Monitoring Phone Systems

Cisco Unified SIP Phone status

This section describes how to use the following menus on the Cisco Unified SIP Phone 3905 to view model information, status messages, and network statistics for the phone:

- Model Information screen: Displays hardware and software information about the phone.
- Status menu: Provides access to screens that display the status messages, network statistics, and statistics for the current call.

You can use the information on these screens to monitor the operation of a phone and to assist with troubleshooting.

You can also obtain much of this information, and obtain other related information, remotely through the phone web page.

For more information about troubleshooting the Cisco Unified SIP Phone 3905, see Troubleshooting

Display Model Information Window

To display the Model Information screen, follow these steps.

Procedure

Step 1 Press **Applications**.

Step 2 Select **Phone Information**.
If the user is connected to a secure or authenticated server, a corresponding icon (lock or certificate) displays in the Phone Information Screen to the right of the server option. If the user is not connected to a secure or authenticated server, no icon appears.

Step 3 To exit the Model Information screen, press **Back**.

Related Topics

Cisco IP Phone Web Page, on page 12

Model Information Fields

The following table describes the Model Information Settings fields.

Table 1: Model Information Settings fields

Option	Description	To Change
Model Number	Model number of the phone.	Display only - cannot configure.
MAC Address	MAC address of the phone.	Display only - cannot configure.
Active Load ID	Version of firmware currently installed on the phone.	Display only - cannot configure.
Boot Load ID	Identifier of the factory-installed load running on the phone.	Display only - cannot configure.
IP Address	IPv4 address of the phone. This option is only displayed when the phone is configured in IPv4-only mode or in dual-stack mode.	See Configure Network Settings.
IPv6 Address	IPv6 address of the phone. This option is only displayed when the phone is configured in IPv6-only mode or in dual-stack mode.	See Set IPv6 Fields.
Active Server	IP address or name of the server to which the phone is registered.	Display only - cannot configure.
Stand-by Server	Name of the stand-by server for the phone. This option is displayed whether the phone is configured in IPv6-only mode, IPv4-only mode, or dual-stack mode.	Display only - cannot configure.

Display Status Menu

The Status menu includes theses options, which provide information about the phone and its operation:

- Network Statistics: Displays the Network Statistics screen, which shows Ethernet traffic statistics

- Call Statistics: Displays counters and statistics for the current call.

Procedure

Step 1 Press **Applications**.

Step 2 Select **Admin Settings** > **Status**.

Step 3 To exit the Status menu, press **Back**.

Display Status Messages Window

To display the Status Messages screen,

Procedure

Step 1 Press **Applications**.

Step 2 Select **Admin Settings** > **Status Messages**.
For information on the messages, see Status Messages, on page 3.

Step 3 To exit the Status Messages screen, press **Back**.

Related Topics

Phone Displays Error Messages

Status Messages

The Status Messages web page displays up to 30 of the most recent status messages that the phone has generated since it was last powered up. You can access the Status Messages web page even if the phone is not running. The following table describes the status messages. This table also includes possible explanations and actions to troubleshoot errors.

Table 2: Status Messages on the Cisco Unified SIP Phone 3905

Message	Description	Possible Explanation and Action
CFG file not found	The name-based and default configuration file was not found on the TFTP Server.	The configuration file for a phone is created when the phone is added to the Cisco Unified Communications Manager database. If the phone has not been added to the Cisco Unified Communications Manager database, the TFTP server generates a CFG File Not Found response. • Phone is not registered with Cisco Unified Communications Manager. You must manually add the phone to Cisco Unified Communications Manager if you are not allowing phones to auto-register. See Phone Addition Methods for details. • If you are using DHCP, verify that the DHCP server is pointing to the correct TFTP server. • If you are using static IP addresses, check the TFTP server configuration.
CFG TFTP Size Error	The configuration file is too large for the file system on the phone.	Power cycle the phone.
Checksum Error	Downloaded software file is corrupted.	Obtain a new copy of the phone firmware and place it in the TFTPPath directory. You should only copy files into this directory when the TFTP server software is shut down, otherwise the files may be corrupted.
DHCP timeout	DHCP server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the DHCP server and the phone. Verify the network connections. • DHCP server is down. Check the DHCP server configuration. • Errors persist. Consider assigning a static IP address.

