



H.323 Signaling

This section describes some basic call flows for the Cisco ATA:

- [Supported H.323 Messages, page D-1](#)
- [H.323 Signaling Scenarios, page D-2](#)



Note

The term *Cisco ATA* is used throughout this manual to refer to both the Cisco ATA 186 and the Cisco ATA 188, unless differences between the Cisco ATA 186 and Cisco ATA 188 are explicitly stated.

Supported H.323 Messages

The Cisco ATA supports the following H.323 request methods:

- **Request**—When registering with an H.323 gatekeeper or Gateway, an individual H.323 endpoint must begin the process by sending a request message.
- **Confirm**—H.323 gatekeepers and Gateways authorize individual H.323 endpoints to access and send data over the H.323 network with explicit confirmation messages.
- **Reject**—In the event that an H.323 gatekeeper or Gateway is unable to grant access permission to an H.323 endpoint, a rejection message is sent and call setup is halted.
- **Setup**—Once access to the H.323 network has been granted, H.323 components contact remote H.323 components via setup messages, initiating two-way voice, video, or data communication.
- **Proceeding**—When a remote H.323 component acknowledges receipt of call initiation information and agrees to perform necessary subsequent setup for two-way voice, video, or data communication, it responds with a proceeding message.
- **Alerting**—When a remote H.323 endpoint has begun to notify the called party of an incoming call (the phone begins to ring at the far end), an alerting message is sent back to the calling party.
- **Connect**—When the called party answers the call (the phone goes off hook), the remote H.323 endpoint transmits a connecting message notifying the calling party that two-way communication is ready to commence.

H.323 Signaling Scenarios

This section describes call flows for the following scenarios:

- [H.323 Endpoint-to-Gatekeeper Registration, page D-2](#)
- [H.323 Endpoint-to-Endpoint Call Setup with a Common Gatekeeper, page D-5](#)
- [H.323 Call Setup from H.323 Network to Circuit Switched Network, page D-14](#)

Each of the call flows includes a call diagram, action descriptions table, and a sample log file.

H.323 Endpoint-to-Gatekeeper Registration

[Figure D-1](#) illustrates the Cisco ATA registering with an H.323 gatekeeper. This scenario features registration with no authentication.

Figure D-1 Cisco ATA-to-H.323 Gatekeeper Registration

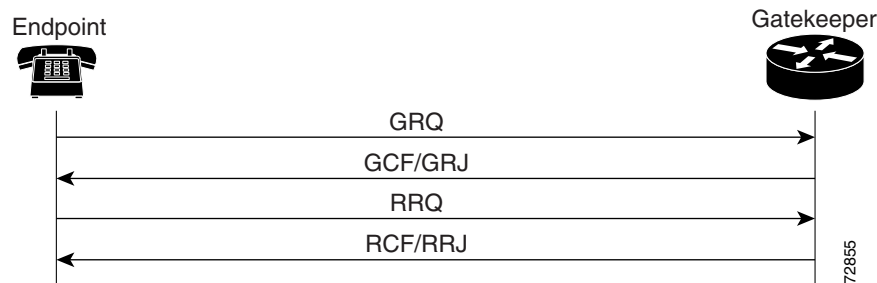


Table D-1 Action Descriptions

Step	Action	Description
1.	Gatekeeper Request (GRQ)—Cisco ATA to H.323 gatekeeper	Cisco ATA sends a GRQ message to the H.323 gatekeeper to see if any gatekeepers are available for registration.
2.	Gatekeeper Confirmation (GCF) or gatekeeper Rejection (GRJ)—H.323 gatekeeper to Cisco ATA	H.323 gatekeeper returns a GCF or GRJ message, indicating whether or not the responding gatekeeper is able to register new Cisco ATA devices.
3.	Registration Request (RRQ)—Cisco ATA to H.323 gatekeeper	Cisco ATA sends a RRQ message to the H.323 gatekeeper in an attempt to register as part of that gatekeeper's zone.
4.	Registration Confirmation (RCF) or Registration Rejection (RRJ)—H.323 gatekeeper to Cisco ATA	H.323 gatekeeper returns a RCF or RRJ message, indicating whether or not the gatekeeper will add the Cisco ATA to its zone.

Table D-2 Log Listings

1.	<pre> value RasMessage ::= gatekeeperRequest : 3w2d: { 3w2d: requestSeqNum 037472, 3w2d: protocolIdentifier { 0 0 8 2250 0 2 }, 3w2d: rasAddress ipAddress : 3w2d: { 3w2d: ip 'COA80267'H, 3w2d: port 02712 3w2d: }, 3w2d: endpointType 3w2d: { 3w2d: gateway 3w2d: { 3w2d: protocol 3w2d: { 3w2d: voice : 3w2d: { 3w2d: supportedPrefixes 3w2d: { 3w2d: } 3w2d: } 3w2d: } 3w2d: } 3w2d: } 3w2d: }, 3w2d: mc FALSE, 3w2d: undefinedNode FALSE 3w2d: }, 3w2d: gatekeeperIdentifier "c2600gk.komodo-tech.com", 3w2d: endpointAlias 3w2d: { 3w2d: h323-ID : "c2600gw", 3w2d: e164 : "14085551102", 3w2d: e164 : "14088713483", 3w2d: e164 : "14088713484", 3w2d: e164 : "5551111", 3w2d: e164 : "7771111", 3w2d: e164 : "8881111" 3w2d: } 3w2d: } </pre>
2.	<pre> 3w2d:value RasMessage ::= gatekeeperConfirm : 3w2d: { 3w2d: requestSeqNum 037472, 3w2d: protocolIdentifier { 0 0 8 2250 0 2 }, 3w2d: gatekeeperIdentifier "c2600gk.komodo-tech.com", 3w2d: rasAddress ipAddress : 3w2d: { 3w2d: ip 'COA80268'H, 3w2d: port 01719 3w2d: } 3w2d: } </pre>

