CHAPTER 9

Monitoring the Cisco Unified Wireless IP Phone Remotely

This chapter describes the methods for monitoring the Cisco Unified Wireless IP Phone 7925G by using a web page. It contains the following sections:

- Accessing the Web Page for a Phone, page 9-1
- Summary Information, page 9-2
- Network Configuration Information, page 9-3
- Device Information, page 9-6
- Wireless LAN Statistics, page 9-7
- Wireless LAN Statistics, page 9-7
- Stream Statistics, page 9-10

For information about using these web pages, see Chapter 4, "Using the Cisco Unified Wireless IP Phone 7925G Web Pages." For more information about troubleshooting the Cisco Unified IP Phone, Chapter 10, "Troubleshooting the Cisco Unified Wireless IP Phone 7925G."

Accessing the Web Page for a Phone

To access the web page for a Cisco Unified Wireless IP Phone 7925G, perform the following steps.

Procedure

Step 1 Obtain the IP address of the Cisco Unified Wireless IP Phone 7925G using one of these methods:

- Search for the phone in Cisco Unified Communications Manager by choosing **Devices > Phones**. Phones registered with Cisco Unified Communications Manager display the IP address on the Find and List Phones web page and at the top of the Phone Configuration web page.
- On the Cisco Unified Wireless IP Phone 7925G, press **SETTINGS > Device Information> Network** 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:

https://<*IP_address*>

Note When the Security Alert dialog box displays a notice to accept the Trust Certificate, click **Yes** or **Always** to accept the application.

Step 3 Log in to the web pages with username: **admin** and enter the password: **Cisco** for the phone web pages.

The web pages for a Cisco Unified Wireless IP Phone 7925G includes these items for monitoring the phone:

- Wireless LAN Statistics—Provides information about the wireless LAN configuration.For more information, see the "Wireless LAN Statistics" section on page 9-7.
- Network Statistics—Provides information about network traffic. For more information, see the "Wireless LAN Statistics" section on page 9-7.
- Stream Statistics—Provides information about voice quality items. For more information, see the "Stream Statistics" section on page 9-10.

Summary Information

The Summary Information area on the phone's web page displays network configuration information and information about other phone settings. Table 9-1 describes these items.

To display the Summary Information page, access the web page for the phone as described in the "Accessing the Web Page for a Phone" section on page 9-1, and the Home: Summary page displays.

Table 9-1 Home: Summary Items

Item	Description
Phone DN	Directory number assigned to this phone
Wireless Information	
Active Network Profile	Name of the profile that the phone is currently using
SSID	SSID that the phone is currently using
Access Point	Name of the access point to which the phone is associated
MAC Address	Media Access Control (MAC) address of the phone
Network Information	
IP Address	Internet Protocol (IP) address of the phone
Subnet Mask	Subnet mask used by the phone
Default Router	IP address for the default gateway that the phone is using
TFTP Server	IP address for the Primary Trivial File Transfer Protocol (TFTP) server that the phone is using
Communications Manager Information	
Active Communications Manager	IP address for the Cisco Unified Communications Manager server to which the phone is registered
Phone Directory Number	Primary directory number for the phone

Network Configuration Information

The Network Setup area on the phone's web page displays network configuration information and information about other phone settings. Table 9-2 describes these items.

To display the Network Information page, access the web page for the phone as described in the "Accessing the Web Page for a Phone" section on page 9-1, and then click the **Network** hyperlink under the Information section.

Table 9-2 Network Information Items

Item	Description
IP Information	
DHCP Server	IP address of the Dynamic Host Configuration Protocol (DHCP) server from which the phone obtains its IP address.
BootP Server	Not used.
MAC Address	Media Access Control (MAC) address of the phone.
Host Name	Unique, fixed name that is automatically assigned to the phone based on the MAC address.
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.
Default Router 1	IP address for the default gateway used by the phone.
DNS Server 1	Primary Domain Name System (DNS) server used by the phone.
DNS Server 2	Backup DNS server used by the phone.
TFTP Server 1	Primary Trivial File Transfer Protocol (TFTP) server used by the phone.
Alternate TFTP Server Enabled	Displays **Yes** if enabled and **No** if disabled.
TFTP Server 2	Secondary Trivial File Transfer Protocol (TFTP) server used by the phone.

