29056 Len=0 TSval=3456040580 TSecr=4294955993
TCP	66	49746 → 6970 [ACK] Seq=66 Ack=11786 Win=37768 Len=0 TSval=4294955993 TSecr=3456040580

Phone closes TCP connection

注意：对于每次TFTP请求，电话都会尝试建立新的TCP连接

电话向TFTP请求配置文件，并通过TCP数据包从TFTP接收该文件

```
TCP      66 49747 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294956120 TSecr=3456041859
HTTP    135 GET /SEP38ED18AF7658.cnf.xml.sgn HTTP/1.1
TCP      66 6970 → 49747 [ACK] Seq=1 Ack=70 Win=29056 Len=0 TSval=3456041859 TSecr=4294956120
TCP     152 6970 → 49747 [PSH, ACK] Seq=1 Ack=70 Win=29056 Len=86 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=87 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=1535 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=2983 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=4431 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=5879 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=7327 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=8775 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=10223 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP    1514 6970 → 49747 [ACK] Seq=11671 Ack=70 Win=29056 Len=1448 TSval=3456042050 TSecr=4294956120 [TCP segment of a reassembled PDU]
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=87 Win=14600 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=1535 Win=17496 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=2983 Win=20392 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=4431 Win=23288 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=5879 Win=26184 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=7327 Win=29080 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=8775 Win=31976 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=10223 Win=34872 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=11671 Win=37768 Len=0 TSval=4294956140 TSecr=3456042050
TCP      66 49747 → 6970 [ACK] Seq=70 Ack=13119 Win=40664 Len=0 TSval=4294956140 TSecr=3456042050
TCP    1514 6970 → 49747 [ACK] Seq=13119 Ack=70 Win=29056 Len=1448 TSval=3456042051 TSecr=4294956140 [TCP segment of a reassembled PDU]
```

TFTP为ITL文件请求发送200 OK，电话将确认收到的数据

```
HTTP     708 HTTP/1.1 200 OK  (*/*)
TCP       66 49747 → 6970 [ACK] Seq=70 Ack=14567 Win=43560 Len=0 TSval=4294956140 TSecr=3456042051
TCP       66 49747 → 6970 [ACK] Seq=70 Ack=15209 Win=43560 Len=0 TSval=4294956140 TSecr=3456042051
TCP       66 49747 → 6970 [FIN, ACK] Seq=70 Ack=15209 Win=43560 Len=0 TSval=4294956154 TSecr=3456042051
TCP       66 6970 → 49747 [FIN, ACK] Seq=15209 Ack=71 Win=29056 Len=0 TSval=3456042190 TSecr=4294956154
TCP       66 49747 → 6970 [ACK] Seq=71 Ack=15210 Win=43560 Len=0 TSval=4294956154 TSecr=3456042190
TCP       74 49748 → 6970 [SYN] Seq=0 Win=14600 Len=0 MSS=1460 SACK_PERM TSval=4294956540 TSecr=0 WS=4
TCP       74 6970 → 49748 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM TSval=3456046055 TSecr=4294956540 WS=128
TCP       66 49748 → 6970 [ACK] Seq=1 Ack=1 Win=14600 Len=0 TSval=4294956540 TSecr=3456046055
HTTP     148 GET /Desktops/800x480x24/WestRocky3_2.png.sgn HTTP/1.1
```

