

配置无线IP电话注册并排除故障

目录

[简介](#)

[先决条件](#)

[要求](#)

[使用的组件](#)

[配置](#)

[思科统一无线局域网控制器和接入点](#)

[无线局域网\(WLAN\)设置](#)

[控制器设置](#)

[802.11网络设置](#)

[配置思科统一IP电话9971](#)

[无线LAN设置](#)

[配置Cisco Unified Communications Manager](#)

[确认](#)

[故障排除](#)

简介

本文档介绍如何配置无线IP电话注册并排除其故障到Cisco Unified Communications Manager(CUCM)。

思科无线IP电话适用于需要断开有线网络连接并保持连接的用户。

作者：Luis Segnini和Kenny Araya，思科TAC工程师。

先决条件

要求

Cisco 建议您了解以下主题：

- 无线架构
- 无线IP电话配置
- CUCM基本配置

使用的组件

- 思科统一通信管理器8.6或更高版本
- 无线IP电话型号(792X、9971、8821)

以下指南基于Cisco Unified 9971 IP电话型号。配置可能因IP电话型号而异。

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。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

配置

思科统一无线局域网控制器和接入点

无线局域网(WLAN)设置

建议为IP电话使用单独的服务集标识符(SSID)。但是，如果已配置现有SSID以支持支持语音的思科无线局域网终端，则可以改用该WLAN。

IP电话使用的SSID可配置为仅适用于特定802.11无线电类型。

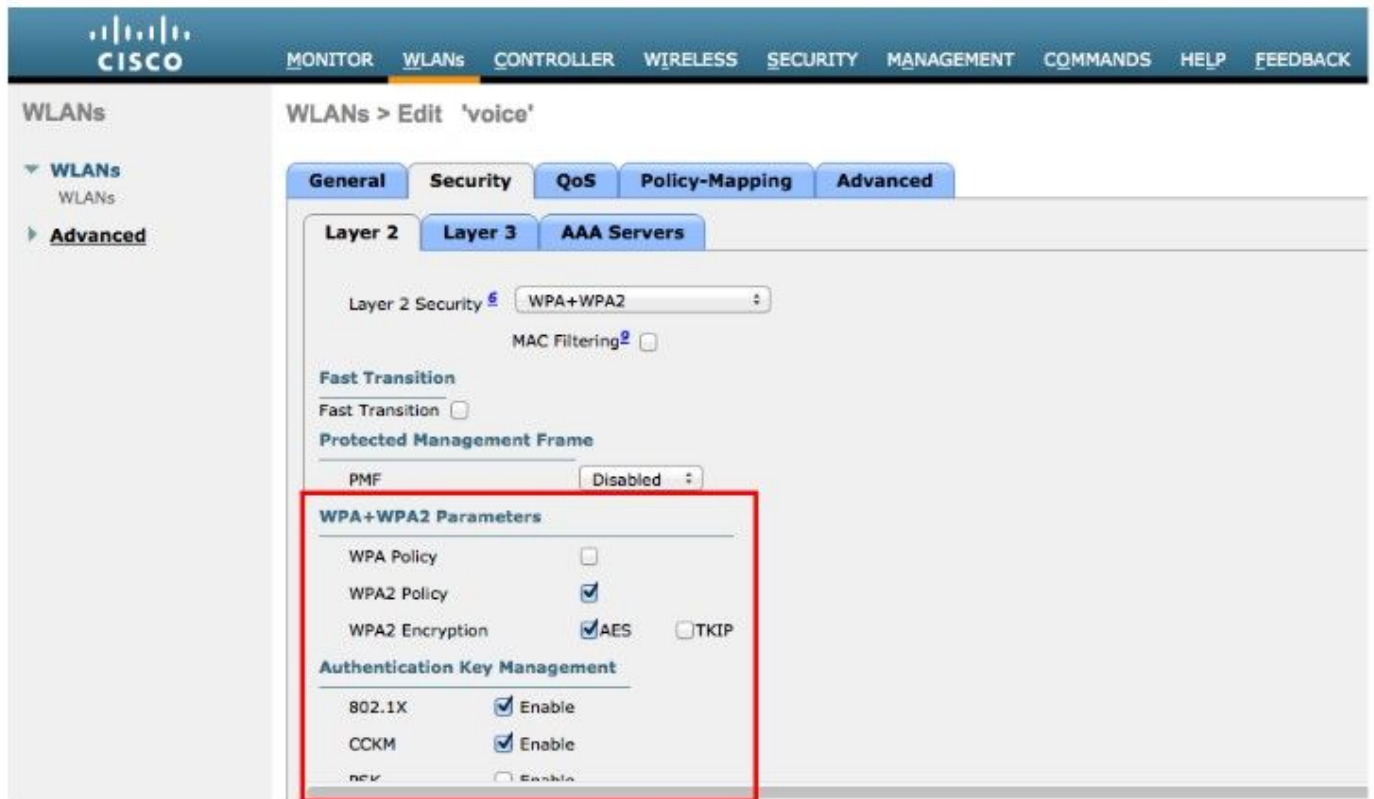
建议使IP电话在5 GHz频段上运行，因为它有许多可用信道，而且干扰源不如2.4 GHz频段。