Table 9-2 Network Information Items (continued)

Item	Description
Communications Manager Information	
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. Each available server shows 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.

Table 9-2 Network Information Items (continued)

Item	Description
SRST Information	
SRST Reference IP	The IP Address for 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. An item will include a shield icon if the phone has an authenticated connection to the Cisco Unified Communications Manager server. It will display a padlock icon if the phone has an authenticated connection to the Cisco Unified Communications Manager server.
SRST Reference Port	Port number for TCP connection.
SRST Reference Option	Identifies the default gateway or disables SRST.
Connection Monitor Duration	The amount of time that the IP phone monitors its connection to Cisco Unified Communications Manager before it unregisters from SRST and re-registers to Cisco Unified Communications Manager.
MLPP Information	
MLPP Domain ID	Identifies the MLPP Domain that is assigned to the phone.
MLPP Indication Status	Indicates whether the phone uses special precedence rings and tones.
Preemption	Identifies call preemption capability set for this phone. Forceful—The phone allows higher priority calls to preempt lower priority calls. Disabled—The phone does not preempt lower priority calls with higher priority calls. Default—The phone uses the device pool setting.
QoS Information	
DSCP for Call Control	Differentiated Services Code Point (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 service.
Security Information	
GARP Enabled	Indicates whether the phone learns MAC addresses from Gratuitous ARP responses.
Web Access Enabled	Indicates whether access to phone web pages is enabled (Yes) or disabled (No).
Settings Enabled	Indicates whether the Settings menu on the phone is accessible.
Security Mode	Indicates the security mode assigned to the phone
URL Information	
Information URL	URL of the help text that appears on the phone.

Table 9-2 Network Information Items (continued)

Item	Description
Directories URL	URL of the server from which the phone obtains directory information.
Messages URL	URL of the server from which the phone obtains message services.
Services URL	URL of the server from which the phone obtains Cisco Unified IP Phone services.
Idle URL	Not used.
Idle URL Timer	Not used.
Proxy Server URL	Not used.
Authentication URL	URL that the phone uses to validate requests made to the phone web server.
Locale Information	
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.
User Locale Version	Version of the user locale loaded on the phone.
User Locale Char Set	Character set that the phone uses for the user locale.
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.
Network Locale Version	Version of the network locale loaded on the phone.

Device Information

The Device Information web page displays device settings and related information for the phone. Table 9-3 describes these items.

To display the Device Information area, access the web page for the phone as described in the "Accessing the Web Page for a Phone" section on page 9-1, and then click the **Device** hyperlink under the information area.

Table 9-3 Device Information Area Items

Item	Description
MAC Address	Media Access Control (MAC) address of the phone
Host Name	Host name that the DHCP server assigned to the phone
Directory Number	Directory number assigned to the phone
System Load ID	Identifier of the firmware running on the phone
Version	Version of the phone hardware
Serial Number	Serial number of the phone
Model Number	Model number of the phone

Table 9-3 Device Information Area Items (continued)

Item	Description
Message Waiting	Indicates if there is a voice message waiting on any line for this phone
UDI	Displays the following Cisco Unique Device Identifier (UDI) information about the phone: • Device Type—Indicates hardware type such as phone • Device Description—Displays the name of the phone associated with the model type. • Product Identifier—Specifies the phone model • Version Identifier—Represents the hardware version of the phone • Serial Number—Displays the phone's unique serial number
Time	Time from the Date/Time Group in Cisco Unified Communications Manager
TimeZone	Time zone obtained from the Date/Time Group in Cisco Unified Communications Manager
Date	Date obtained from the Date/Time Group in Cisco Unified Communications Manager
Hardware Revision	Version of the phone hardware
WLAN Regulatory Domain	Identifier for the wireless regulatory region in which this phone must operate
USB Vendor/Product ID	Unique code that identifies the phone as a Cisco Systems product
USB RNDIS Device Address	Manufacturer-assigned unique MAC address for the USB Remote Network Driver Interface Specification (RNDIS) for the phone
USB RNDIS Host Address	Manufacturer-assigned unique MAC address for the USB RNDIS for the host

Wireless LAN Statistics

The Wireless LAN Statistics section provides information about packets that have been received and transmitted by the phone. Table 9-4 describes the statistics.