电话从TFTP请求配置，并通过TCP数据包接收每个文件。

```
HTTP          147 GET /English_United_States/sl-be-sip.jar.sgn HTTP/1.1
HTTP          739 HTTP/1.1 200 OK  (*/*)
HTTP          138 GET /United_States/g3-tones.xml.sgn HTTP/1.1
HTTP          931 HTTP/1.1 200 OK  (*/*)
HTTP          148 GET /Desktops/800x480x24/WestRockv3-2.png.sgn HTTP/1.1
HTTP          631 HTTP/1.1 200 OK  (*/*)
HTTP          124 GET /AppDialRules.xml HTTP/1.1
HTTP           91 HTTP/1.1 200 OK  (*/*)
HTTP          154 GET /SKb0ec918f-b9ee-994b-57ae-345883c1fde8.xml.sgn HTTP/1.1
HTTP         1291 HTTP/1.1 200 OK  (*/*)
HTTP          130 GET /CTLSEP38ED18AF7658.tlv HTTP/1.1
HTTP          130 HTTP/1.1 404 Not Found
HTTP          130 GET /ITLSEP38ED18AF7658.tlv HTTP/1.1
HTTP          180 HTTP/1.1 200 OK  (*/*)
HTTP          135 GET /SEP38ED18AF7658.cnf.xml.sgn HTTP/1.1
HTTP          708 HTTP/1.1 200 OK  (*/*)
HTTP          148 GET /Desktops/800x480x24/WestRockv3-2.png.sgn HTTP/1.1
HTTP          124 GET /AppDialRules.xml HTTP/1.1
HTTP           91 HTTP/1.1 200 OK  (*/*)
HTTP          154 GET /SKb0ec918f-b9ee-994b-57ae-345883c1fde8.xml.sgn HTTP/1.1
HTTP         1291 HTTP/1.1 200 OK  (*/*)
```

来自CUCM的SIP注册消息和200 OK。

```
SIP           128 Request: REFER sip:[redacted] |
SIP           449 Status: 202 Accepted |
SIP          1140 Request: REGISTER sip[redacted]  (1 binding) |  (application/x-cisco-remotecc-request+xml) (application/x-cisco-remotecc-request+x…
SIP           383 Status: 100 Trying |
SIP          1173 Status: 200 OK (REGISTER)  (1 binding) |
```

CUCM跟踪

********请参阅通知CUCM有关上次注册状态信********

```
REFER sip:198.51.100.31 SIP/2.0
Via: SIP/2.0/TCP 198.51.100.109:50806;branch=z9hG4bK25771c8e
From: "2001" <sip:2001@198.51.100.109>;tag=d0ec35c1d98e00030abbb40d-0dadaa5e
To: <sip:198.51.100.31>
Call-ID: d0ec35c1-d98e0003-657a07f3-6d626333@198.51.100.109
Session-ID: 92eb5cca00105000a000d0ec35c1d98e;remote=00000000000000000000000000000000
Date: Fri, 21 Jul 2023 18:05:31 GMT
CSeq: 1000 REFER
User-Agent: Cisco-CP8811/14.2.1
Expires: 10
Max-Forwards: 70
Contact: <sip:fa7155fd-ec0d-7b35-c49b-86e9f163bf11@198.51.100.109:50806;transport=tcp>;+u.sip!devicenam
Require: norefersub
```

```
Referred-By: "2001" <sip:2001@198.51.100.109>
Refer-To: cid:28820b4e@198.51.100.109
Content-Id: <28820b4e@198.51.100.109>
Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,REGISTER,UPDATE,SUBSCRIBE
Content-Length: 1693
Content-Type: application/x-cisco-alarm+xml
Content-Disposition: session;handling=required



<?xml version="1.0" encoding="UTF-8"?>
<x-cisco-alarm>
<Alarm Name="LastOutOfServiceInformation">
<ParameterList>
<String name="DeviceName">SEPD0EC35C1D98E</String>
<String name="DeviceIPv4Address">198.51.100.109/24</String>
<String name="IPv4DefaultGateway">198.51.100.1</String>
<String name="DeviceIPv6Address"></String>
<String name="IPv6DefaultGateway"></String>
<String name="ModelNumber">CP-8811</String>
<String name="NeighborIPv4Address">198.51.100.98</String>
<String name="NeighborIPv6Address"></String>
<String name="NeighborDeviceID">jpazjaim_SW</String>
<String name="NeighborPortID">GigabitEthernet0/2</String>
<Enum name="DHCPv4Status">1</Enum>
<Enum name="DHCPv6Status">3</Enum>
<Enum name="TFTPCfgStatus">1</Enum>
<Enum name="DNSStatusUnifiedCM1">0</Enum>
<Enum name="DNSStatusUnifiedCM2">0</Enum>
<Enum name="DNSStatusUnifiedCM3">0</Enum>
<Enum name="DNSv6StatusUnifiedCM1">0</Enum>
<Enum name="DNSv6StatusUnifiedCM2">0</Enum>
<Enum name="DNSv6StatusUnifiedCM3">0</Enum>
<String name="VoiceVLAN">360</String>
<String name="UnifiedCMIPAddress">198.51.100.31</String>
<String name="LocalPort">50020</String>
<String name="TimeStamp">1689962095016</String>
<Enum name="ReasonForOutOfService">25</Enum>
<String name="LastProtocolEventSent">Sent:REGISTER sip:198.51.100.31 SIP/2.0 Cseq:11810 REGISTER CallId
<String name="LastProtocolEventReceived">Rcvd:SIP/2.0 202 Accepted Cseq:1000 REFER CallId:d0ec35c1-d98e
<String name="ReasonForOutOfServiceText">LastTimeInitialized</String>
<String name="ActiveInterface">Wired</String>
</ParameterList>
</Alarm>
</x-cisco-alarm>
```