Message	Description	Possible Explanation and Action
DNS timeout	DNS server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the DNS server and the phone. Verify the network connections. • DNS server is down. Check the DNS server configuration.
DNS unknown host	DNS could not resolve the name of the TFTP server or Cisco Unified Communications Manager.	• Verify that the host names of the TFTP server or Cisco Unified Communications Manager are configured properly in DNS. • Consider using IP addresses rather than host names.
Duplicate IP	Another device is using the IP address assigned to the phone.	• If the phone has a static IP address, verify that you have not assigned a duplicate IP address. • If you are using DHCP, check the DHCP server configuration.
File not found	The phone cannot locate, on the TFTP server, the phone load file that is specified in the phone configuration file.	From Cisco Unified Operating System Administration, make sure that the phone load file is on the TFTP server, and that the entry in the configuration file is correct.
IP address released	The phone has been configured to release its IP address.	The phone remains idle until it is power cycled or you reset the DHCP address.
Load ID incorrect	Load ID of the software file is of the wrong type.	Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Verify that the load ID is entered correctly.
Load rejected HC	The application that was downloaded is not compatible with the phone's hardware.	Occurs if you were attempting to install a version of software on this phone that did not support hardware changes on this newer phone. Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Re-enter the load displayed on the phone.

Message	Description	Possible Explanation and Action
No default router	DHCP or static configuration did not specify a default router.	• If the phone has a static IP address, verify that the default router has been configured. • If you are using DHCP, the DHCP server has not provided a default router. Check the DHCP server configuration.
No DNS server IP	A name was specified but DHCP or static IP configuration did not specify a DNS server address.	• If the phone has a static IP address, verify that the DNS server has been configured. • If you are using DHCP, the DHCP server has not provided a DNS server. Check the DHCP server configuration.
TFTP access error	TFTP server is pointing to a directory that does not exist.	• If you are using DHCP, verify that the DHCP server is pointing to the correct TFTP server. • If you are using static IP addresses, check the TFTP server configuration.
TFTP error	The phone does not recognize an error code provided by the TFTP server.	Contact the Cisco TAC.
TFTP file not found	The requested load file (.bin) was not found in the TFTPPath directory.	Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Verify that the TFTPPath directory contains a .bin file with this load ID as the name.
TFTP timeout	TFTP server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the TFTP server and the phone. Verify the network connections. • TFTP server is down. Check the TFTP server configuration.
Timed Out	Supplicant attempted 802.1X transaction but timed out to due the absence of an authenticator.	Authentication typically times out if 802.1X is not configured on the switch.

Message	Description	Possible Explanation and Action
Version error	The name of the phone load file is incorrect.	Make sure that the phone load file has the correct name.
XmlDefault.cnf.xml, or .cnf.xml corresponding to the phone device name	Name of the configuration file.	None. This is an informational message indicating the name of the configuration file for the phone.

Display Network Statistics Screen

The Network Statistics screen displays information about the phone and network performance.

Procedure

Step 1 Press **Applications**.

Step 2 Select **Admin Settings**.

Step 3 Select **Status**.

Step 4 Select **Network Statistics**. Network Statistics Fields, on page 7 describes the information that appears in this screen.

Step 5 To exit the Network Statistics screen, press **Back**.

Network Statistics Fields

The following table lists the Network Statistics Message information.

Table 3: Network Statistics Message Information for the Cisco Unified SIP Phone 3905

Item	Description
Rx Frames	Number of packets received by the phone
Tx Frames	Number of packets sent by the phone
Rx Broadcasts	Number of broadcast packets received by the phone

Item	Description
Restart Cause	Cause of the last reset of the phone - One of these values: • Hardware Reset (Power-on reset) • Software Reset (memory controller also reset) • Software Reset (memory controller not reset) • Watchdog Reset • Unknown
Port 1	Link state and connection of the PC port (for example, Auto 100 Mb Full-Duplex means that the PC port is in a link-up state and has auto-negotiated a full-duplex, 100-Mbps connection)
Port 2	Link state and connection of the Network port
DHCP state (IPv4 / IPv6)	• In IPv4 mode, displays only the DHCPv4 state, such as DHCP BOUND. • In IPv6 mode, displays only the DHCPv6 state, such as ROUTER ADVERTISE, (GOOD IP). • In dual-stack mode, displays both DHCPv4 and DHCPv6 state information. For more information, see the following DHCPv4 network statistics and DHCPv6 network statistics tables.

Table 4: DHCPv4 Network Statistics

DHCPv4 State	Description
CDP INIT	CDP is not bound or WLAN is not in service
DHCP BOUND	DHCPv4 is BOUND
DHCP DISABLED	DHCPv4 is disabled
DHCP INIT	DHCPv4 is INIT
DHCP INVALID	DHCPv4 is INVALID; this is initial state
DHCP RENEWING	DHCPv4 is RENEWING
DHCP REBINDING	DHCPv4 is REBINDING
DHCP REBOOT	DHCPv4 is init-reboot

DHCPv4 State	Description
DHCP REQUESTING	DHCPv4 is requesting
DHCP RESYNC	DHCPv4 is RESYNCH
DHCP WAITING COLDBOOT TIMEOUT	DHCPv4 is booting
DHCP UNRECOGNIZED	Unrecognized DHCPv4 state
DISABLED DUPLICATE IP	Duplicated IPv4 Address
DHCP TIMEOUT	DHCPv4 Timeout
IPV4 STACK TURNED OFF	Phone is in IPv6-only mode with IPv4 Stack turned off
ILLEGAL IPV4 STATE	Illegal IPv4 state and should not happen