Table D-2 Log Listings (continued)

3.	<pre> value RasMessage ::= registrationRequest : 3w2d: { 3w2d: requestSeqNum 02, 3w2d: protocolIdentifier { 0 0 8 2250 0 2 }, 3w2d: discoveryComplete TRUE, 3w2d: callSignalAddress 3w2d: { 3w2d: ipAddress : 3w2d: { 3w2d: ip 'C0A80260'H, 3w2d: port 01720 3w2d: } 3w2d: }, 3w2d: rasAddress 3w2d: { 3w2d: ipAddress : 3w2d: { 3w2d: ip 'C0A80260'H, 3w2d: port 01719 3w2d: } 3w2d: }, 3w2d: terminalType 3w2d: { 3w2d: vendor 3w2d: { 3w2d: vendor 3w2d: { 3w2d: t35CountryCode 05, 3w2d: t35Extension 00, 3w2d: manufacturerCode 020001 3w2d: }, 3w2d: productId '4B6F6D6F646F204520466F6E65'H, 3w2d: versionId '56657273696F6E20312E3130'H 3w2d: }, 3w2d: terminal 3w2d: { 3w2d: }, 3w2d: mc FALSE, 3w2d: undefinedNode FALSE 3w2d: }, 3w2d: terminalAlias 3w2d: { 3w2d: h323-ID : "196" 3w2d: }, 3w2d: endpointVendor 3w2d: { 3w2d: vendor 3w2d: { 3w2d: t35CountryCode 05, 3w2d: t35Extension 00, 3w2d: manufacturerCode 020001 3w2d: }, 3w2d: productId '4B6F6D6F646F204520466F6E65'H, 3w2d: versionId '56657273696F6E20312E3130'H 3w2d: }, 3w2d: keepAlive FALSE, 3w2d: willSupplyUUIES FALSE 3w2d: } </pre>
4.	<pre> 3w2d:value RasMessage ::= registrationConfirm : 3w2d: { 3w2d: requestSeqNum 02, 3w2d: protocolIdentifier { 0 0 8 2250 0 2 }, 3w2d: callSignalAddress 3w2d: { 3w2d: }, 3w2d: terminalAlias 3w2d: { 3w2d: h323-ID : "196" 3w2d: }, 3w2d: gatekeeperIdentifier "c2600gk.komodo-tech.com", 3w2d: endpointIdentifier "80F5235000009E12", 3w2d: timeToLive 03548, 3w2d: willRespondToIRR FALSE 3w2d: } </pre>

H.323 Endpoint-to-Endpoint Call Setup with a Common Gatekeeper

Figure D-2 illustrates a Cisco ATA initiating a connection to another Cisco ATA that is registered with the same H.323 gatekeeper. This scenario features registration with no authentication.



Note

This scenario assumes that the H.323 configuration employs Slow Start Signaling with tunneling capability.