确保所选SSID未被任何其他无线LAN使用，因为在通电或漫游期间可能导致故障；尤其是使用不同安全类型时。

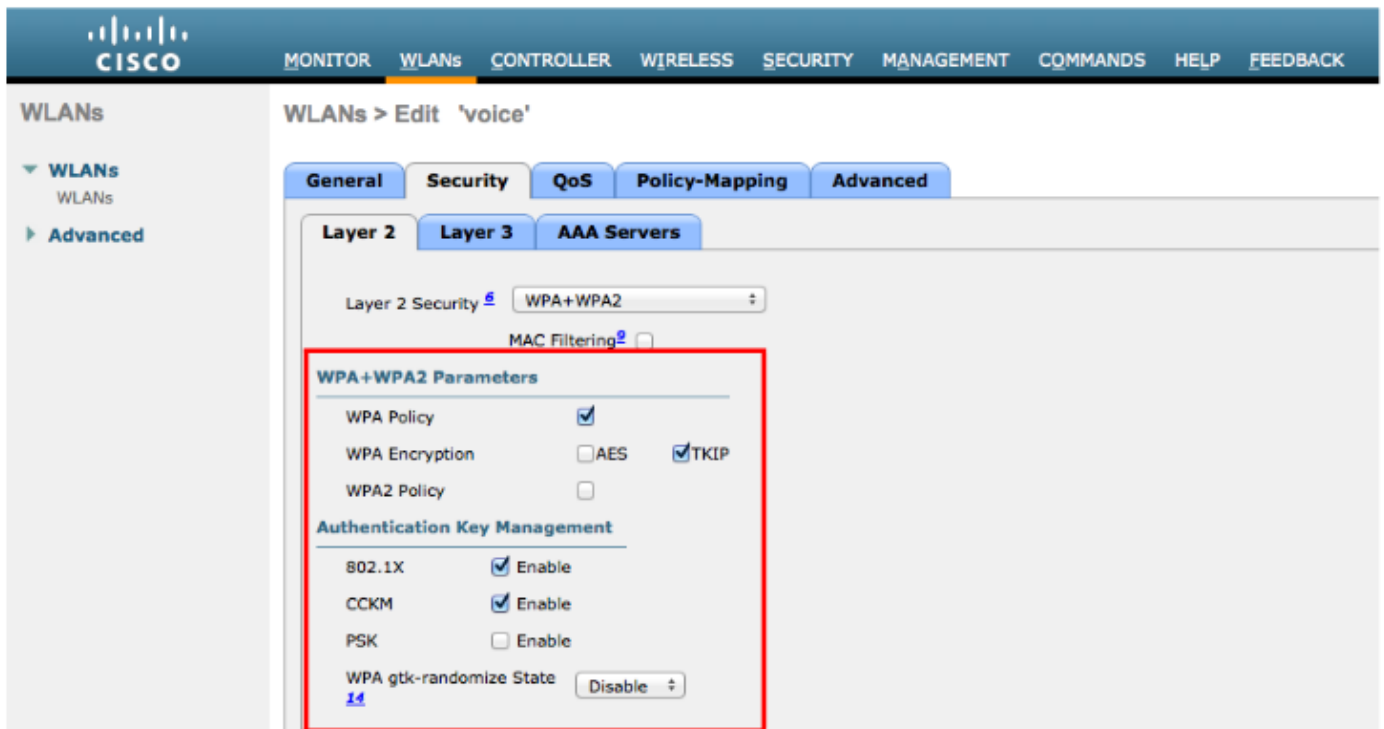
The screenshot displays the Cisco WLAN configuration page for a profile named 'voice'. The interface includes a top navigation bar with tabs for MONITOR, WLANs, CONTROLLER, WIRELESS, SECURITY, MANAGEMENT, COMMANDS, HELP, and FEEDBACK. The left sidebar shows a tree view with 'WLANs' expanded. The main content area is titled 'WLANs > Edit 'voice'' and contains several tabs: General, Security, QoS, Policy-Mapping, and Advanced. The 'General' tab is active, showing the following configuration details:

Profile Name	voice
Type	WLAN
SSID	voice
Status	☒ Enabled
Security Policies	[WPA2][Auth(802.1X + CCKM)] (Modifications done under security tab will appear after applying the changes.)
Radio Policy	802.11a only
Interface/Interface Group(G)	rtp-9 voice
Multicast Vlan Feature	☐ Enabled
Broadcast SSID	☒ Enabled
NAS-ID	WLC5508-1

为了利用思科集中密钥管理(CCKM)，请在IP电话按顺序运行固件版本9.1(1)或更高版本时启用Wi-Fi保护访问(WPA)2策略和高级加密标准(AES)加密和802.1x + CCKM，以验证密钥管理类型启用快速安全漫游。



如果IP电话运行9.1(1)之前的固件版本，则启用带临时密钥完整性协议(TKIP)加密和802.1x + CCKM的WPA策略以进行身份验证的密钥管理类型，以便启用快速安全漫游。



仅当IP电话或其他启用WMM的电话将使用此SSID时，Wi-Fi多媒体(WMM)策略才应设置为“必需”。如果WLAN中存在none-WMM客户端，建议将这些客户端放在另一个SSID/WLAN上。如果非其他WMM客户端必须使用与IP电话相同的SSID，则确保WMM策略设置为“允许”。

启用7920接入点(AP)呼叫准入控制(CAC)以向客户端通告服务质量(QoS)基本服务集(QBSS)。

CISCO MONITOR **WLANs** CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDBACK

WLANs

▼ WLANs
WLANs

► Advanced

WLANs > Edit 'voice'

General Security **QoS** Policy-Mapping Advanced

Quality of Service (QoS) Platinum (voice)

Application Visibility ☒ Enabled

AVC Profile none

Netflow Monitor none

Override Per-User Bandwidth Contracts (kbps) [16](#)

	DownStream	UpStream
Average Data Rate	0	0
Burst Data Rate	0	0
Average Real-Time Rate	0	0
Burst Real-Time Rate	0	0

Clear

Override Per-SSID Bandwidth Contracts (kbps) [16](#)

	DownStream	UpStream
Average Data Rate	0	0
Burst Data Rate	0	0

CISCO MONITOR **WLANs** CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDBACK

WLANs

▼ WLANs
WLANs

► Advanced

WLANs > Edit 'voice'

General Security **QoS** Policy-Mapping Advanced

Burst Real-Time Rate 0 0

Clear

Override Per-SSID Bandwidth Contracts (kbps) [16](#)

	DownStream	UpStream
Average Data Rate	0	0
Burst Data Rate	0	0
Average Real-Time Rate	0	0
Burst Real-Time Rate	0	0

Clear

WMM

WMM Policy Required

7920 AP CAC ☒ Enabled

7920 Client CAC ☐ Enabled

Media Stream

Multicast Direct ☒ Enabled

根据您的要求配置启用会话超时(Enable Session Timeout)。

建议禁用会话超时或延长超时(例如24小时/86400秒)，以避免音频呼叫期间可能发生的中断。如果禁用，则会避免完全中断，但会话超时有利于定期重新验证客户端凭据，以确保客户端使用有效凭据。

必须禁用启用Aironet扩展(Aironet IE)、点对点(P2P)阻止操作。根据需要配置客户端排除(Client

Exclusion)，可以调整Off Channel Scanning Defer（关闭通道扫描延迟）以延迟某些队列的扫描以及扫描延迟时间。

可根据需要配置每个AP无线电的最大允许客户端数。

必须禁用所需的动态主机配置协议(DHCP)地址分配。

管理帧保护必须设置为“最佳”或“禁用”。

为了获得最佳电池性能和质量，请使用2的传输流量指示消息(DTIM)周期和100毫秒的信标周期。

确保禁用客户端负载均衡和客户端频段选择。

CISCO MONITOR **WLANs** CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDBACK

WLANs

WLANs > Edit 'voice'

General Security QoS Policy-Mapping **Advanced**

Allow AAA Override ☐ Enabled

Coverage Hole Detection ☒ Enabled

Enable Session Timeout ☒ 86400
Session Timeout (secs)

Aironet IE ☒ Enabled

Diagnostic Channel ☐ Enabled

Override Interface ACL IPv4 None IPv6 None

Layer2 Acl None

P2P Blocking Action Disabled

Client Exclusion ☐ Enabled

Maximum Allowed Clients 0

Static IP Tunneling ☐ Enabled

Wi-Fi Direct Clients Policy Disabled

Maximum Allowed Clients Per AP Radio 20

DHCP

DHCP Server ☐ Override

DHCP Addr. Assignment ☐ Required

OEAP

Split Tunnel (Printers) ☐ Enabled

Management Frame Protection (MFP)