Table 5: DHCPv6 Network Statistics

DHCPv6 State	Description
CDP INIT	CDP is initializing
DHCP6 BOUND	DHCPv6 is BOUND
DHCP6 DISABLED	DHCPv6 is DISABLED
DHCP6 RENEW	DHCPv6 is renewing
DHCP6 REBIND	DHCPv6 is rebinding
DHCP6 INIT	DHCPv6 is initializing
DHCP6 SOLICIT	DHCPv6 is soliciting
DHCP6 REQUEST	DHCPv6 is requesting
DHCP6 RELEASING	DHCPv6 is releasing
DHCP6 RELEASED	DHCPv6 is released
DHCP6 DISABLING	DHCPv6 is disabling
DHCP6 DECLINING	DHCPv6 is declining
DHCP6 DECLINED	DHCPv6 is declined

DHCPv6 State	Description
DHCP6 INFOREQ	DHCPv6 is INFOREQ
DHCP6 INFOREQ DONE	DHCPv6 is INFOREQ DONE
DHCP6 INVALID	DHCPv6 is INVALID; this is initial state
DISABLED DUPLICATE IPV6	DHCP6 is DISABLED, but DUPLICATE IPV6 DETECTED
DHCP6 DECLINED DUPLICATE IP	DHCP6 is DECLINED -- DUPLICATE IPV6 DETECTED
ROUTER ADVERTISE., (DUPLICATE IP)	Duplicated autoconfigured IPv6 address
DHCP6 WAITING COLDBOOT TIMEOUT	DHCPv6 is booting
DHCP6 TIMEOUT USING RESTORED VAL	DHCPv6 timeout, using the value saved in flash memory
DHCP6 TIMEOUT CANNOT RESTORE	DHCP6 timeout and there is no backup from flash memory
IPV6 STACK TURNED OFF	Phone is in IPv4-only mode with IPv6 Stack turned off
ROUTER ADVERTISE., (GOOD IP)	
ROUTER ADVERTISE., (BAD IP)	
UNRECOGNIZED MANAGED BY	IPv6 Address is not from router or DHCPv6 server
ILLEGAL IPV6 STATE	Illegal IPv6 state and should not happen

Display Call Statistics Window

You can access the Call Statistics screen on the phone to display counters, statistics, and voice-quality metrics of the most recent call.

Note You can also remotely view the call statistics information by using a web browser to access the Streaming Statistics web page. This web page contains additional RTCP statistics not available on the phone. For more information about remote monitoring, see Cisco IP Phone Web Page, on page 12.

A single call can have multiple voice streams, but data is captured for only the last voice stream. A voice stream is a packet stream between two endpoints. If one endpoint is put on hold, the voice stream stops even

though the call is still connected. When the call resumes, a new voice packet stream begins, and the new call data overwrites the former call data.

To display the Call Statistics screen for information about the latest voice stream, perform these steps:

Procedure

Step 1 Press **Applications**.

Step 2 Select **Admin Settings**.

Step 3 Select **Status**.

Step 4 Select **Call Statistics**.
Call Statistics Fields, on page 11 describes the information that appears in this window.

Step 5 To exit the Call Statistics window, press **Back**.

Call Statistics Fields

The following table contains the fields in the Call Statistics screen.

Table 6: Call Statistics Items for the Cisco Unified SIP Phone 3905

Item	Description
Rcvr Codec	Type of voice stream received (RTP streaming audio from codec): G.729, G.711 u-law, G.711 A-law.
Sender Codec	Type of voice stream transmitted (RTP streaming audio from codec): G.729, G.711 u-law, G.711 A-law.
Avg Jitter	Estimated average RTP packet jitter (dynamic delay that a packet encounters when going through the network) observed since the receiving voice stream was opened.
Max Jitter	Maximum jitter observed since the receiving voice stream was opened.
Voice Quality Metrics	
MOS LQK	Objective estimate of the Mean Opinion Score (MOS) for Listening Quality (LQK) that ranks audio quality from 5 (excellent) to 1 (bad). This score is based on audible-concealment events due to a frame loss in the preceding 8 seconds of the voice stream. **Note** The MOS LQK score can vary based on the type of codec that the Cisco Unified IP Phone uses.
Avg MOS LQK	Average MOS LQK score for the entire voice stream.
Min MOS LQK	Lowest MOS LQK score from the start of the voice stream.