Figure D-2 H.323 Endpoint-to-Endpoint Call Setup with a Common Gatekeeper

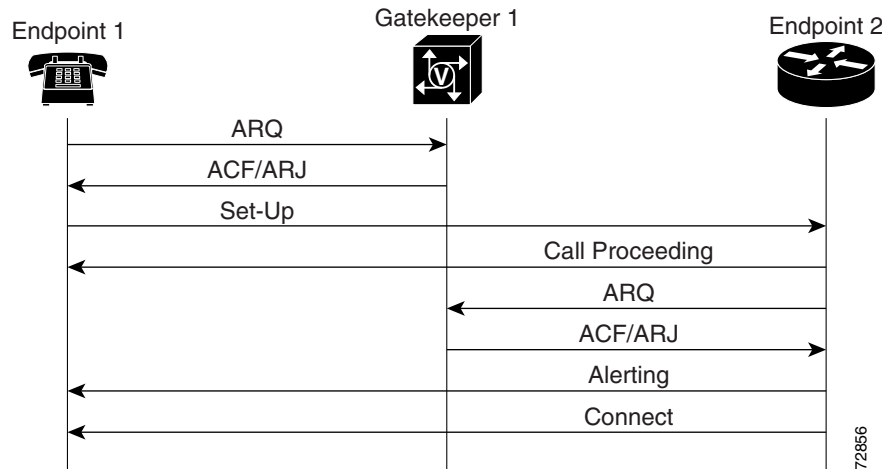


Table D-3 Action Descriptions

Step	Action	Description
1.	Local Admission Request (ARQ)—Local H.323 endpoint to H.323 gatekeeper	Cisco ATA sends a local ARQ message to the H.323 gatekeeper seeking authorization to place a call over the H.323 network.
2.	Local Admission Confirm (ACF) or Admission Reject (ARJ)—H.323 gatekeeper to the local H.323 endpoint	H.323 gatekeeper returns a ACF or ARJ message, indicating whether or not the responding gatekeeper is going to allow the Cisco ATA device access to the network.
3.	Open TCP Channel for Q.931 messaging	TCP port 1720 is opened, making way for the forward and reverse flow of Q.931 signaling messages between the H.323 endpoints.
4.	Q.931 Call Setup—Local H.323 endpoint to remote H.323 endpoint	Call setup initiates from the local H.323 endpoint.
5.	Q.931 Call Proceeding—Remote H.323 endpoint to local H.323 endpoint	Remote H.323 endpoint acknowledges call setup initiation.
6.	Remote Admission Request (ARQ)—Remote Cisco ATA to H.323 gatekeeper	(Somewhat simultaneous, chronologically, to call setup and call proceeding) remote H.323 endpoint contacts the common H.323 gatekeeper, seeking authorization to complete the two-way H.323 network call.
7.	Remote Admission Confirm (ACF) or Admission Reject (ARJ)—H.323 gatekeeper to the remote Cisco ATA	H.323 gatekeeper returns a ACF or ARJ message, indicating whether or not the responding gatekeeper is going to allow the Cisco ATA device access to the network.
8.	Q.931 Alerting—Remote H.323 endpoint to local H.323 endpoint	Status message is sent to calling H.323 endpoint advising that the called party has been notified (phone ringing).
9.	Q.931 Connect—Remote H.323 endpoint to local H.323 endpoint	Status message is sent to calling H.323 endpoint advising that the called party has answered the call (phone off hook).
10.	Open TCP Channel for H.245	Dynamically assigned TCP port is opened on both the local and remote H.323 endpoints, allowing for subsequent call setup activities (transmission and reception capability exchange, master-slave relationship determination, and so on).
11.	H.245 Terminal Capabilities	Various endpoint transmission and reception capabilities defining operation of voice, video, and data are exchanged and acknowledged to ensure consistent, reliable two-way communication between endpoints.
12.	H.245 Terminal Capabilities	
13.	H.245 Terminal Capabilities	
14.	H.245 Terminal Capabilities	
15.	Exchange of Master-Slave Determination Messages—Remote H.323 endpoint to local H.323 endpoint	Determines master and slave assignments between H.323 endpoints.
16.	H.245 Open Audio Logical Channel—Local H.323 endpoint to remote H.323 endpoint	Before actual transmission or reception of voice, video, or data, notification that the primary logical channel for the local H.323 endpoint has been opened, ensuring clear two-way communication.
17.	H.245 Open Audio Logical Channel Acknowledgement—Remote H.323 endpoint to local H.323 endpoint	Remote H.323 endpoint acknowledges readiness.

Table D-3 Action Descriptions (continued)

Step	Action	Description
18.	H.245 Open Audio Logical Channel—Remote H.323 endpoint to local H.323 endpoint	Before actual transmission or reception of voice, video, or data, notification that the primary logical channel for the remote H.323 endpoint has been opened, ensuring clear two-way communication.
19.	H.245 Open Audio Logical Channel Acknowledgement—Local H.323 endpoint to remote H.323 endpoint	Local H.323 endpoint acknowledges readiness.
20.	Bi-Directional Audio with Transcoding in the Endpoints	Two-way communication ensues between endpoints over the H.323 network.

Table D-4 Log Listings

1.	<pre> value RasMessage ::= registrationRequest : { requestSeqNum 61357 protocolIdentifier { 0 0 8 2250 0 2 } discoveryComplete FALSE callSignalAddress { } rasAddress { ipAddress : { ip 'COA80363'H port 49450 } } terminalType { mc FALSE undefinedNode FALSE } gatekeeperIdentifier {"zonetwo"} endpointVendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } } timeToLive 60 keepAlive TRUE endpointIdentifier {"814EE09C0000001A"} willSupplyUUIEs FALSE } </pre>
2.	<pre> value RasMessage ::= registrationConfirm : { requestSeqNum 61357 protocolIdentifier { 0 0 8 2250 0 2 } callSignalAddress { } gatekeeperIdentifier {"zonetwo"} endpointIdentifier {"814EE09C0000001A"} alternateGatekeeper { } timeToLive 60 willRespondToIRR FALSE } </pre>

Table D-4 Log Listings (continued)

3.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body setup : { protocolIdentifier { 0 0 8 2250 0 2 } sourceAddress { h323-ID :{"Firstname Lastname"} } sourceInfo { vendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 21324 } productId '4D6963726F736F6674AE204E65744D656574696E...'H versionId '332E3000'H } terminal { mc FALSE undefinedNode FALSE } destinationAddress { e164 : "6661111" } activeMC FALSE conferenceID '2E9B85298E88D611AD4600A0CC5C89F1'H conferenceGoal create :NULL callType pointToPoint :NULL sourceCallSignalAddress ipAddress : { ip 'C0A80209'H port 4568 } callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } mediaWaitForConnect FALSE canOverlapSend FALSE } nonStandardData { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 21324 } data '0200000028000000000000001B00000081384274...'H } } } } </pre>
4.	<pre> value ARQnonStandardInfo ::= { sourceAlias { } sourceExtAlias { } displayInformationElement "Firstname Lastname" interfaceSpecificBillingId "FXS 1/1/0" } </pre>

Table D-4 Log Listings (continued)

5.	<pre> value RasMessage ::= admissionRequest : { requestSeqNum 61358 callType pointToPoint :NULL callModel direct :NULL endpointIdentifier {"814EE09C0000001A"} destinationInfo { e164 : "6661111" } srcInfo { h323-ID : {"Firstname Lastname"} } srcCallSignalAddress ipAddress : { ip 'C0A80209'H port 4568 } bandwidth 640 callReferenceValue 215 nonStandardData { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data '8000000860132246697273746E616D65204C6173...'H } conferenceID '2E9B85298E88D611AD4600A0CC5C89F1'H activeMC FALSE answerCall TRUE canMapAlias TRUE callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } willSupplyUUIEs FALSE } </pre>
6.	<pre> value RasMessage ::= admissionConfirm : { requestSeqNum 61358 bandwidth 1 callModel direct :NULL destCallSignalAddress ipAddress : { ip 'C0A80363'H port 1720 } irrFrequency 240 willRespondToIRR FALSE uuiesRequested { setup FALSE callProceeding FALSE connect FALSE alerting FALSE information FALSE releaseComplete FALSE facility FALSE progress FALSE empty FALSE } } </pre>

Table D-4 Log Listings (continued)