MFP Client Protection Optional

DTIM Period (in beacon intervals)

802.11a/n (1 - 255) 2

802.11b/g/n (1 - 255) 2

NAC

NAC State None

Load Balancing and Band Select

CISCO MONITOR **WLANs** CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDBACK

WLANs

WLANs > Edit 'voice'

General Security QoS Policy-Mapping **Advanced**

Clear HotSpot Configuration ☐ Enabled

Client user idle timeout(15-1000000) ☐

Client user idle threshold (0-10000000) 0 Bytes

Off Channel Scanning Defer

Scan Defer Priority 0 1 2 3 4 5 6 7
☐ ☐ ☐ ☐ ☒ ☒ ☒ ☐

Scan Defer Time(msecs) 100

FlexConnect

FlexConnect Local Switching ☐ Enabled

FlexConnect Local Auth ☐ Enabled

Learn Client IP Address ☒ Enabled

Vlan based Central Switching ☐ Enabled

Load Balancing and Band Select

Client Load Balancing ☐

Client Band Select ☐

Passive Client

Passive Client ☐

Voice

Media Session Snooping ☐ Enabled

Re-anchor Roamed Voice Clients ☐ Enabled

KTS based CAC Policy ☐ Enabled

Radius Client Profiling

DHCP Profiling ☐

HTTP Profiling ☐

Local Client Profiling

DHCP Profiling ☐

HTTP Profiling ☐

PMIP

控制器设置

确保Cisco Unified Wireless LAN控制器主机名配置正确。

如果使用思科统一无线局域网控制器上的多个端口，请启用链路聚合(LAG)。

配置所需的AP组播模式。在6.0之前的版本中，在常规控制器设置中配置了主动负载均衡。在6.0及更高版本中，这称为客户端负载均衡，可在WLAN配置 (SSID设置) 下配置。

MONITOR
WLANs
CONTROLLER
WIRELESS
SECURITY
MANAGEMENT
COMMANDS
HELP
FEEDBACK

Controller

General
Inventory
Interfaces
Interface Groups
Multicast
Network Routes
Redundancy
Internal DHCP Server
Mobility Management
Ports
NTP
CDP
PMIPv6
IPv6
mDNS
Advanced

General

Name
WLC5508-1

802.3x Flow Control Mode
Disabled

LAG Mode on next reboot
Enabled

Broadcast Forwarding
Disabled

AP Multicast Mode 1
Unicast

AP Fallback
Enabled

Fast SSID change
Disabled

Default Mobility Domain Name
VTG-VoWLAN

RF Group Name
VTG-VoWLAN

User Idle Timeout (seconds)
300

ARP Timeout (seconds)
300

Web Radius Authentication
PAP

Operating Environment
Commercial (0 to 40 C)

Internal Temp Alarm Limits
0 to 65 C

WebAuth Proxy Redirection Mode
Disabled

WebAuth Proxy Redirection Port
0

Maximum Allowed APs 2
0

Global IPv6 Config
Enabled

HA SKU secondary unit
Disabled

1. Multicast is not supported with FlexConnect on this platform.

2. Value zero implies there is no restriction on maximum allowed APs.

802.11网络设置

如果使用5 GHz，请确保802.11a网络状态为“已启用”。将信标周期设置为100毫秒。

确保启用动态传输功率控制(DTPC)支持。如果使用Cisco 802.11n接入点，请确保已启用ClientLink。使用当前版本，可以配置Maximum Allowed Clients。

建议将12 Mbps设置为强制（基本）速率，将18 - 24或18 - 54 Mbps设置为支持（可选）速率；但是，某些环境可能需要6 Mbps才能启用为必需（基本）。36 - 54 Mbps可以选择禁用，如果没有应用可以从这些速率（如视频）中受益。

启用CCX位置测量。

Wireless

802.11a Global Parameters

General

802.11a Network Status ☒ Enabled

Beacon Period (milliseconds)

Fragmentation Threshold (bytes)

DTPC Support ☒ Enabled

Maximum Allowed Clients

RSSI Low Check ☒ Enabled

RSSI Threshold (-60 to -90 dBm)

802.11a Band Status

Low Band	Enabled
Mid Band	Enabled
High Band	Enabled

Data Rates**

6 Mbps	Disabled
9 Mbps	Disabled
12 Mbps	Mandatory
18 Mbps	Supported
24 Mbps	Supported
36 Mbps	Supported
48 Mbps	Supported
54 Mbps	Supported

CCX Location Measurement

Mode ☒ Enabled

Interval (seconds)

配置思科统一IP电话9971

要在IP电话上配置Wi-Fi设置，请使用键盘和触摸屏导航至应用按钮>管理员设置>网络设置>WLAN设置。

无线LAN设置

使用以下指南配置无线LAN配置文件。

- 确保无线设置为“On”。
- WLAN登录访问可设置为On，以在“应用”菜单中提供快捷访问，以更新用户名或密码。
- 输入语音无线LAN的SSID（区分大小写）。