Item	Description
Max MOS LQK	Baseline or highest MOS LQK score from the start of the voice stream. The following codecs provide the corresponding maximum MOS LQK scores under normal conditions with no frame loss: • G.711: 4.5 • G729A/AB: 3.7
MOS LQK Version	Version of the Cisco-proprietary algorithm used to calculate the MOS LQK scores.
Latency	Estimate of the network latency, expressed in milliseconds. Represents a running average of the round-trip delay, measured when RTCP receiver report blocks are received.

Cisco IP Phone Web Page

Each Cisco IP Phone has a web page from which you can view a variety of information about the phone, including:

- Device information: Displays device settings and related information for the phone.
- Network setup information: Displays network setup information and information about other phone settings.
- Network statistics: Displays hyperlinks that provide information about network traffic.
- Device logs: Displays hyperlinks that provide information that you can use for troubleshooting.
- Streaming statistic: Includes the Audio and Video statistics, Stream 1, Stream 2, Stream 3, Stream 4, Stream 5 and Stream 6 hyperlinks, which display a variety of streaming statistics.

This section describes the information that you can obtain from the phone web page. You can use this information to remotely monitor the operation of a phone and to assist with troubleshooting.

You can also obtain much of this information directly from a phone.

Related Topics

Display Model Information Window, on page 1
Control Phone Web Page Access

Access Web Page for Phone

To access the web page for a Cisco Unified IP Phone, perform these steps.

Note If you cannot access the web page, it may be disabled. See Control Phone Web Page Access for more information.

Procedure

Step 1 Obtain the IP address of the Cisco Unified IP Phone using one of these methods:

- Search for the phone in Cisco Unified Communications Manager by choosing **Device** > **Phone**. Phones registered with Cisco Unified Communications Manager display the IP address on the **Find and List Phones** window and at the top of the **Phone Configuration** window.
- On the Cisco Unified IP Phone, press **Applications**, choose **Network** > **IPv4**, and then scroll to the IP Address option.

Step 2 Open a web browser and enter the following URL, where *IP_address* is the IP address of the Cisco Unified IP Phone:
http://*IP_address*

Device Information

The Device Information area on a phone web page displays device settings and related information for the phone. The following table describes these items.

To display the Device Information area, access the web page for the phone as described in Access Web Page for Phone, on page 12, and click the **Device Information** hyperlink.

Table 7: Device Information Area Items

Item	Description
MAC Address	Media Access Control (MAC) address of the phone
Host Name	Unique, fixed name that is automatically assigned to the phone based on its MAC address
Phone DN	Directory number assigned to the phone
App Load ID	Identifier of the firmware running on the phone
Boot Load ID	Identifier of the factory-installed load running on the phone
Hardware Revision	Revision value of the phone hardware
Serial Number	Unique serial number of the phone

Item	Description
Model Number	Model number of the phone
Message Waiting	Indicates if there is a voice message waiting on the primary line for this phone
UDI	Displays the following Cisco Unique Device Identifier (UDI) information about the phone: • Device Type: Indicates hardware type. For example, phone displays for all phone models • Device Description: Displays the name of the phone associated with the indicated model type • Product Identifier: Specifies the phone model • Version Identifier: Represents the hardware version of the phone • Serial Number: Displays the unique serial number of the phone
Time	Time obtained from the Date/Time Group in Cisco Unified Communications Manager to which the phone belongs
Time Zone	Time zone obtained from the Date/Time Group in Cisco Unified Communications Manager to which the phone belongs
Date	Date obtained from the Date/Time Group in Cisco Unified Communications Manager to which the phone belongs

Network Setup Page

The Network Setup page on a phone web page displays network setup information and information about other phone settings. The following table describes these items.

You can view and set many of these items from the Network Setup Menu and the Phone Information Menu on the Cisco Unified IP Phone. For more information, see Cisco Unified SIP Phone Installation

To display the Network Setup area, access the web page for the phone as described in the Access Web Page for Phone, on page 12, and click the Network Configuration hyperlink.

Table 8: Network Setup Area items

Item	Description
DHCP Server	IP address of the Dynamic Host Configuration Protocol (DHCP) server from which the phone obtains its IP address.
MAC Address	Media Access Control (MAC) address of the phone.
Host Name	Host name that the DHCP server assigned to the phone.