7.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body callProceeding : { protocolIdentifier { 0 0 8 2250 0 2 } destinationInfo { mc FALSE undefinedNode FALSE } h245Address ipAddress : { ip 'COA80363'H port 11201 } callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } } h245Tunneling FALSE } } </pre>
8.	<pre> value H323_UU_NonStdInfo ::= { version 16 protoParam qsigNonStdInfo : { iei 30 rawMesg '1E028188'H } } </pre>
9.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body progress : { protocolIdentifier { 0 0 8 2250 0 2 } destinationInfo { mc FALSE undefinedNode FALSE } h245Address ipAddress : { ip 'COA80363'H port 11201 } callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } } h245Tunneling FALSE nonStandardControl { { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data '60011000011E041E028188'H } } } } </pre>

Table D-4 Log Listings (continued)

10.	<pre> value H323_UU_NonStdInfo ::= { version 0 progIndParam progIndIEInfo : { progIndIE '00000002'H } } </pre>
11.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body connect : { protocolIdentifier { 0 0 8 2250 0 2 } h245Address ipAddress : { ip 'C0A80363'H port 11201 } destinationInfo { gateway { protocol { voice : { supportedPrefixes { { prefix e164 : "1#" } } } } } mc FALSE undefinedNode FALSE } conferenceID '2E9B85298E88D611AD4600A0CC5C89F1'H callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } } h245Tunneling FALSE nonStandardControl { { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data 'C00100028006000400000002'H } } } } </pre>
12.	<pre> value IRRperCallnonStandardInfo ::= { startTime 1024959117 } </pre>

Table D-4 Log Listings (continued)

```

13. value RasMessage ::= infoRequestResponse :
    {
        requestSeqNum 61359
        endpointType
        {
            gateway
            {
                protocol
                {
                    voice :
                    {
                        supportedPrefixes
                        {
                            {
                                prefix e164 : "1#"
                            }
                        }
                    }
                }
            }
        }
        mc FALSE
        undefinedNode FALSE
    }
    endpointIdentifier {"814EE09C0000001A"}
    rasAddress ipAddress :
    {
        ip 'C0A80363'H
        port 49450
    }
    callSignalAddress
    {
        ipAddress :
        {
            ip 'C0A80363'H
            port 1720
        }
    }
    endpointAlias
    {
        e164 : "6661111",
        e164 : "6663333",
        h323-ID : {"zonetwo"}
    }
    perCallInfo
    {
        {
            nonStandardData
            {
                nonStandardIdentifier h221NonStandard :
                {
                    t35CountryCode 181
                    t35Extension 0
                    manufacturerCode 18
                }
                data '703D17A28D'H
            }
            callReferenceValue 215
            conferenceID '2E9B85298E88D611AD4600A0CC5C89F1'H
            h245
            {
            }
            callSignaling
            {
            }
            callType pointToPoint : NULL
            bandwidth 1
            callModel direct : NULL
            callIdentifier
            {
                guid '2D9B85298E88D611AD4600A0CC5C89F1'H
            }
        }
    }
    needResponse FALSE
    }

```

Table D-4 Log Listings (continued)

14.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body releaseComplete : { protocolIdentifier { 0 0 8 2250 0 2 } reason undefinedReason :NULL callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } } } } </pre>
15.	<pre> value RasMessage ::= disengageRequest : { requestSeqNum 61360 endpointIdentifier {"814EE09C0000001A"} conferenceID '2E9B85298E88D611AD4600A0CC5C89F1'H callReferenceValue 215 disengageReason normalDrop :NULL callIdentifier { guid '2D9B85298E88D611AD4600A0CC5C89F1'H } answeredCall TRUE } </pre>
16.	<pre> value RasMessage ::= disengageConfirm : { requestSeqNum 61360 } </pre>

Table D-4 Log Listings (continued)

17.	<pre> value RasMessage ::= registrationRequest : { requestSeqNum 61361 protocolIdentifier { 0 0 8 2250 0 2 } discoveryComplete FALSE callSignalAddress { } rasAddress { ipAddress : { ip 'C0A80363'H port 49450 } } terminalType { mc FALSE undefinedNode FALSE } gatekeeperIdentifier {"zonetwo"} endpointVendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } } timeToLive 60 keepAlive TRUE endpointIdentifier {"814EE09C0000001A"} willSupplyUIUES FALSE } </pre>
18.	<pre> value RasMessage ::= registrationConfirm : { requestSeqNum 61361 protocolIdentifier { 0 0 8 2250 0 2 } callSignalAddress { } gatekeeperIdentifier {"zonetwo"} endpointIdentifier {"814EE09C0000001A"} alternateGatekeeper { } timeToLive 60 willRespondToIRR FALSE } </pre>