Table 9-4 Wireless LAN Statistics Items

Item	Description
Rx Statistics	
Rx OK Frames	Number of packets received successfully
Rx Error Frames	Number of packets received with errors
Rx Unicast Frames	Number of packets received that are unicast traffic
Rx Multicast Frames	Number of packets received that are multicast traffic

Table 9-4 Wireless LAN Statistics Items (continued)

Item	Description
Rx Broadcast Frames	Number of packets received that are broadcast traffic
Rx FCS Frames	Number of packets received frames checksum error
Rx Beacons	Number of received beacons
Association Rejects	Number of rejected association attempts
Association Timeouts	Number of failed association attempts due to timeout
Authentication Rejects	Number of authentication attempts that the AP rejected
Authentication Timeouts	Number of failed authentication attempts due to timeout
Tx Statistics (Best Effort)	
Tx OK Frames	Number of frames transmitted with successfully
Tx Error Frames	Number of frames transmitted with errors
Tx Unicast Frames	Number of frames transmitted that are unicast traffic
Tx Multicast Frames	Number of frames transmitted that are multicast traffic
Tx Broadcast Frames	Number of frames transmitted that are broadcast traffic
RTS Fail Counter	Number of RTS transmissions that did not result in transmitted frames
ACK Fail Counter	Number of failed acknowledgements by the AP
Retries Counter	Number of frames that were retransmitted
Multiple Retries Counter	Number of frames for which retransmission was attempted
Failed Retries Counter	Number of frames without acknowledgements
Tx Timeout Counter	Number of frames that could not be retransmitted due to timeout
Other Fail Counter	Number of frames with failed transmission due to other causes
Success Counter	Number of frames transmitted successfully
Max Retry Limit Counter	Number of times the maximum retry limit was reached
Tx Statistics (Voice)	
Tx OK Frames	Number of frames transmitted with successfully
Tx Error Frames	Number of frames transmitted with errors
Tx Unicast Frames	Number of frames transmitted that are unicast traffic
Tx Multicast Frames	Number of frames transmitted that are multicast traffic
Tx Broadcast Frames	Number of frames transmitted that are broadcast traffic
RTS Fail Counter	Number of RTS transmissions that did not result in transmitted frames
ACK Fail Counter	Number of failed acknowledgements by the AP
Retries Counter	Number of frames that were retransmitted
Multiple Retries Counter	Number of frames for which retransmission was attempted
Failed Retries Counter	Number of frames without acknowledgements
Tx Timeout Counter	Number of frames that could not be retransmitted due to timeout
Other Fail Counter	Number of frames with failed transmission due to other causes

Table 9-4 Wireless LAN Statistics Items (continued)

Item	Description
Success Counter	Number of frames transmitted successfully
Max Retry Limit Counter	Number of times the maximum retry limit was reached

Network Statistics

The Network Statistics section provides information about network traffic. Table 9-5 describes the IP, TCP, and UDP traffic.

Table 9-5 Network Statistics Screen Items

Item	Description
IP Statistics	
IpInReceives	Number of input datagrams received from interfaces including those received in error
IpInHdrErrors	Number of input datagrams discarded due to errors in IP headers
IpInAddrErrors	Number of input datagrams discarded because IP address in header destination field was not valid
IpInForwDatagrams	Number of input datagrams that were forwarded to another IP destination
IpInUnknownProtos	Number of datagrams discarded because of an unknown or unsupported protocol
IpInDiscards	Number of input datagrams discarded for reasons other than errors, such as lack of buffer space
IpInDelivers	Number of input datagrams successfully delivered to IP user-protocols
IpInOutRequests	Number of IP datagrams supplied to IP in request for transmission; does not include IPForwDatagram count
IpInOutDiscards	Number of output datagrams discarded for reasons other than errors, such as lack of buffer space
IpInOutNoRoutes	Number of output datagrams discarded because no route found to transmit them to destination
IpInReasmTimeout	Maximum number of seconds which received fragments are held while awaiting reassembly
IpReasmReqds	Number of IP fragments received that need to be reassembled
IpInReasmOKs	Number of IP fragments successfully reassembled
IpInReasmFails	Number of IP fragment reassembly failures
IpInFragOK	Number of IP datagrams that have been successfully fragmented
IpInFragFails	Number of IP datagrams that were discarded because they could not be fragmented
IpInFragCreates	Number of IP datagram fragments generated