Item	Description
Domain Name	Name of the Domain Name System (DNS) domain in which the phone resides.
IP Address	Internet Protocol (IP) address of the phone.
Subnet Mask	Subnet mask used by the phone.
TFTP Server 1	Primary Trivial File Transfer Protocol (TFTP) server used by the phone.
TFTP Server 2	Backup Trivial File Transfer Protocol (TFTP) server used by the phone.
Default Router 1	Default router used by the phone.
DNS Server 1–5	Primary Domain Name System (DNS) server (DNS Server 1) and optional backup DNS server (DNS Server 2 - 5) used by the phone.
Operational VLAN ID	Auxiliary Virtual Local Area Network (VLAN) configured on a Cisco Catalyst switch in which the phone is a member.
Admin VLAN ID	Auxiliary VLAN in which the phone is a member.
CallManager 1–5	Host names or IP addresses, in prioritized order, of the Cisco Unified Communications Manager servers with which the phone can register. An item can also show the IP address of an SRST router that is capable of providing limited Cisco Unified Communications Manager functionality, if such a router is available. For an available server, an item will show the Cisco Unified Communications Manager server IP address and one of the following states: • Active: Cisco Unified Communications Manager server from which the phone is currently receiving call-processing services. • Standby: Cisco Unified Communications Manager server to which the phone switches if the current server becomes unavailable. • Blank: No current connection to this Cisco Unified Communications Manager server. An item may also include the Survivable Remote Site Telephony (SRST) designation, which identifies an SRST router capable of providing Cisco Unified Communications Manager functionality with a limited feature set. This router assumes control of call processing if all other Cisco Unified Communications Manager servers become unreachable. The SRST Cisco Unified Communications Manager always appears last in the list of servers, even if it is active. You configure the SRST router address in the Device Pool section in Cisco Unified Communications Manager Configuration window.
DHCP Enabled	Indicates if DHCP is being used by the phone.
DHCP Address Released	Indicates the setting of the DHCP Address Released option on the phone's Network Configuration menu.

Item	Description
Alternate TFTP	Indicates if the phone is using an alternative TFTP server.
SW Port Setup Auto Negotiate	Indicates if switch port is set to auto negotiate.
PC Port Setup Auto Negotiate	Indicates if PC port is set to auto negotiate.
User Locale	User locale associated with the phone user. Identifies a set of detailed information to support users, including language, font, date and time formatting, and alphanumeric keyboard text information.
Network Locale	Network locale associated with the phone user. Identifies a set of detailed information to support the phone in a specific location, including definitions of the tones and cadences used by the phone.
User Locale Version	Version of the user locale loaded on the phone.
Network Locale Version	Version of the network locale loaded on the phone.
PC Port Disabled	Indicates if the PC port on the phone is enabled or disabled.
Speaker Enabled	Indicates if the speakerphone is enabled on the phone.
GARP Enabled	Indicates if the phone learns MAC addresses from Gratuitous ARP responses.
Voice VLAN Enabled	Indicates if the phone allows a device attached to the PC port to access the Voice VLAN.
DSCP for Call Control	DSCP IP classification for call control signaling.
DSCP for Configuration	DSCP IP classification for any phone configuration transfer.
DSCP for Services	DSCP IP classification for phone-based services.
Web Access Enabled	Indicates if web access is enabled (Yes) or disabled (No) for the phone.
Span to PC Port	Indicates if the phone forwards packets transmitted and received on the network port to the access port.
PC VLAN	VLAN used to identify and remove 802.1P/Q tags from packets sent to the PC.

Item	Description
CDP: PC Port	Indicates if CDP is supported on the PC port (default is enabled). Enable CDP on the PC port when Cisco VT Advantage/Unified Video Advantage (CVTA) is connected to the PC port. CVTA does not work without CDP interaction with the phone. When CDP is disabled in Cisco Unified Communications Manager, a warning is displayed, indicating that disabling CDP on the PC port prevents CVTA from working. The current PC and switch port CDP values are shown on the Settings menu.
CDP: SW Port	Indicates if CDP is supported on the switch port (default is enabled). Enable CDP on the switch port for VLAN assignment for the phone, power negotiation, QoS management, and 802.1x security. Enable CDP on the switch port when the phone is connected to a Cisco switch. When CDP is disabled in Cisco Unified Communications Manager, a warning is presented, indicating that CDP should be disabled on the switch port only if the phone is connected to a non-Cisco switch. The current PC and switch port CDP values are shown on the Settings menu.
IP Addressing Mode	Type of addressing - IPv4 only, IPv6 only, or dual stack
IP Preference Mode Control	
IPv6 Auto Configuration	
DHCPv6	IP address of the IPv6 DHCP server from which the phone obtains its IPv6 address.
IPv6 Address	IPv6 address of the phone.
IPv6 Prefix Length	Current prefix length for the subnet.
IPv6 Default Router 1	Default IPv6 router used by the phone.
IPv6 DNS Server 1	Primary IPv6 DNS server used by the phone.
IPv6 Alternate TFTP	Indicates if the phone is using an alternative IPv6 TFTP server.
IPv6 TFTP Server 1	Primary IPv6 Trivial File Transfer Protocol (TFTP) server used by the phone.
IPv6 TFTP Server 2	Secondary IPv6 Trivial File Transfer Protocol (TFTP) server used by the phone.
IPv6 Address Released	

Network Statistics

The following table lists the Network Statistics information.