思科统一IP电话9971支持单个无线LAN配置文件，允许单个SSID。

有三种不同的802.11模式。

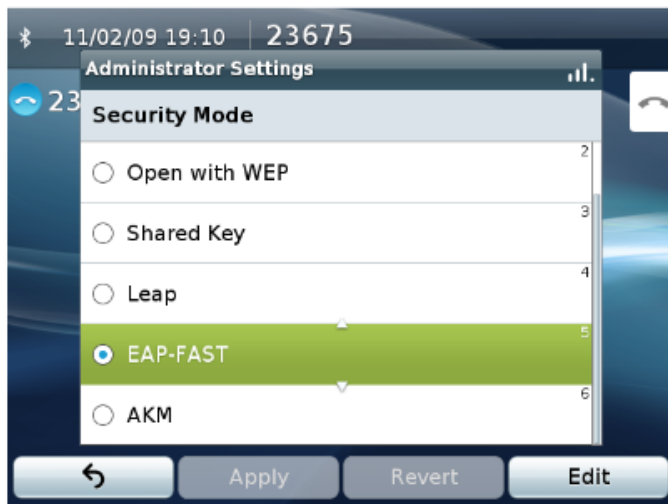
- 自动
- 802.11a
- 802.11b/g

自动模式将扫描2.4和5 GHz信道，并尝试在配置的网络可用时将5 GHz信号与接入点关联。

802.11a模式将仅扫描5 GHz信道，而802.11b/g模式将仅扫描2.4 GHz信道，如果配置的网络可用，则将尝试与接入点关联。

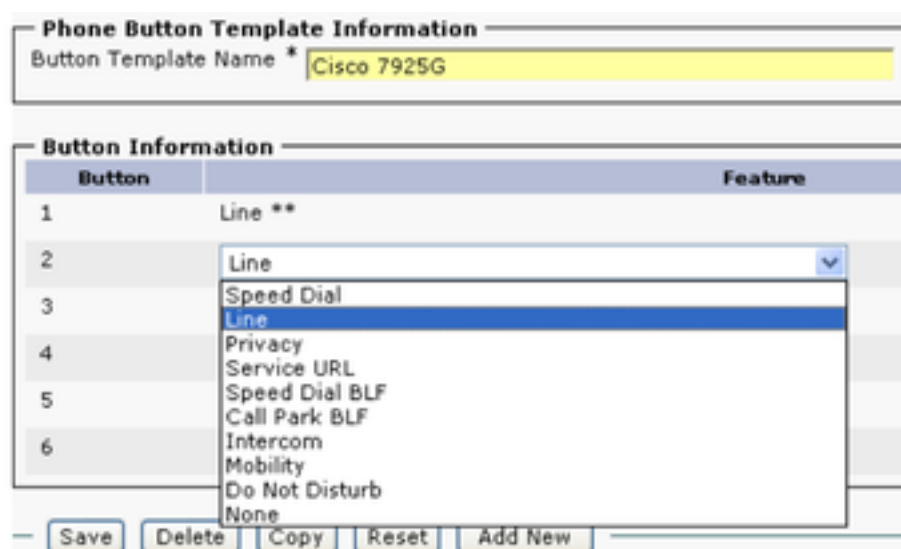
将IP电话配置为在安全模式下使用Open with Wired Equivalent Privacy(WEP)或Shared Key，输入与接入点配置匹配的静态WEP密钥信息。

- 在IPv4 Setup（IPv4设置）中，选择是使用DHCP还是配置静态IP信息。
- 如果选项150或66未配置为通过网络的DHCP范围提供简单文件传输协议(TFTP)服务器的IP地址，则将Alternate TFTP（备用TFTP）设置为“Yes”，并输入TFTP服务器的IP地址。



配置Cisco Unified Communications Manager

步骤1.为IP电话配置正确的Phone按钮模板。



步骤2.将IP电话添加到CUCM。

步骤3.填写必填字段。

步骤4.分配新创建的电话按键模板和软键模板。

步骤5.对IP电话使用非安全配置文件。

安全配置文件可用于启用身份验证模式或加密模式，然后启用信令、媒体和配置文件加密。证书颁发机构代理功能(CAPF)必须运行，才能使用具有安全配置文件的本地签名证书(LSC)。思科统一无线IP电话7925G、7925G - E X和7926 G具有制造安装证书(MIC)，也可与安全配置文件一起使用。

确认

从IP电话收集控制台日志。我们可以看到IP电话和接入点之间交换的不同消息。

IP电话开始扫描介质以查找可用的SSID。

```
09039 08-10 09:33:32.750 649 668 INF wlanmgr : [1298@wm_drv_mrvl.c] State change(1542),  
DISCONNECTED -> SCANNING  
09040 08-10 09:33:32.750 685 2805 DEB LibWifi : wifi_wait_for_event(CTRL-EVENT-STATE-CHANGE id=0  
state=3)  
09041 08-10 09:33:32.750 685 2805 DEB LibWifi : wifi_wait_for_event()  
09042 08-10 09:33:35.390 1063 2652 INF Unknown : VVMService: Waiting for 39961 ms before  
attempting to reconnect.  
09043 08-10 09:33:35.468 685 807 DEB StateMachine: handleMessage: E msg.what=401431  
09044 08-10 09:33:35.468 685 807 DEB StateMachine: processMsg: AdapterConnectedState  
09045 08-10 09:33:35.468 685 807 VBS EthernetStateMachine: AdapterConnectedState{ what=401431  
when=-1ms }  
09046 08-10 09:33:35.468 685 807 DEB StateMachine: handleMessage: X  
09047 08-10 09:33:36.617 649 664 INF wlanmgr : [1298@wm_drv_mrvl.c] State change(1559), SCANNING  
-> INACTIVE  
09048 08-10 09:33:36.617 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=56  
09049 08-10 09:33:36.617 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1002  
09050 08-10 09:33:36.617 210 313 INF SWMAN : Got a messge NEW_LINK message!!!  
09051 08-10 09:33:36.617 685 2805 DEB LibWifi : wifi_wait_for_event(CTRL-EVENT-STATE-CHANGE id=0  
state=2)  
09052 08-10 09:33:36.617 685 2805 DEB LibWifi : wifi_wait_for_event()  
09053 08-10 09:33:36.617 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged:  
down
```

IP电话开始与SSID关联。

```
09054 08-10 09:33:36.718 649 668 INF wlanmgr : [1293@wm_drv_mrvl.c] State change(2221), "",  
INACTIVE -> ASSOCIATING  
09055 08-10 09:33:36.718 649 668 INF wlanmgr : [2226@wm_drv_mrvl.c] Connecting to "lcorrean  
Wireless", a0:55:4f:c2:ec:eb, chan 56, rssi -56, load 4  
09056 08-10 09:33:36.718 685 2805 DEB LibWifi : wifi_wait_for_event(CTRL-EVENT-STATE-CHANGE id=-  
1 state=5)  
09057 08-10 09:33:36.718 685 2805 DEB LibWifi : wifi_wait_for_event()  
09058 08-10 09:33:36.734 2348 2348 VBS Settings.AccessPoint: refresh: for SSID lcorrean Wireless  
09059 08-10 09:33:36.734 2348 2348 VBS Settings.CiscoWifiModifiable: Translating Wifi modifiable  
state 0 for SSID: "lcorrean Wireless"
```

IP电话已成功与接入点关联。

```
09093 08-10 09:33:38.835 649 664 INF wlanmgr : [1293@wm_drv_mrvl.c] State change(2479),  
"lcorrean Wireless", ASSOCIATING -> ASSOCIATED  
09094 08-10 09:33:38.835 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=112  
09095 08-10 09:33:38.835 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1003  
09096 08-10 09:33:38.835 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
```

```
09097 08-10 09:33:38.835 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=80
09098 08-10 09:33:38.835 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1003
09099 08-10 09:33:38.835 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
09100 08-10 09:33:38.835 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=80
09101 08-10 09:33:38.835 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1003
09102 08-10 09:33:38.835 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
09103 08-10 09:33:38.835 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=132
09104 08-10 09:33:38.835 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1003
09105 08-10 09:33:38.835 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
09106 08-10 09:33:38.835 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=68
09107 08-10 09:33:38.835 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x1003
09108 08-10 09:33:38.835 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
09109 08-10 09:33:38.835 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged:
down
09110 08-10 09:33:38.843 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged:
down
09111 08-10 09:33:38.843 685 2805 DEB LibWifi : wifi_wait_for_event(CTRL-EVENT-STATE-CHANGE id=1
state=6)
09112 08-10 09:33:38.843 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged:
down
```