******** 202 Accepted message to the REFER ********

```
SIP/2.0 202 Accepted
Via: SIP/2.0/TCP 198.51.100.109:50806;branch=z9hG4bK25771c8e
From: "2001" <sip:2001@198.51.100.109>;tag=d0ec35c1d98e00030abbb40d-0dadaa5e
```

```
To: <sip:198.51.100.31>;tag=1984400291
Date: Fri, 21 Jul 2023 18:08:58 GMT
Call-ID: d0ec35c1-d98e0003-657a07f3-6d626333@198.51.100.109
CSeq: 1000 REFER
Contact: <sip:198.51.100.31:5060;transport=tcp>
Content-Length: 0
```

********注册来自IP电话服务器的SIP消********

```
REGISTER sip:198.51.100.31 SIP/2.0
Via: SIP/2.0/TCP 198.51.100.109:50806;branch=z9hG4bK0aeff5a4
From: <sip:2001@198.51.100.31>;tag=d0ec35c1d98e00044e764ab3-2227c9d6
To: <sip:2001@198.51.100.31>
Call-ID: d0ec35c1-d98e0002-71e1f429-052f5580@198.51.100.109
Max-Forwards: 70
Session-ID: 92eb5cca00105000a000d0ec35c1d98e;remote=00000000000000000000000000000000
Date: Fri, 21 Jul 2023 18:05:31 GMT
CSeq: 101 REGISTER
User-Agent: Cisco-CP8811/14.2.1
Contact: <sip:fa7155fd-ec0d-7b35-c49b-86e9f163bf11@198.51.100.109:50806;transport=tcp>;+sip.instance="<
Supported: replaces,join,sdp-anat,norefersub,resource-priority,extended-refer,X-cisco-callinfo,X-cisco-
Reason: SIP;cause=200;text="cisco-alarm:25 Name=SEPD0EC35C1D98E ActiveLoad=sip88xx.14-2-1-0001-14.loads
Expires: 3600
Content-Type: multipart/mixed; boundary=uniqueBoundary
Mime-Version: 1.0
Content-Length: 1313
```

******** CUCM将200 OK发送到REGISTER消息********

```
SIP/2.0 200 OK
Via: SIP/2.0/TCP 198.51.100.109:50806;branch=z9hG4bK0aeff5a4
From: <sip:2001@198.51.100.31>;tag=d0ec35c1d98e00044e764ab3-2227c9d6
To: <sip:2001@198.51.100.31>;tag=757446526
Date: Fri, 21 Jul 2023 18:08:58 GMT
Call-ID: d0ec35c1-d98e0002-71e1f429-052f5580@198.51.100.109
Server: Cisco-CUCM14.0
CSeq: 101 REGISTER
Expires: 120
Contact: <sip:fa7155fd-ec0d-7b35-c49b-86e9f163bf11@198.51.100.109:50806;transport=tcp>;+sip.instance="<
Supported: X-cisco-srtp-fallback,X-cisco-sis-10.0.0
Content-Type: application/x-cisco-remotecc-response+xml
Content-Length: 381
```