Table 9: Network Statistics information

Item	Description
Rx Frames	Number of packets received by the phone
Tx Frames	Number of packets sent by the phone
Rx Broadcasts	Number of broadcast packets received by the phone
Restart Cause	Cause of the last reset of the phone - One of these values: • Hardware Reset (Power-on reset) • Software Reset (memory controller also reset) • Software Reset (memory controller not reset) • Watchdog Reset • Unknown
Port 1	Link state and connection of the Network port
Port 2	Link state and connection of the PC port (for example, Auto 100 Mb Full-Duplex means that the PC port is in a link-up state and has auto-negotiated a full-duplex, 100-Mbps connection)
DHCPv4 State DHCPv6 State	• In IPv4 mode, displays only the DHCPv4 state, such as DHCP BOUND. • In IPv6 mode, displays only the DHCPv6 state, such as ROUTER ADVERTISE, (GOOD IP). • In dual-stack mode, displays both DHCPv4 and DHCPv6 state information. For more information, see the following DHCPv4 network statistics and DHCPv6 network statistics tables.

Table 10: DHCPv4 network statistics

DHCPv4 State	Description
CDP INIT	CDP is not bound or WLAN is not in service
DHCP BOUND	DHCPv4 is BOUND

DHCPv4 State	Description
DHCP DISABLED	DHCPv4 is disabled
DHCP INIT	DHCPv4 is INIT
DHCP INVALID	DHCPv4 is INVALID; this is initial state
DHCP RENEWING	DHCPv4 is RENEWING
DHCP REBINDING	DHCPv4 is REBINDING
DHCP REBOOT	DHCPv4 is init-reboot
DHCP REQUESTING	DHCPv4 is requesting
DHCP RESYNC	DHCPv4 is RESYNCH
DHCP WAITING COLDBOOT TIMEOUT	DHCPv4 is booting
DHCP UNRECOGNIZED	Unrecognized DHCPv4 state
DISABLED DUPLICATE IP	Duplicated IPv4 Address
DHCP TIMEOUT	DHCPv4 Timeout
IPV4 STACK TURNED OFF	Phone is in IPv6-only mode with IPv4 Stack turned off
ILLEGAL IPV4 STATE	Illegal IPv4 state and should not happen

Ethernet Information Web Page

The following table describes the contents of the Ethernet Information web page.

Table 11: Ethernet Information Items

Item	Description
Tx Frames	Total number of packets that the phone transmits.
Tx broadcast	Total number of broadcast packets that the phone transmits.
Tx multicast	Total number of multicast packets that the phone transmits.
Tx unicast	Total number of unicast packets that the phone transmits.
Rx Frames	Total number of packets received by the phone.

Item	Description
Rx broadcast	Total number of broadcast packets that the phone receives..
Rx multicast	Total number of multicast packets that the phone receives.
Rx unicast	Total number of unicast packets that the phone receives.
Rx PacketNoDes	Total number of shed packets that the no Direct Memory Access (DMA) descriptor causes.

Network Information Fields

The following table describes the information in the Network Area web page.

Table 12: Network Items on the Cisco Unified SIP Phone 3905

Item	Description
Tx Frames	Total number of packets transmitted by the phone
Tx broadcast	Total number of broadcast packets transmitted by the phone
Tx unicast	Total number of unicast packets transmitted by the phone
Rx Frames	Total number of packets received by the phone
Rx broadcast	Total number of broadcast packets received by the phone
Rx unicast	Total number of unicast packets received by the phone
Neighbor Device ID	Identifier of a device connected to this port discovered by CDP protocol or LLDP
Neighbor IP Address	IP address of the neighbor device discovered by CDP protocol
Neighbor Port	Neighbor device port to which the phone is connected discovered by CDP protocol
LLDP AgeoutsTotal	Total number of LLDP frames that have been time out in cache
LLDP FramesDiscardedTotal	Total number of LLDP frames that are discarded when any of the mandatory TLVs is missing or out of order or contains out of range string length
LLDP FramesInErrorsTotal	Total number of LLDP frames that received with one or more detectable errors
LLDP FramesInTotal	Total number of LLDP frames received on the phone
LLDP TLVDiscardedTotal	Total number of LLDP TLVs that are discarded

Item	Description
LLDP TLVUnrecognizedTotal	Total number of LLDP TLVs that are not recognized on the phone
Restart Cause	Reason for the last restart
Port 1-2	Speed and duplex information
IPv4	IPv4 Address
IPv6	IPv6 Address

Device Logs

The following device logs hyperlinks on a phone web page provide information you can use to help monitor and troubleshoot the phone.