IP电话启动扩展身份验证。

```
09146 08-10 09:33:39.039 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-
STARTED EAP authentication started
09147 08-10 09:33:39.039 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-
PROPOSED-METHOD vendor=0 method=25
09148 08-10 09:33:39.039 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-METHOD
EAP vendor 0 method 25 (PEAP) selected
09149 08-10 09:33:39.046 225 225 INF PAE : paeGetPort(): recvd macAddress: a0:55:4f:c2:ec:eb
09150 08-10 09:33:39.046 210 749 INF SWMAN : mdk_get_source_port(): mac = a0:55:4f:c2:ec:eb
09151 08-10 09:33:39.046 210 749 INF SWMAN : get_source_port(): START, MAC=0xa0554fc2eceb
09152 08-10 09:33:39.054 210 749 INF SWMAN : get_source_port(): DONE, cdk_port = -1, port = -1,
index = 2
09153 08-10 09:33:39.054 210 749 INF SWMAN : mdk_get_source_port(): rc = 0, port = -1
09154 08-10 09:33:39.054 225 225 INF PAE : paeGetPort(): 340 bytes rcvd from SWMAN, rcvLen: 340
09155 08-10 09:33:39.054 225 225 INF PAE : paeGetPort(): port obtained = -1
09156 08-10 09:33:39.054 225 225 WRN PAE : PAE rcv: msg received from unknown port, drop...
09157 08-10 09:33:39.125 225 225 INF PAE : paeGetPort(): recvd macAddress: a0:55:4f:c2:ec:eb
09158 08-10 09:33:39.125 2348 2348 VBS Settings.AccessPoint: refresh: for SSID lcorream Wireless
09159 08-10 09:33:39.125 2348 2348 VBS Settings.CiscoWifiModifiable: Translating Wifi modifiable
state 0 for SSID: "lcorream Wireless"
09160 08-10 09:33:39.125 2348 2348 VBS Settings.CiscoWifiModifiable: wifi configuration
modifiable state value= 0 internal string value: local
09161 08-10 09:33:39.125 210 749 INF SWMAN : mdk_get_source_port(): mac = a0:55:4f:c2:ec:eb
09162 08-10 09:33:39.125 210 749 INF SWMAN : get_source_port(): START, MAC=0xa0554fc2eceb
```

IP电话检查服务器的证书以查找PEAP。

```
09163 08-10 09:33:39.132 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-PEER-
CERT depth=0 subject='/CN=CUCM-Srv-01.cucm.cotac.com'
09164 08-10 09:33:39.132 210 749 INF SWMAN : get_source_port(): DONE, cdk_port = -1, port = -1,
index = 2
09165 08-10 09:33:39.132 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-PEER-
CERT depth=0 subject='/CN=CUCM-Srv-01.cucm.cotac.com'
09166 08-10 09:33:39.132 210 749 INF SWMAN : mdk_get_source_port(): rc = 0, port = -1
09167 08-10 09:33:39.132 225 225 INF PAE : paeGetPort(): 340 bytes rcvd from SWMAN, rcvLen: 340
09168 08-10 09:33:39.132 225 225 INF PAE : paeGetPort(): port obtained = -1
09169 08-10 09:33:39.132 225 225 WRN PAE : PAE rcv: msg received from unknown port, drop...
09170 08-10 09:33:39.132 225 225 INF PAE : paeGetPort(): recvd macAddress: a0:55:4f:c2:ec:eb
09171 08-10 09:33:39.132 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-PEER-
CERT depth=0 subject='/CN=CUCM-Srv-01.cucm.cotac.com'
```

```
09172 08-10 09:33:39.140 210 749 INF SWMAN : mdk_get_source_port(): mac = a0:55:4f:c2:ec:eb
09173 08-10 09:33:39.140 210 749 INF SWMAN : get_source_port(): START, MAC=0xa0554fc2eceb
09174 08-10 09:33:39.148 210 749 INF SWMAN : get_source_port(): DONE, cdk_port = -1, port = -1,
index = 2
09175 08-10 09:33:39.148 210 749 INF SWMAN : mdk_get_source_port(): rc = 0, port = -1
09176 08-10 09:33:39.148 225 225 INF PAE : paeGetPort(): 340 bytes rcvd from SWMAN, rcvLen: 340
09177 08-10 09:33:39.148 225 225 INF PAE : paeGetPort(): port obtained = -1
```

扩展身份验证成功通过。

```
09226 08-10 09:33:39.312 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: EAP-
SUCCESS EAP authentication completed successfully
09227 08-10 09:33:39.312 210 749 INF SWMAN : mdk_get_source_port(): mac = a0:55:4f:c2:ec:eb
09228 08-10 09:33:39.312 210 749 INF SWMAN : get_source_port(): START, MAC=0xa0554fc2eceb
09229 08-10 09:33:39.320 649 664 INF wlanmgr : [3492@wm_drv_mrvl.c] Supplicant event: CONNECTED
- Connection to a0:55:4f:c2:ec:eb completed (auth) [id=0 id_str=]
```

连接成功。

```
09230 08-10 09:33:39.320 649 664 INF wlanmgr : [1293@wm_drv_mrvl.c] State change(2592),
"lcorream Wireless", ASSOCIATED -> CONNECTED
09231 08-10 09:33:39.320 210 749 INF SWMAN : get_source_port(): DONE, cdk_port = -1, port = -1,
index = 2
09232 08-10 09:33:39.320 649 664 INF wlanmgr : [56@wm_util.c] Wifi connected[lcorream Wireless]:
a0:55:4f:c2:ec:eb, co-cucm, Ch: 56, RSSI: -57
09233 08-10 09:33:39.320 210 749 INF SWMAN : mdk_get_source_port(): rc = 0, port = -1
09234 08-10 09:33:39.320 225 225 INF PAE : paeGetPort(): 340 bytes rcvd from SWMAN, rcvLen: 340
09235 08-10 09:33:39.320 225 225 INF PAE : paeGetPort(): port obtained = -1
09236 08-10 09:33:39.320 225 225 WRN PAE : PAE rcv: msg received from unknown port, drop...
09237 08-10 09:33:39.320 225 225 INF PAE : paeGetPort(): recvd macAddress: a0:55:4f:c2:ec:eb
09238 08-10 09:33:39.320 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged: up
09239 08-10 09:33:39.320 210 313 INF SWMAN : nl_ipThrd():recvmmsg() len=1012
09240 08-10 09:33:39.320 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x11043
09241 08-10 09:33:39.320 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
```