H.323 Call Setup from H.323 Network to Circuit Switched Network

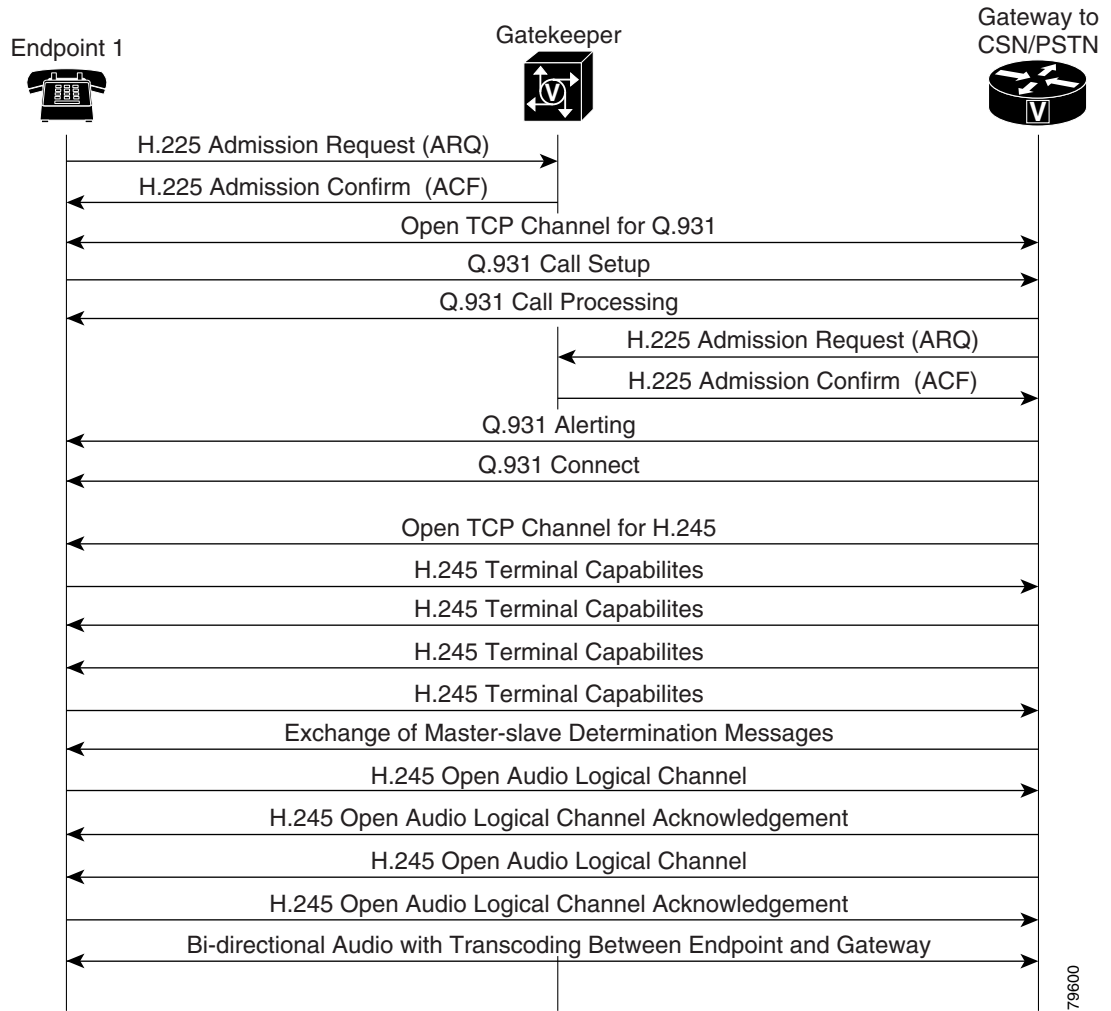
Figure D-3 illustrates a Cisco ATA initiating a connection to a Circuit Switched Network (CSN) or Public Switched Telephone Network (PSTN) Gateway router through its local H.323 gatekeeper.



Note

This scenario assumes that the H.323 configuration employs Fast Start Signaling with tunneling capability.

Figure D-3 H.323 Call Setup from H.323 Network to Circuit Switched Network



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Table D-5 Action Descriptions

Step	Action	Description
1.	Local Admission Request (ARQ)—Local endpoint to H.323 gatekeeper	Cisco ATA sends a local ARQ message to the H.323 gatekeeper seeking authorization to place a call over the H.323 network.
2.	Local Admission Confirm (ACF) or Admission Reject (ARJ)—H.323 gatekeeper to the local endpoint	H.323 gatekeeper returns a ACF or ARJ message, indicating whether or not the responding gatekeeper is going to allow the Cisco ATA device access to the network.
3.	Open TCP Channel for Q.931 messaging	TCP port 1720 is opened, making way for the forward and reverse flow of Q.931 signaling messages between the H.323 endpoint and the CSN/PSTN Gateway.
4.	Q.931 Call Setup—Local H.323 endpoint to remote H.323 endpoint	Call setup initiates from the local H.323 endpoint.
5.	Q.931 Call Proceeding—Remote H.323 endpoint to local H.323 endpoint	Gateway acknowledges call setup initiation.

Table D-5 Action Descriptions (continued)

Step	Action	Description
6.	Gateway Admission Request (ARQ)—CSN/PSTN Gateway to H.323 gatekeeper	(Somewhat simultaneous, chronologically, to call setup and call proceeding) Gateway contacts the common H.323 gatekeeper, seeking authorization to complete the two-way H.323 network-to-CSN/PSTN Gateway call.
7.	Gateway Admission Confirm (ACF) or Admission Reject (ARJ)—H.323 gatekeeper to CSN/PSTN Gateway	H.323 gatekeeper returns a ACF or ARJ message, indicating whether or not the responding gatekeeper is going to allow the Gateway access to the network.
8.	Q.931 Alerting—Gateway endpoint to local H.323 endpoint	Status message is sent to calling H.323 endpoint advising that the called party has been notified (phone ringing).
9.	Q.931 Connect—Gateway to local H.323 endpoint	Status message is sent to calling H.323 endpoint advising that the called party has answered the call (phone off hook).
10.	Open TCP Channel for H.245	Dynamically assigned TCP port is opened on both the local H.323 endpoint and the Gateway, allowing for subsequent call setup activities (transmission and reception capability exchange, master-slave relationship determination, and so on).
11.	H.245 Terminal Capabilities	Various endpoint transmission and reception capabilities defining operation of voice, video, and data are exchanged and acknowledged to ensure consistent, reliable two-way communication between the H.323 endpoint and the Gateway.
12.	H.245 Terminal Capabilities	
13.	H.245 Terminal Capabilities	
14.	H.245 Terminal Capabilities	
15.	Exchange of Master-Slave Determination Messages—Remote H.323 endpoint to local H.323 endpoint	Determines master and slave assignments between the H.323 endpoint and the Gateway.
16.	H.245 Open Audio Logical Channel—Local H.323 endpoint to remote H.323 endpoint	Before actual transmission or reception of voice, video, or data, notification that the primary logical channel for the local H.323 endpoint has been opened, ensuring clear two-way communication.
17.	H.245 Open Audio Logical Channel Acknowledgement—Remote H.323 endpoint to local H.323 endpoint	Gateway acknowledges readiness.
18.	H.245 Open Audio Logical Channel—Remote H.323 endpoint to local H.323 endpoint	Before actual transmission or reception of voice, video, or data, notification that the primary logical channel for the Gateway has been opened, ensuring clear two-way communication.
19.	H.245 Open Audio Logical Channel Acknowledgement—Local H.323 endpoint to remote H.323 endpoint	Local H.323 endpoint acknowledges readiness.
20.	Bi-Directional Audio with Transcoding Between Endpoint and Gateway	Two-way communication ensues between the local H.323 endpoint and the CSN/PSTN Gateway.