- Console Logs: Includes hyperlinks to individual log files. The console log files include debug and error messages received on the phone.
- Core Dumps: Includes hyperlinks to individual dump files. The core dump files include data from a phone crash.
- Status Messages: Displays up to the 30 most recent status messages that the phone has generated since it was last powered up. You can also see this information from the Status Messages screen on the Web page of the phone. The following table describes the status messages that may be displayed.
- Debug Display: Displays debug messages that might be useful to the Cisco Technical Assistance Center (TAC) if you require assistance with troubleshooting.

The Status Messages web page displays up to 30 of the most recent status messages that the phone has generated since it was last powered up. You can access the Status Messages web page even if the phone is not running. The following table describes the status messages. This table also includes possible explanations and actions to troubleshoot errors.

Table 13: Status Messages

Message	Description	Possible explanation and action
CFG file not found	The name-based and default configuration file was not found on the TFTP Server.	The configuration file for a phone is created when the phone is added to the Cisco Unified Communications Manager database. If the phone has not been added to the Cisco Unified Communications Manager database, the TFTP server generates a `CFG File Not Found` response. • Phone is not registered with Cisco Unified Communications Manager. You must manually add the phone to Cisco Unified Communications Manager if you are not allowing phones to autoregister. See Phone Addition Methods for details. • If you are using DHCP, verify that the DHCP server is pointing to the correct TFTP server. • If you are using static IP addresses, check the TFTP server configuration.
CFG TFTP Size Error	The configuration file is too large for the file system on the phone.	Power cycle the phone.
Checksum Error	Downloaded software file is corrupted.	Obtain a new copy of the phone firmware and place it in the TFTPPath directory. You should only copy files into this directory when the TFTP server software is shut down, otherwise the files may be corrupted.
DHCP timeout	DHCP server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the DHCP server and the phone. Verify the network connections. • DHCP server is down. Check the DHCP server configuration. • Errors persist. Consider assigning a static IP address.

Message	Description	Possible explanation and action
DNS timeout	DNS server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the DNS server and the phone. Verify the network connections. • DNS server is down. Check the DNS server configuration.
DNS unknown host	DNS could not resolve the name of the TFTP server or Cisco Unified Communications Manager.	• Verify that the host names of the TFTP server or Cisco Unified Communications Manager are configured properly in DNS. • Consider using IP addresses rather than host names.
Duplicate IP	Another device is using the IP address assigned to the phone.	• If the phone has a static IP address, verify that you have not assigned a duplicate IP address. • If you are using DHCP, check the DHCP server configuration.
File not found	The phone cannot locate, on the TFTP server, the phone load file that is specified in the phone configuration file.	From Cisco Unified Operating System Administration, make sure that the phone load file is on the TFTP server, and that the entry in the configuration file is correct.
IP address released	The phone has been configured to release its IP address.	The phone remains idle until it is power cycled or you reset the DHCP address.
Load ID incorrect	Load ID of the software file is of the wrong type.	Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Verify that the load ID is entered correctly.
Load rejected HC	The application that was downloaded is not compatible with the phone's hardware.	Occurs if you were attempting to install a version of software on this phone that did not support hardware changes on this newer phone. Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Re-enter the load displayed on the phone.

Message	Description	Possible explanation and action
No default router	DHCP or static configuration did not specify a default router.	• If the phone has a static IP address, verify that the default router has been configured. • If you are using DHCP, the DHCP server has not provided a default router. Check the DHCP server configuration.
No DNS server IP	A name was specified but DHCP or static IP configuration did not specify a DNS server address.	• If the phone has a static IP address, verify that the DNS server has been configured. • If you are using DHCP, the DHCP server has not provided a DNS server. Check the DHCP server configuration.
TFTP access error	TFTP server is pointing to a directory that does not exist.	• If you are using DHCP, verify that the DHCP server is pointing to the correct TFTP server. • If you are using static IP addresses, check the TFTP server configuration.
TFTP error	The phone does not recognize an error code provided by the TFTP server.	Contact the Cisco TAC.
TFTP file not found	The requested load file (.bin) was not found in the TFTPPath directory.	Check the load ID assigned to the phone (from Cisco Unified Communications Manager, choose **Device** > **Phone**). Verify that the TFTPPath directory contains a .bin file with this load ID as the name.
TFTP timeout	TFTP server did not respond.	• Network is busy. The errors should resolve themselves when the network load reduces. • No network connectivity between the TFTP server and the phone. Verify the network connections. • TFTP server is down. Check the TFTP server configuration.
Timed Out	Supplicant attempted 802.1X transaction but timed out to due the absence of an authenticator.	Authentication typically times out if 802.1X is not configured on the switch.

Message	Description	Possible explanation and action
Version error	The name of the phone load file is incorrect.	Make sure that the phone load file has the correct name.
XmlDefault.cnf.xml, or .cnf.xml corresponding to the phone device name	Name of the configuration file.	None. This is an informational message indicating the name of the configuration file for the phone.