IP电话查找DHCP租用。

```
09588 08-10 09:33:39.703 3246 3246 DEB dhcpd : broadcasting for a lease of 192.168.110.236
09589 08-10 09:33:39.703 3246 3246 DEB dhcpd : Starting to send message numberof message=0
09590 08-10 09:33:39.703 3246 3246 DEB dhcpd : REQUESTING SENT
09591 08-10 09:33:39.703 3246 3246 DEB dhcpd : STATE_RENEWING STATE_REBINDING mlan0
09592 08-10 09:33:39.703 3246 3246 DEB dhcpd : *sending DHCP_REQUEST with xid 0xc89244e9, next
in 3.57 seconds
09593 08-10 09:33:39.703 3246 3246 DEB dhcpd : get_tos_byte() = 96
09594 08-10 09:33:39.703 3246 3246 DEB dhcpd : Set ToS byte for DHCP to configured value of
[96]
09595 08-10 09:33:39.703 2348 2348 VBS Settings.AccessPoint: onBindView: [lcorream Wireless]
modifiable state was empty, setting visibility to gone
09596 08-10 09:33:39.710 2348 2348 VBS Settings.AccessPoint: onBindView: [lcorream Wireless]
modifiable state was empty, setting visibility to gone
09597 08-10 09:33:39.718 2348 2348 VBS Settings.AccessPoint: onBindView: [lcorream Wireless]
modifiable state was empty, setting visibility to gone
09598 08-10 09:33:39.726 2348 2348 VBS Settings.AccessPoint: onBindView: [CUCM-PEAP] modifiable
state was empty, setting visibility to gone
09599 08-10 09:33:39.734 2348 2348 VBS Settings.AccessPoint: onBindView: [CUCM-LAB] modifiable
state was empty, setting visibility to gone
09600 08-10 09:33:39.742 2348 2348 VBS Settings.AccessPoint: onBindView: [Kemirand] modifiable
state was empty, setting visibility to gone
09601 08-10 09:33:39.750 2348 2348 VBS Settings.AccessPoint: onBindView: [Flex_Guest] modifiable
state was empty, setting visibility to gone
09603 08-10 09:33:39.765 2348 2348 VBS Settings.AccessPoint: onBindView: [ASA5506W-A] modifiable
```

```
state was empty, setting visibility to gone
09604 08-10 09:33:39.906 3246 3246 DEB dhcpcd : in handle_dhcp_packet...
09604 08-10 09:33:39.906 3246 3246 DEB dhcpcd :
09605 08-10 09:33:39.906 3246 3246 DEB dhcpcd : in handle_dhcp
```

IP电话从DHCP服务器获得确认。

```
09606 08-10 09:33:39.906 3246 3246 DEB dhcpcd : acknowledged 192.168.110.236 from
192.168.110.122.
09607 08-10 09:33:39.906 3246 3246 DEB dhcpcd : cont_init_retry = OLD:0 NEW:0
09608 08-10 09:33:39.976 3246 3246 DEB dhcpcd : handle_timeout:ifname mlan0 state: 9
09609 08-10 09:33:40.046 3246 3246 DEB dhcpcd : checking 192.168.110.236 is available on
attached networks
09610 08-10 09:33:40.046 3246 3246 DEB dhcpcd : DBG:checking 192.168.110.236 is available on
attached networks
```

IP电话发送无故ARP，确认IP确实可用。

```
09611 08-10 09:33:40.046 3246 3246 DEB dhcpcd : sending ARP probe (1 of 2), next in 1.94 seconds
09612 08-10 09:33:40.468 685 807 DEB StateMachine: handleMessage: E msg.what=401431
09613 08-10 09:33:40.468 685 807 DEB StateMachine: processMsg: AdapterConnectedState
09614 08-10 09:33:40.468 685 807 VBS EthernetStateMachine: AdapterConnectedState{ what=401431
when=-5ms }
09615 08-10 09:33:40.468 685 807 DEB StateMachine: handleMessage: X
09616 08-10 09:33:41.992 3246 3246 DEB dhcpcd : handle_timeout:ifname mlan0 state: 9
09617 08-10 09:33:41.992 3246 3246 DEB dhcpcd : sending ARP probe (2 of 2), next in 2.00 seconds
09618 08-10 09:33:43.992 3246 3246 DEB dhcpcd : handle_timeout:ifname mlan0 state: 9
09619 08-10 09:33:43.992 3246 3246 DEB dhcpcd : binding the DHCP IP address Probe=2
09620 08-10 09:33:43.992 3246 3246 DEB dhcpcd : startup 0 lease of 600
09621 08-10 09:33:43.992 3246 3246 DEB dhcpcd : get_option2addr: 2054072512
09622 08-10 09:33:43.992 3246 3246 DEB dhcpcd : get_option2addr: 134744072
09623 08-10 09:33:43.992 3246 3246 DEB dhcpcd : leased 192.168.110.122 for 600 seconds....server
192.168.110.122
09624 08-10 09:33:43.992 3246 3246 DEB dhcpcd : Check values : state=3 mlan0 192.168.110.122
300/600 192.168.110.236
09625 08-10 09:33:43.992 3246 3246 DEB dhcpcd : executing `/system/etc/dhcpcd/dhcpcd-run-hooks',
reason BOUND
09626 08-10 09:33:43.992 3246 3246 DEB dhcpcd : Entering configure_env....
```

IP电话收到DHCP选项消息。

```
09627 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 1*: new_subnet_mask=255.255.255.0
09628 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 150*:
new_cisco_tftp_server=192.168.110.86
09629 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 3*: new_routers=192.168.110.1
09630 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 6*:
new_domain_name_servers=192.168.110.122 8.8.8.8
09631 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 15*: new_domain_name=cucm.cotac.com
09632 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 51*: new_dhcp_lease_time=600
09633 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 53*: new_dhcp_message_type=5
09634 08-10 09:33:43.992 3246 3246 DEB dhcpcd : option 54*:
new_dhcp_server_identifier=192.168.110.122
09635 08-10 09:33:44.257 3246 3246 DEB dhcpcd : configure: mlan0 adding IP address
192.168.110.236
09636 08-10 09:33:44.265 3246 3246 DEB dhcpcd : adding route to 0.0.0.0/0 via 192.168.110.1
09637 08-10 09:33:44.265 3246 3246 DEB dhcpcd : Writing lease file:
/dataRoot/.system/misc/dhcp/dhcpcd-mlan0.lease
09638 08-10 09:33:44.265 3246 3246 DEB dhcpcd : executing `/system/etc/dhcpcd/dhcpcd-run-hooks',
reason BOUND
09639 08-10 09:33:44.265 3246 3246 DEB dhcpcd : Entering configure_env....
09640 08-10 09:33:44.265 3246 3246 DEB dhcpcd : option 1*: new_subnet_mask=255.255.255.0
```

```
09641 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 150*:
new_cisco_tftp_server=192.168.110.86
09642 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 3*: new_routers=192.168.110.1
09643 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 6*:
new_domain_name_servers=192.168.110.122 8.8.8.8
09644 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 15*: new_domain_name=cucm.cotac.com
09645 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 51*: new_dhcp_lease_time=600
09646 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 53*: new_dhcp_message_type=5
09647 08-10 09:33:44.265 3246 3246 DEB dhcpd : option 54*:
new_dhcp_server_identifier=192.168.110.122
09648 08-10 09:33:44.265 214 241 INF NETSD : nl_ipThrd():recvmsg() len=60
09649 08-10 09:33:44.265 210 313 INF SWMAN : nl_ipThrd():recvmsg() len=56
09650 08-10 09:33:44.265 210 313 INF SWMAN : NL event: 16 found; device idx:6 flag :0x11043
09651 08-10 09:33:44.265 210 313 INF SWMAN : Got a messge NEW_LINK message!!!
09652 08-10 09:33:44.265 685 2805 DEB LibWifi : wifi_wait_for_event(CTRL-EVENT-SCAN-RESULTS
Ready)
09653 08-10 09:33:44.265 685 2805 DEB LibWifi : wifi_wait_for_event()
09654 08-10 09:33:44.265 685 804 DEB EthernetStateMachine: Interface mlan0 LinkStateChanged: up
09655 08-10 09:33:44.398 685 3245 INF dhcp_utils: DHCP is started OK
09656 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 IP
address = 192.168.110.236
09657 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4
Gateway = 192.168.110.1
09658 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 DNS 1
= 192.168.110.122
09659 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 DNS 2
= 8.8.8.8
09660 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 Server
Address = 192.168.110.122
09661 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 Vendor
Info =
09662 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 Domain
Name = cucm.cotac.com
09663 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 TFTP 1
= 192.168.110.86
09664 08-10 09:33:44.398 685 3245 DEB NetUtils: android_net_utils_runDhcpCommon() Ipver:4 TFTP 2
=
09665 08-10 09:33:44.398 685 3245 DEB DhcpStateMachine: DHCP succeeded on mlan0 IPv4
09666 08-10 09:33:44.398 685 3245 DEB DhcpStateMachine: RunningState: 4
```