Table D-6 Log Listings

1.	<pre> value RasMessage ::= registrationRequest : { requestSeqNum 28034 protocolIdentifier { 0 0 8 2250 0 2 } discoveryComplete FALSE callSignalAddress { } rasAddress { ipAddress : { ip 'COA80363'H port 49450 } } terminalType { mc FALSE undefinedNode FALSE } gatekeeperIdentifier {"zonetwo"} endpointVendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } } timeToLive 60 keepAlive TRUE endpointIdentifier {"814EE09C0000001A"} willSupplyUUIEs FALSE } </pre>
2.	<pre> value RasMessage ::= registrationConfirm : { requestSeqNum 28034 protocolIdentifier { 0 0 8 2250 0 2 } callSignalAddress { } gatekeeperIdentifier {"zonetwo"} endpointIdentifier {"814EE09C0000001A"} alternateGatekeeper { } timeToLive 60 willRespondToIRR FALSE } </pre>

Table D-6 Log Listings (continued)

3.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body setup : { protocolIdentifier { 0 0 8 2250 0 2 } sourceAddress { h323-ID :{"Firstname Lastname"} } sourceInfo { vendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 21324 } productId '4D6963726F736F6674AE204E65744D656574696E...'H versionId '332E3000'H } terminal { mc FALSE undefinedNode FALSE } destinationAddress { e164 : "914089023833" } activeMC FALSE conferenceID '0C01EF01BD95D611AD4600A0CC5C89F1'H conferenceGoal create :NULL callType pointToPoint :NULL sourceCallSignalAddress ipAddress : { ip 'C0A80209'H port 4595 } callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } mediaWaitForConnect FALSE canOverlapSend FALSE } nonStandardData { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 21324 } data '0200000028000000000000001B00000081384274...'H } } } } </pre>
4.	<pre> value ARQnonStandardInfo ::= { sourceAlias { } sourceExtAlias { } displayInformationElement "Firstname Lastname" interfaceSpecificBillingId "FXS 1/1/1" } </pre>

Table D-6 Log Listings (continued)

5.	<pre> value RasMessage ::= admissionRequest : { requestSeqNum 28037 callType pointToPoint :NULL callModel direct :NULL endpointIdentifier {"814EE09C0000001A"} destinationInfo { e164 : "914089023833" } srcInfo { h323-ID : {"Firstname Lastname"} } srcCallSignalAddress ipAddress : { ip 'COA80209'H port 4595 } bandwidth 640 callReferenceValue 235 nonStandardData { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data '8000000860132246697273746E616D65204C6173...'H } conferenceID '0C01EF01BD95D611AD4600A0CC5C89F1'H activeMC FALSE answerCall TRUE canMapAlias TRUE callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } willSupplyUUIEs FALSE } </pre>
6.	<pre> value RasMessage ::= admissionConfirm : { requestSeqNum 28037 bandwidth 1 callModel direct :NULL destCallSignalAddress ipAddress : { ip 'COA80363'H port 1720 } irrFrequency 240 willRespondToIRR FALSE uuiesRequested { setup FALSE callProceeding FALSE connect FALSE alerting FALSE information FALSE releaseComplete FALSE facility FALSE progress FALSE empty FALSE } } </pre>

Table D-6 Log Listings (continued)

7.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body callProceeding : { protocolIdentifier { 0 0 8 2250 0 2 } destinationInfo { mc FALSE undefinedNode FALSE } h245Address ipAddress : { ip 'COA80363'H port 11218 } callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } } h245Tunneling FALSE } } </pre>
8.	<pre> value H323_UU_NonStdInfo ::= { version 16 protoParam qsigNonStdInfo : { iei 30 rawMesg '1E028188'H } } </pre>
9.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body progress : { protocolIdentifier { 0 0 8 2250 0 2 } destinationInfo { mc FALSE undefinedNode FALSE } h245Address ipAddress : { ip 'COA80363'H port 11218 } callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } } h245Tunneling FALSE nonStandardControl { { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data '60011000011E041E028188'H } } } } </pre>

Table D-6 Log Listings (continued)

```

10. value H323_UserInformation ::=
    {
      h323-uu-pdu
      {
        h323-message-body connect :
        {
          protocolIdentifier { 0 0 8 2250 0 2 }
          h245Address ipAddress :
          {
            ip 'C0A80363'H
            port 11218
          }
          destinationInfo
          {
            gateway
            {
              protocol
              {
                voice :
                {
                  supportedPrefixes
                  {
                    {
                      prefix e164 : "1#"
                    }
                  }
                }
              }
            }
            mc FALSE
            undefinedNode FALSE
          }
          conferenceID '0C01EF01BD95D611AD4600A0CC5C89F1'H
          callIdentifier
          {
            guid '0B01EF01BD95D611AD4600A0CC5C89F1'H
          }
        }
        h245Tunneling FALSE
        nonStandardControl
        {
          {
            nonStandardIdentifier h221NonStandard :
            {
              t35CountryCode 181
              t35Extension 0
              manufacturerCode 18
            }
            data 'C001000280060004000000002'H
          }
        }
      }
    }