Table 9-5 Network Statistics Screen Items (continued)

Item	Description
TCP Statistics	
TcpRtoAlgorithm	Determines timeout value used for retransmitting unacknowledged octets
TcpRtoMin	Minimum value for retransmission timeout in milliseconds
TcpRtoMax	Maximum value for retransmission timeout in milliseconds
TcpMaxConn	Number limit for total TCP connections that are supported; if dynamic, displays value of -1
TcpActiveOpens	Number of times TCP connections made a transition to SYN-SENT state from CLOSED state
TcpPassiveOpens	Number of times TCP connections made a transition to SYN-RCVD state from LISTEN state
TcpAttemptFails	Number of times TCP connections made a transition to CLOSED state from SYN-SENT or SYN-RCVD state, plus number of times transitioned to LISTEN state from SYN-RCVD state
TcpEstablishResets	Number of times TCP connections made a transition to CLOSED state from either ESTABLISHED or CLOSE-WAIT state
TcpCurrEstab	Number of times TCP connections for which the current state is either ESTABLISHED or CLOSE-WAIT state
TcpInSegs	Number of segments received including those in error on current connections
TcpOutSegs	Number of segments sent including those on current connections; excludes segments containing only retransmit octets
TcpRetransSegs	Number of TCP segments transmitted containing previously transmitted octets
TcpInErrs	Number of segments with bad TCP checksum
TcpOutRsts	Number of TCP segments sent containing RST flag
UDP Statistics	
UdpinDatagrams	Number of UDP datagrams delivered to UDP users
UdpNoPorts	Number of received UDP datagrams for which there was not application at the destination port
UdpInErrors	Number of received UDP datagrams not delivered for reasons other than no application at port
UdpOutDatagrams	Number of datagrams sent

Stream Statistics

The Stream Statistics menu provides information about two types of streaming. The first stream is RTP Statistics and the second stream is Voice Quality Metrics. Table 9-6 description each field displayed in the Stream Statistics window.

Table 9-6 Stream Statistics Items

Item	Description
RTP Statistics	
Domain Name	Domain of the phone
Remote Port	Port number of the destination
Local Port	Port number of the phone
Receiver Joins	Number of times the phone has started receiving a stream
Host Name	Host name for the phone
Sender Packets	Number of RTP voice packets transmitted since voice stream was opened **Note** This number is not necessarily identical to the number of RTP voice packets transmitted since the call began because the call might have been placed on hold.
Sender Tool	Type of audio encoding used for the stream: G.729, G.711 u-law, G.711 A-law, or Lin16k
Sender Report Time	Internal time stamp indicating when this streaming statistics report was generated
Receiver Octets	Total number of octets received by the phone
Receiver Lost Packets	Number of missing RTP packets (lost in transit)
Receiver Reports	Number of times this streaming statistics report has been accessed from the web page (resets when the phone resets)
Voice Quality Metrics	
MOS LQK	Score that is an objective estimate of the mean opinion score (MOS) for listening quality (LQK) that rates from 5 (excellent) to 1 (bad). This score is based on audible concealment events due to frame loss in the preceding 8-second interval of the voice stream. For more information, see the "Resolving Voice Quality and Roaming" section on page 10-8 **Note** The MOS LQK score can vary based on the type of codec that the Cisco Unified IP Phone uses.
Min MOS LQK	Lowest MOS LQK score observed from start of the voice stream
MOS LQK Version	Version of the Cisco proprietary algorithm used to calculate MOS LQK scores
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
Conceal Secs	Number of seconds that have concealment events (lost frames) from the start of the voice stream (includes severely concealed seconds)

Related Topic

- Resolving Voice Quality and Roaming, page 10-8