IP电话开始请求身份信任列表(ITL)和证书信任列表(CTL)文件。

```
10276 08-10 09:33:47.632 3329 3329 INF dgetfile: GETXXTP
[GT3329][src=CTLSEP00CCFC4ACCD2.tlv][dest=/data/data/cip.cfg/app_cip.tftp/CTLSEP00CCFC4ACCD2.tlv]
[serve]=[serv6]=[sec=0]
10277 08-10 09:33:47.632 3329 3329 INF dgetfile: In normal mode, call - > makeXXTPrequest (...)
10278 08-10 09:33:47.632 3329 3329 INF dgetfile: DTRACE [GT3329]makeXXTPrequest
10279 08-10 09:33:47.632 3329 3329 INF dgetfile: DTRACE [GT3329]parseEMCCConfig
10280 08-10 09:33:47.632 3329 3329 INF dgetfile: EMCC mode is false
10281 08-10 09:33:47.632 3329 3329 INF dgetfile: DTRACE [GT3329]parseDhcpInfoIntoTftpList
10282 08-10 09:33:47.632 3329 3329 INF dgetfile: Using WIRELESS interface for dhcp properties:
ok
10283 08-10 09:33:47.632 3329 3329 INF dgetfile: cisco_tftp_server2 unavailable:
10284 08-10 09:33:47.632 927 1611 ERR SQLiteLog: (1) table 'device' already exists
```

IP电话查找要注册到的活动CUCM服务器。

```
10361 08-10 09:33:47.640 1095 1540 INF ccservice-j: TelephonyManagerData: : fetchCallServerInfos
svrHndls[1]=1584903492 mode=CCM status=ACTIVE CallServerInfo=[192.168.110.86, CCM, ACTIVE]
10362 08-10 09:33:47.640 1095 1540 DEB ccservice: SIPCC-SIP_CC_PROV: 0x5e77b5bc,
CCAPI_DeviceInfo_getCallServerName: returned ipv4 192.168.110.84
10363 08-10 09:33:47.640 1095 1540 DEB ccservice: SIPCC-SIP_CC_PROV: 0x5e77b5bc,
```

```
CCAPI_DeviceInfo_getCallServerMode: returned 02
10364 08-10 09:33:47.640 1095 1540 DEB ccservice: SIPCC-SIP_CC_PROV: 0x5e77b5bc,
CCAPI_DeviceInfo_getCallServerStatus: returned 00
10365 08-10 09:33:47.640 1095 1540 INF ccservice-j: TelephonyManagerData: : fetchCallServerInfos
svrHndls[2]=1584903612 mode=NONCCM status=NONE CallServerInfo=[192.168.110.84, NONCCM, NONE]
```

故障排除

思科统一IP电话9971提供设备信息，其中显示网络状态、MAC地址、版本信息、统一通信、流统计、WLAN统计信息。浏览到IP电话的Web界面(<http://x.x.x.x>)，然后选择要检查的信息。

设备信息

 Device Information Cisco IP Phone CP-9971 (SEP1C17D3405C6B)	
Device Information	Active Network InterfaceWLAN
Network Setup	MAC AddressIC17D3405C6B
Ethernet Statistics	WLAN MAC Address8843E171EEC6
Ethernet Information	Host NameSEP1C17D3405C6B
Access	Phone DN89023675
Network	Versionslp9971.9-3-2-10
WLAN Setup	Key Expansion Module 1
Current AP	Key Expansion Module 2
WLAN Statistics	Key Expansion Module 3
Device Logs	Hardware Revision9.0
Console Logs(Console Logs)	Serial NumberFCH141788XX
Core Dumps(Core Dumps)	Model NumberCP-9971
Status Messages	Message WaitingNo
WLAN Site Survey	UDIphone
Debug Display	Cisco IP Phone 9971, Global
Streaming Statistics	CP-9971
Stream 1	FCH141788XX
Stream 2	Camera UDI
Stream 3	CP-CAM-G= ASK132601EF V01
Stream 4	Time7:00:24p
Stream 5	Time ZoneAmerica/New_York
Stream 6	Date05/10/13

网络设置

 Network Setup Cisco IP Phone CP-9971 (SEP1C17D3405C6B)		
Device Information	DHCP Server	10.116.167.193
Network Setup	BOOTP Server	No
Ethernet Statistics	MAC Address	8843E171EEC6
Ethernet Information	Host Name	SEP1C17D3405C6B
Access	Domain Name	cisco.com
Network	IP Address	10.116.167.197
WLAN Setup	Subnet Mask	255.255.255.240
Current AP	TFTP Server 1	10.35.48.106
WLAN Statistics	Default Router	10.116.167.193
Device Logs	DNS Server 1	64.102.6.247
Console Logs(Console Logs)	DNS Server 2	161.44.124.122
Core Dumps(Core Dumps)	DNS Server 3	
Status Messages	Operational VLAN Id	4095
WLAN Site Survey	Admin. VLAN Id	4095
Debug Display	CUCM Server1	gigantic-7 Active
Streaming Statistics	CUCM Server2	gigantic-8 Standby
Stream 1	CUCM Server3	
Stream 2	CUCM Server4	
Stream 3	CUCM Server5	
Stream 4	Information URL	https://10.35.48.106:8443/ccmclp/GetTelecasterHelpText.jsp
Stream 5	Directories URL	https://10.35.48.106:8443/ccmclp/xmldirectory.jsp
Stream 6	Messages URL	
	Services URL	https://10.35.48.106:8443/ccmclp/getservicesmenu.jsp
	DHCP Enabled	Yes
	DHCP Address Released	No
	Alternate TFTP	Yes
	Forwarding Delay	No
	Idle URL	
	Idle URL Time	0
	Proxy Server URL	
	Authentication URL	https://10.35.48.106:8443/ccmclp/authenticate.jsp