```

Table D-6 Log Listings (continued)

```

11. value RasMessage ::= infoRequestResponse :
    {
        requestSeqNum 28038
        endpointType
        {
            gateway
            {
                protocol
                {
                    voice :
                    {
                        supportedPrefixes
                        {
                            {
                                prefix e164 : "1#"
                            }
                        }
                    }
                }
            }
        }
        mc FALSE
        undefinedNode FALSE
    }
    endpointIdentifier {"814EE09C0000001A"}
    rasAddress ipAddress :
    {
        ip 'C0A80363'H
        port 49450
    }
    callSignalAddress
    {
        ipAddress :
        {
            ip 'C0A80363'H
            port 1720
        }
    }
    endpointAlias
    {
        e164 : "6661111",
        e164 : "6663333",
        h323-ID : {"zonetwo"}
    }
    perCallInfo
    {
        {
            nonStandardData
            {
                nonStandardIdentifier h221NonStandard :
                {
                    t35CountryCode 181
                    t35Extension 0
                    manufacturerCode 18
                }
                data '703D2DC1A0'H
            }
            callReferenceValue 235
            conferenceID '0C01EF01BD95D611AD4600A0CC5C89F1'H
            h245
            {
            }
            callSignaling
            {
            }
            callType pointToPoint : NULL
            bandwidth 1
            callModel direct : NULL
            callIdentifier
            {
                guid '0B01EF01BD95D611AD4600A0CC5C89F1'H
            }
            }
        }
    }
    needResponse FALSE
}

```

Table D-6 Log Listings (continued)

12.	<pre>value H323_UU_NonStdInfo ::= { version 0 progIndParam progIndIEInfo : { progIndIE '00000002'H } }</pre>
13.	<pre>value IRRperCallnonStandardInfo ::= { startTime 1026408864 }</pre>

Table D-6 Log Listings (continued)

```

14. value MultimediaSystemControlMessage ::= request :terminalCapabilitySet :
    {
        sequenceNumber 1
        protocolIdentifier { 0 0 8 245 0 3 }
        multiplexCapability h2250Capability :
        {
            maximumAudioDelayJitter 20
            receiveMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
            transmitMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
            receiveAndTransmitMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
        }
        mcCapability
        {
            centralizedConferenceMC FALSE
            decentralizedConferenceMC FALSE
        }
        rtcpVideoControlCapability FALSE
        mediaPacketizationCapability
        {
            h261aVideoPacketization FALSE
        }
        logicalChannelSwitchingCapability FALSE
        t120DynamicPortCapability FALSE
    }
    capabilityTable
    {

```

Table D-6 Log Listings (continued)

	<pre> { capabilityTableEntryNumber 17 capability receiveAndTransmitDataApplicationCapability : { application nonStandard : { nonStandardIdentifier h221NonStandard : { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } data '52747044746D6652656C6179'H } maxBitRate 0 } }, { capabilityTableEntryNumber 23 capability receiveUserInputCapability :hookflash :NULL }, { capabilityTableEntryNumber 22 capability receiveUserInputCapability :dtmf :NULL }, { capabilityTableEntryNumber 19 capability receiveUserInputCapability :basicString :NULL }, { capabilityTableEntryNumber 2 capability receiveAudioCapability :g711Alaw64k :20 } } capabilityDescriptors { { capabilityDescriptorNumber 1 simultaneousCapabilities { { 23 }, { 22, 19, 17 }, { 2 } } } } </pre>
15.	<pre> value MultimediaSystemControlMessage ::= request :masterSlaveDetermination : { terminalType 60 statusDeterminationNumber 5917 } </pre>

Table D-6 Log Listings (continued)

```

16. value MultimediaSystemControlMessage ::= request :terminalCapabilitySet :
    {
        sequenceNumber 1
        protocolIdentifier { 0 0 8 245 0 3 }
        multiplexCapability h2250Capability :
        {
            maximumAudioDelayJitter 60
            receiveMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
            transmitMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
            receiveAndTransmitMultipointCapability
            {
                multicastCapability FALSE
                multiUniCastConference FALSE
                mediaDistributionCapability
                {
                    {
                        centralizedControl FALSE
                        distributedControl FALSE
                        centralizedAudio FALSE
                        distributedAudio FALSE
                        centralizedVideo FALSE
                        distributedVideo FALSE
                    }
                }
            }
            mcCapability
            {
                centralizedConferenceMC FALSE
                decentralizedConferenceMC FALSE
            }
            rtcpVideoControlCapability FALSE
            mediaPacketizationCapability
            {
                h261aVideoPacketization FALSE
            }
        }
        capabilityTable
        {

```

Table D-6 Log Listings (continued)

```

{
  capabilityTableEntryNumber 32768
  capability nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 66
      manufacturerCode 32896
    }
    data '01'H
  }
},
{
  capabilityTableEntryNumber 15
  capability receiveAndTransmitDataApplicationCapability :
  {
    application t120 :separateLANStack :NULL
    maxBitRate 621700
  }
},
{
  capabilityTableEntryNumber 1
  capability receiveAudioCapability :nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 0
      manufacturerCode 21324
    }
    data '020000000000F4010000F4010100040000000000...'H
  }
},
{
  capabilityTableEntryNumber 2
  capability receiveAudioCapability :g711Alaw64k :180
},
{
  capabilityTableEntryNumber 3
  capability receiveAudioCapability :g711Ulaw64k :180
},
{
  capabilityTableEntryNumber 4
  capability receiveAudioCapability :nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 0
      manufacturerCode 21324
    }
    data '020000000000A0000000A000040010000000000...'H
  }
},
{
  capabilityTableEntryNumber 5
  capability receiveAudioCapability :nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 0
      manufacturerCode 21324
    }
    data '020000000000A0000000A000040010000000000...'H
  }
},
{
  capabilityTableEntryNumber 6
  capability receiveAudioCapability :nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 0
      manufacturerCode 21324
    }
  }
}