排除许多终端注销故障

对于此问题，需要一些受影响电话的几个MAC地址。

为了简化流程，需要有一个文本编辑器，如Notepad++、Visual Studio或其他。

要解决此问题，可验证事件查看器日志。在事件查看器日志中，可在此处找到注册和未注册终端、ITL和CTL信息、终端类型、活动固件、电话协议、未注册原因等事件。

缩小问题的步骤：

1. 在文本编辑器中打开日志文件夹
2. 在所有文件夹中搜索
3. 搜索 endpointunregistered

   这向我们显示了包含此词的syslog文件夹和SDL文件的所有结果。

<#root>

5440:

Jul 17 21:45:17

cucmsub local6 6 ccm: 19: xxxxxxx.xxxxxx.xx Jul 18 2023 02:45:17 UTC : %UC_CALLMANAGER-6-EndPointUnreg

DeviceName=SEPXXXXXXXXXXXX

][IPAddress=198.51.100.117][Protocol=SIP][DeviceType=622][Description=SEPXXXXXXXXXXXX_CP_7841][

Reason=28

][IPAddrAttributes=0][AppID=Cisco CallManager][ClusterID=SSPTSite}][NodeID=cucmsub]: An endpoint has un

EndPointUnregistered系统错误消息说明

IP地址：受影响终端的IP。

设备名称：受影响终端的MAC地址。

协议：终端注册所使用的协议。
设备类型：终端模型的类型。

要了解设备类型型号和名称，请在CLI上运行：运行sql select enum，从typemodel获取名称
描述:注册电话时，在Call Manager中设置说明。

理由：系统错误消息的原因。

在此处查找系统错误消息的所有原因。
IPAddrAttributes:描述IP的用法。
应用ID:统一服务器的类型。
节点ID:节点名称.

您必须关注错误消息的原因编号、mac地址和时间戳，以使警报与您的事件匹配，然后导航到找到原因的页。



注意：系统错误消息页面包含RTMT上可用的所有警报，以及触发警报的原因说明和说明。

打开页面后：

1.按CTRL + F（在Windows上）或Command + F（在MacOs上）

2.搜索EndPointUnregistered

Error Message
%UC_CALLMANAGER-3-EndPointUnregistered: %[DeviceName=String][MACAddress=String][IPAddress=String] [Protocol=String][DeviceType=Enum][Description=String][Reason=Enum][IPV6Address=String][IPAddrAttributes=Enum] [IPV6AddrAttributes=Enum][LastSignalReceived=String][CallState=String][AppID=String][ClusterID=String] [NodeID=String]: An endpoint has unregistered.

Explanation An endpoint that has previously registered with Cisco Unified Communications Manager has unregistered. In cases of normal unregistration with reason code 'CallManagerReset', 'CallManagerRestart', 'DeviceInitiatedReset', 'EMLoginLogout', or 'EMCCLoginLogout', the severity of this alarm is lowered to INFORMATIONAL. An endpoint can unregister for many reasons, both intentional such as manually resetting the device after a configuration change, or unintentional such as loss of network connectivity. Other causes for this alarm could include a phone being registered to a secondary node and then the primary node coming online, causing the phone to rehome to the primary Unified CM node. Or, lack of a KeepAlive message being returned from the Unified CM node to which this endpoint was registered. Unregistration also occurs if Unified CM receives a duplicate registration request for this same device.

Recommended Action Actions to take vary depending on the reason specified for the endpoint unregistration. If the reason is ConfigurationMismatch, go to the Device Configuration page in Cisco Unified CM Administration, make a change to the Description field for this device, click Save, then reset the device. In the case of a network connectivity problem or loss of KeepAlives, use network diagnostic tools and the Cisco Unified CM Reporting tool to fix any reported network or Unified CM system errors. In the case of an endpoint rehoming to the primary Unified CM node, watch for a successful registration of the device on the primary node. In the case of a duplicate registration request, it may be a non-malicious occurrence due to timing of an endpoint registering and unregistering; if duplicate registration requests continue or if the same endpoint has different IP addresses, confirm the IP address on the physical device itself by checking the settings on the device (settings button). If unregistration of this device was expected, no action is required. Also, refer to the reason code descriptions in this alarm for additional recommended actions.

Reason Code - Enum Definitions

Enum Definitions - DeviceType

Value	Definition
1	CISCO_30SP+
2	CISCO_12SP+
3	CISCO_12SP

3.向下滚动，直至找到Enum Definitions - Reason

4.在系统错误消息中搜索原因编号

28	FallbackInitiated - The device has initiated a fallback and will automatically re-register to a higher-priority Unified CM. No action is necessary.