Streaming Statistics

A Cisco Unified IP Phone can stream information to and from up to three devices simultaneously. A phone streams information when it is on a a call or running a service that sends or receives audio or data.

The streaming statistics areas on a phone web page provide information about the streams. Cisco Unified SIP Phone 3905 use only Stream 1.

To display a Streaming Statistics area, access the web page for the phone as described in Access Web Page for Phone, on page 12 and click the Stream 1 hyperlink.

Table 14: Streaming Statistics Area Items

Item	Description
Remote Address	IP address and UDP port of the destination of the stream.
Local Address	IP address and UDP port of the phone.
Start Time	Internal time stamp indicating when Cisco Unified Communications Manager requested that the phone start transmitting packets.
Stream Status	Indication of whether streaming is active or not.
Host Name	Unique, fixed name that is automatically assigned to the phone based on its MAC address.
Sender Packets	Total number of RTP data packets transmitted by the phone since starting this connection. The value is 0 if the connection is set to receive only mode.
Sender Octets	Total number of payload octets transmitted in RTP data packets by the phone since starting this connection. The value is 0 if the connection is set to receive only mode.
Sender Codec	Type of audio encoding used for the transmitted stream.
Sender Reports Sent	Number of times the RTCP Sender Report have been sent. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.

Item	Description
Sender Report Time Sent	Internal time stamp indication when the last RTCP Sender Report was sent. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Rcvr Lost Packets	Total number of RTP data packets that have been lost since starting receiving data on this connection. Defined as the number of expected packets less the number of packets actually received, where the number of received packets includes any that are late or duplicate. The value displays as 0 if the connection was set to send-only mode.
Avg Jitter	Estimate of mean deviation of the RTP data packet inter-arrival time, measured in milliseconds. The value displays as 0 if the connection was set to send-only mode.
Rcvr Codec	Type of audio encoding used for the received stream.
Rcvr Reports Sent	Number of times the RTCP Receiver Reports have been sent. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Rcvr Report Time Sent	Internal time stamp indication when a RTCP Receiver Report was sent. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Rcvr Packets	Total number of RTP data packets received by the phone since starting receiving data on this connection. Includes packets received from different sources if this is a multicast call. The value displays as 0 if the connection was set to send-only mode.
Rcvr Octets	Total number of payload octets received in RTP data packets by the device since starting reception on the connection. Includes packets received from different sources if this is a multicast call. The value displays as 0 if the connection was set to send-only mode.
MOS LQK	Objective estimate of the Mean Opinion Score (MOS) for Listening Quality (LQK) that ranks audio quality from 5 (excellent) to 1 (bad). This score is based on audible-concealment events due to a frame loss in the preceding 8 seconds of the voice stream. **Note** The MOS LQK score can vary based on the type of codec that the Cisco Unified IP Phone uses.
Avg MOS LQK	Average MOS LQK score for the entire voice stream.
Min MOS LQK	Lowest MOS LQK score from the start of the voice stream.

Item	Description
Max MOS LQK	Baseline or highest MOS LQK score from the start of the voice stream. The following codecs provide the corresponding maximum MOS LQK scores under normal conditions with no frame loss: • G.711: 4.5 • G729A/AB: 3.7
MOS LQK Version	Version of the Cisco-proprietary algorithm used to calculate the MOS LQK scores.
Cumulative Conceal Ratio	Total number of concealment frames divided by total number of speech frames received from start of the voice stream.
Interval Conceal Ratio	Ratio of concealment frames to speech frames in preceding 3-second interval of active speech. If using voice activity detection (VAD), a longer interval might be required to accumulate 3 seconds of active speech.
Max Conceal Ratio	Highest interval concealment ratio from start of the voice stream.
Conceal Secs	Number of seconds that have concealment events (lost frames) from the start of the voice stream (includes severely concealed seconds).
Severely Conceal Secs	Number of seconds that have more than 5 percent concealment events (lost frames) from the start of the voice stream.
Latency	Estimate of the network latency, expressed in milliseconds. Represents a running average of the round-trip delay, measured when RTCP receiver report blocks are received. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Max Jitter	Maximum value of instantaneous jitter, in milliseconds.
Sender Size	RTP packet size, in milliseconds, for the transmitted stream.
Sender Reports Received	Number of times RTCP Sender Reports have been received. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Sender Report Time Received	Last time at which an RTCP Sender Report was received. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Rcvr Size	RTP packet size, in milliseconds, for the received stream.
Rcvr Discarded	RTP packets received from network but discarded from jitter buffers.

Item	Description
Rcvr Reports Received	Number of times RTCP Receiver Reports have been received. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.
Rcvr Report Time Received	Last time at which an RTCP Receiver Report was received. When the RTCP Control Protocol is disabled, no data generates for this field and thus displays as 0.