WLAN统计信息



WLAN Statistics

Cisco IP Phone CP-9971 (SEP1C17D3405C6B)

Device Information

Network Setup

Ethernet Statistics

Ethernet Information

Access

Network

WLAN Setup

Current AP

WLAN Statistics

Device Logs

Console Logs(Console Logs)

Core Dumps(Core Dumps)

Status Messages

WLAN Site Survey

Debug Display

Streaming Statistics

Stream 1

Stream 2

Stream 3

Stream 4

Stream 5

Stream 6

Transmit Frames:	00106929
Directed Frames Received:	00104213
Multicast Frames Received:	00000000
Broadcast Frames Received:	00002716
Receive Errors:	00000000
Receive No Buffers:	00000000
FCS Errors:	00000000
Duplicate Frames:	00000000
Fragments Received:	00000000
Beacons Received:	08996244
Association Rejected:	00000002
Association Timeouts:	00000000
Authentication Rejects:	00000000
Authentication Timeouts:	00000000
QOS Null Frames:	00001768
Background	
QOS Data Received:	00000000
Transmit Ok:	00000000
Transmit Error:	00000000
Direct Frames Transmitted:	00000000
Multicast Frames Transmitted:	00000000
Broadcast Frames Transmitted:	00000000
RTS Failed:	00000000
ACK Failed:	00000000
Retries:	00000000
Multiple Retries:	00000000
Retry Failures:	00000000
Transmit Timeouts:	00000000
Other Failures:	00000000
Success counter:	00000000
Max Retry Failure:	00000000

流统计



Streaming Statistics

Cisco IP Phone CP-9971 (SEP1C17D3405C6B)

Device Information	Remote Address	10.55.216.114/27520
Network Setup	Local Address	10.116.167.197/20640
Ethernet Statistics	Start Time	12:08:42p
<u>Ethernet Information</u>	Stream Status	Not Ready
<u>Access</u>	Host Name	SEP1C17D3405C6B
<u>Network</u>	Sender Packets	30250
WLAN Setup	Sender Octets	4840000
<u>Current AP</u>	Sender Codec	G.722
<u>WLAN Statistics</u>	Sender Reports Sent	111
Device Logs	Sender Report Time Sent	12:18:46p
<u>Console Logs(Console Logs)</u>	Rcvr Lost Packets	215
<u>Core Dumps(Core Dumps)</u>	Avg Jitter	11
<u>Status Messages</u>	Rcvr Codec	G.722
WLAN Site Survey	Rcvr Reports Sent	0
<u>Debug Display</u>	Rcvr Report Time Sent	00:00:00
Streaming Statistics	Rcvr Packets	30029
<u>Stream 1</u>	Rcvr Octets	5164988
<u>Stream 2</u>	MOS LQK	4.3828
<u>Stream 3</u>	Avg MOS LQK	4.2019
<u>Stream 4</u>	Min MOS LQK	3.4758
<u>Stream 5</u>	Max MOS LQK	4.5000
<u>Stream 6</u>	MOS LQK Version	0.95
	Cumulative Conceal Ratio	0.0090
	Interval Conceal Ratio	0.0066
	Max Conceal Ratio	0.0863
	Conceal Secs	210
	Severely Conceal Secs	15
	Latency	149
	Max Jitter	148
	Sender Size	20 ms
	Sender Reports Received	33
	Sender Report Time Received	12:18:45p
	Rcvr Size	20 ms
	Rcvr Discarded	1

设备记录

从IP电话的Web界面可获取控制台日志、核心转储和状态消息以进行故障排除。浏览到IP电话的Web界面(<http://x.x.x.x>)，然后在“设备日志”下选择必要的菜单项以查看此信息。



Console Logs

Cisco IP Phone CP-9971 (SEP1C17D3405C6B)

[Device Information](#)

[Network Setup](#)

[Ethernet Statistics](#)

[Ethernet Information](#)

[Access](#)

[Network](#)

[WLAN Setup](#)

[Current AP](#)

[WLAN Statistics](#)

[Device Logs](#)

[Console Logs\(Console Logs\)](#)

[Core Dumps\(Core Dumps\)](#)

[Status Messages](#)

[WLAN Site Survey](#)

[Debug Display](#)

[Streaming Statistics](#)

[Stream 1](#)

[Stream 2](#)

[Stream 3](#)

[Stream 4](#)

[Stream 5](#)

[Stream 6](#)

Current logs in /var/log:

[messages](#)
[messages.0](#)
[messages.1](#)
[messages.2](#)
[messages.3](#)
[messages.4](#)
[messages.5](#)
[messages.6](#)
[messages.7](#)

Archived logs in /cisco/logsave/hourly:

[hourly_20130510_230102.tar.gz](#)
[hourly_20130510_220101.tar.gz](#)
[hourly_20130510_210102.tar.gz](#)
[hourly_20130510_200101.tar.gz](#)
[hourly_20130510_190101.tar.gz](#)
[hourly_20130510_180101.tar.gz](#)
[hourly_20130510_170101.tar.gz](#)
[hourly_20130510_160102.tar.gz](#)
[hourly_20130510_150101.tar.gz](#)
[hourly_20130510_140101.tar.gz](#)
[hourly_20130510_130101.tar.gz](#)
[hourly_20130510_120102.tar.gz](#)
[hourly_20130510_110102.tar.gz](#)
[hourly_20130510_100102.tar.gz](#)
[hourly_20130510_090101.tar.gz](#)
[hourly_20130510_080101.tar.gz](#)
[hourly_20130510_070101.tar.gz](#)
[hourly_20130510_060101.tar.gz](#)
[hourly_20130510_050102.tar.gz](#)
[hourly_20130510_040101.tar.gz](#)
[hourly_20130510_030102.tar.gz](#)
[hourly_20130510_020101.tar.gz](#)
[hourly_20130510_010101.tar.gz](#)
[hourly_20130510_000101.tar.gz](#)

Archived logs in /cisco/logsave/lastimage:

[lastimage_20130510_191537.tar.gz](#)

WLAN信号指示器

自9.0(2)版本起，WLAN状态指示器将显示在“管理员设置”(Administrator Settings)中的所有菜单中。在初始版本中，WLAN信号指示器仅在WLAN Setup (WLAN设置) 菜单中可见。

02/04/2010 19:04 | 23675

Administrator Settings



23

Please Select a menu item

Network Setup



Security Setup



Status



Reset Settings



Exit