如果需要更多信息，电话上的pcap是逐步查看电话注册过程的最佳选项。

设备类型型号列表

要了解与警报中显示的DeviceType字段关联的设备类型，可以在注册电话的CUCM的CLI中运行查询。

查询：运行sql select enum，name from typemodel

```
enum name
===== ================================================
1 Cisco 30 SP+
2 Cisco 12 SP+
3 Cisco 12 SP
4 Cisco 12 S
5 Cisco 30 VIP
6 Cisco 7910
7 Cisco 7960
8 Cisco 7940
9 Cisco 7935
10 Cisco VGC Phone
11 Cisco VGC Virtual Phone
12 Cisco ATA 186
15 EMCC Base Phone
20 SCCP Phone
30 Analog Access
40 Digital Access
42 Digital Access+
43 Digital Access WS-X6608
47 Analog Access WS-X6624
48 VGC Gateway
50 Conference Bridge
51 Conference Bridge WS-X6608
52 Cisco IOS Conference Bridge (HDV2)
53 Cisco Conference Bridge (WS-SVC-CMM)
61 H.323 Phone
62 H.323 Gateway
70 Music On Hold
71 Device Pilot
72 CTI Port
73 CTI Route Point
80 Voice Mail Port
83 Cisco IOS Software Media Termination Point (HDV2)
84 Cisco Media Server (WS-SVC-CMM-MS)
85 Cisco Video Conference Bridge (IPVC-35xx)
86 Cisco IOS Heterogeneous Video Conference Bridge
87 Cisco IOS Guaranteed Audio Video Conference Bridge
88 Cisco IOS Homogeneous Video Conference Bridge
90 Route List
100 Load Simulator
110 Media Termination Point
111 Media Termination Point Hardware
112 Cisco IOS Media Termination Point (HDV2)
113 Cisco Media Termination Point (WS-SVC-CMM)
115 Cisco 7941
119 Cisco 7971
120 MGCP Station
121 MGCP Trunk
122 GateKeeper
124 7914 14-Button Line Expansion Module
125 Trunk
126 Tone Announcement Player
131 SIP Trunk
132 SIP Gateway
133 WSM Trunk
134 Remote Destination Profile
227 7915 12-Button Line Expansion Module
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228 7915 24-Button Line Expansion Module
229 7916 12-Button Line Expansion Module
230 7916 24-Button Line Expansion Module
232 CKEM 36-Button Line Expansion Module
253 SPA8800
254 Unknown MGCP Gateway
255 Unknown
302 Cisco 7985
307 Cisco 7911
308 Cisco 7961G-GE
309 Cisco 7941G-GE
335 Motorola CN622
336 Third-party SIP Device (Basic)
348 Cisco 7931
358 Cisco Unified Personal Communicator
365 Cisco 7921
369 Cisco 7906
374 Third-party SIP Device (Advanced)
375 Cisco TelePresence
376 Nokia S60
404 Cisco 7962
412 Cisco 3951
431 Cisco 7937
434 Cisco 7942
435 Cisco 7945
436 Cisco 7965
437 Cisco 7975
446 Cisco 3911
468 Cisco Unified Mobile Communicator
478 Cisco TelePresence 1000
479 Cisco TelePresence 3000
480 Cisco TelePresence 3200
481 Cisco TelePresence 500-37
484 Cisco 7925
493 Cisco 9971
495 Cisco 6921
496 Cisco 6941
497 Cisco 6961
503 Cisco Unified Client Services Framework
505 Cisco TelePresence 1300-65
520 Cisco TelePresence 1100
521 Transnova S3
522 BlackBerry MVS VoWifi
537 Cisco 9951
540 Cisco 8961
547 Cisco 6901
548 Cisco 6911
550 Cisco ATA 187
557 Cisco TelePresence 200
558 Cisco TelePresence 400
562 Cisco Dual Mode for iPhone
564 Cisco 6945
575 Cisco Dual Mode for Android
577 Cisco 7926
580 Cisco E20
582 Generic Single Screen Room System
583 Generic Multiple Screen Room System
584 Cisco TelePresence EX90
585 Cisco 8945
586 Cisco 8941
588 Generic Desktop Video Endpoint
590 Cisco TelePresence 500-32

591 Cisco TelePresence 1300-47
592 Cisco 3905
593 Cisco Cius
594 VKEM 36-Button Line Expansion Module
596 Cisco TelePresence TX1310-65
597 Cisco TelePresence MCU
598 Ascom IP-DECT Device
599 Cisco TelePresence Exchange System
604 Cisco TelePresence EX60
606 Cisco TelePresence Codec C90
607 Cisco TelePresence Codec C60
608 Cisco TelePresence Codec C40
609 Cisco TelePresence Quick Set C20
610 Cisco TelePresence Profile 42 (C20)
611 Cisco TelePresence Profile 42 (C60)
612 Cisco TelePresence Profile 52 (C40)
613 Cisco TelePresence Profile 52 (C60)
614 Cisco TelePresence Profile 52 Dual (C60)
615 Cisco TelePresence Profile 65 (C60)
616 Cisco TelePresence Profile 65 Dual (C90)
617 Cisco TelePresence MX200
619 Cisco TelePresence TX9000
620 Cisco TelePresence TX9200
621 Cisco 7821
622 Cisco 7841
623 Cisco 7861
626 Cisco TelePresence SX20
627 Cisco TelePresence MX300
628 IMS-integrated Mobile (Basic)
631 Third-party AS-SIP Endpoint
632 Cisco Cius SP
633 Cisco TelePresence Profile 42 (C40)
634 Cisco VXC 6215
635 CTI Remote Device
640 Usage Profile
642 Carrier-integrated Mobile
645 Universal Device Template
647 Cisco DX650
648 Cisco Unified Communications for RTX
652 Cisco Jabber for Tablet
659 Cisco 8831
681 Cisco ATA 190
682 Cisco TelePresence SX10
683 Cisco 8841
684 Cisco 8851
685 Cisco 8861
688 Cisco TelePresence SX80
689 Cisco TelePresence MX200 G2
690 Cisco TelePresence MX300 G2
20000 Cisco 7905
30002 Cisco 7920
30006 Cisco 7970
30007 Cisco 7912
30008 Cisco 7902
30016 Cisco IP Communicator
30018 Cisco 7961
30019 Cisco 7936
30027 Analog Phone
30028 ISDN BRI Phone
30032 SCCP gateway virtual phone
30035 IP-STE
36041 Cisco TelePresence Conductor

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36042 Cisco DX80
36043 Cisco DX70
36049 BEKEM 36-Button Line Expansion Module
36207 Cisco TelePresence MX700
36208 Cisco TelePresence MX800
36210 Cisco TelePresence IX5000
36213 Cisco 7811
36216 Cisco 8821
36217 Cisco 8811
36219 Interactive Voice Response
36224 Cisco 8845
36225 Cisco 8865
36227 Cisco TelePresence MX800 Dual
36232 Cisco 8851NR
36235 Cisco Spark Remote Device
36239 Cisco Webex DX80
36241 Cisco TelePresence DX70
36247 Cisco 7832
36248 Cisco 8865NR
36250 Cisco Meeting Server
36251 Cisco Webex Room Kit
36254 Cisco Webex Room 55
36255 Cisco Webex Room Kit Plus
36256 CP-8800-Video 28-Button Key Expansion Module
36257 CP-8800-Audio 28-Button Key Expansion Module
36258 Cisco 8832
36259 Cisco Webex Room 70 Single
36260 Cisco 8832NR
36262 Cisco ATA 191
36265 Cisco Webex Room 70 Dual
36292 Cisco Webex Room Kit Pro
36295 Cisco Webex Room 55 Dual
36296 Cisco Webex Room 70 Single G2
36297 Cisco Webex Room 70 Dual G2
36299 Cisco Webex Room Kit Mini
36304 Cisco Webex Board 55
36305 Cisco Webex Board 70
36306 Cisco Webex Board 85
36307 Cisco Webex Desk Pro
36308 Cisco Webex Room Panorama
36309 Cisco Webex Room 70 Panorama
36312 Cisco Webex Room Phone
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