```

Table D-6 Log Listings (continued)

```

}
    data '0200000000008000000080000500140000000000...'H
  }
},
{
  capabilityTableEntryNumber 7
  capability receiveAudioCapability :nonStandard :
  {
    nonStandardIdentifier h221NonStandard :
    {
      t35CountryCode 181
      t35Extension 0
      manufacturerCode 21324
    }
    data '0200000000008000000080000500140000000000...'H
  }
},
{
  capabilityTableEntryNumber 8
  capability receiveAudioCapability :g7231 :
  {
    maxAl-sduAudioFrames 12
    silenceSuppression FALSE
  }
},
{
  capabilityTableEntryNumber 10
  capability receiveVideoCapability :h263VideoCapability :
  {
    sqcifMPI 1
    maxBitRate 6217
    unrestrictedVector FALSE
    arithmeticCoding FALSE
    advancedPrediction FALSE
    pbFrames FALSE
    temporalSpatialTradeOffCapability TRUE
  }
},
{
  capabilityTableEntryNumber 11
  capability receiveVideoCapability :h263VideoCapability :
  {
    qcifMPI 1
    maxBitRate 6217
    unrestrictedVector FALSE
    arithmeticCoding FALSE
    advancedPrediction FALSE
    pbFrames FALSE
    temporalSpatialTradeOffCapability TRUE
  }
},
{
  capabilityTableEntryNumber 12
  capability receiveVideoCapability :h263VideoCapability :
  {
    cifMPI 2
    maxBitRate 6217
    unrestrictedVector FALSE
    arithmeticCoding FALSE
    advancedPrediction FALSE
    pbFrames FALSE
    temporalSpatialTradeOffCapability TRUE
  }
},
{
  capabilityTableEntryNumber 13
  capability receiveVideoCapability :h261VideoCapability :
  {
    qcifMPI 1
    temporalSpatialTradeOffCapability TRUE
    maxBitRate 6217
    stillImageTransmission FALSE
  }
},
},

```

Table D-6 Log Listings (continued)

```

{
  capabilityTableEntryNumber 14
  capability receiveVideoCapability :h261VideoCapability :
  {
    cifMPI 2
    temporalSpatialTradeOffCapability TRUE
    maxBitRate 6217
    stillImageTransmission FALSE
  }
}
capabilityDescriptors
{
  {
    capabilityDescriptorNumber 6
    simultaneousCapabilities
    {
      {
        8,
        7,
        5,
        6,
        3,
        2,
        1,
        4
      },
      {
        10
      },
      {
        15
      }
    }
  },
  {
    capabilityDescriptorNumber 7
    simultaneousCapabilities
    {
      {
        8,
        7,
        5,
        6,
        3,
        2,
        1,
        4
      },
      {
        11
      },
      {
        15
      }
    }
  },
  {
    capabilityDescriptorNumber 8
    simultaneousCapabilities
    {

```

Table D-6 Log Listings (continued)

```

{
    8,
    7,
    5,
    6,
    3,
    2,
    1,
    4
},
{
    13
},
{
    15
}
},
{
    capabilityDescriptorNumber 9
    simultaneousCapabilities
    {
        {
            8,
            7,
            5,
            6,
            3,
            2,
            1,
            4
        },
        {
            12
        },
        {
            15
        }
    }
},
{
    capabilityDescriptorNumber 10
    simultaneousCapabilities
    {
        {
            8,
            7,
            5,
            6,
            3,
            2,
            1,
            4
        },
        {
            14
        },
        {
            15
        }
    }
}
}
}

```

Table D-6 Log Listings (continued)

17.	<pre>value MultimediaSystemControlMessage ::= response :terminalCapabilitySetAck : { sequenceNumber 1 }</pre>
18.	<pre>value MultimediaSystemControlMessage ::= request :masterSlaveDetermination : { terminalType 50 statusDeterminationNumber 7862592 }</pre>
19.	<pre>value MultimediaSystemControlMessage ::= response :masterSlaveDeterminationAck : { decision slave :NULL }</pre>
20.	<pre>value MultimediaSystemControlMessage ::= response :terminalCapabilitySetAck : { sequenceNumber 1 }</pre>
21.	<pre>value MultimediaSystemControlMessage ::= response :masterSlaveDeterminationAck : { decision master :NULL }</pre>
22.	<pre>value MultimediaSystemControlMessage ::= request :openLogicalChannel : { forwardLogicalChannelNumber 1 forwardLogicalChannelParameters { dataType audioData :g711Alaw64k :20 multiplexParameters h2250LogicalChannelParameters : { sessionID 1 mediaControlChannel unicastAddress :iPAddress : { network 'COA80363'H tsapIdentifier 18757 } } } }</pre>
23.	<pre>value MultimediaSystemControlMessage ::= request :openLogicalChannel : { forwardLogicalChannelNumber 257 forwardLogicalChannelParameters { dataType audioData :g711Alaw64k :20 multiplexParameters h2250LogicalChannelParameters : { sessionID 1 mediaGuaranteedDelivery FALSE mediaControlChannel unicastAddress :iPAddress : { network 'COA80209'H tsapIdentifier 49607 } mediaControlGuaranteedDelivery FALSE silenceSuppression TRUE } } }</pre>

Table D-6 Log Listings (continued)

24.	<pre> value MultimediaSystemControlMessage ::= response :openLogicalChannelAck : { forwardLogicalChannelNumber 257 forwardMultiplexAckParameters h2250LogicalChannelAckParameters : { sessionID 1 mediaChannel unicastAddress :iPAddress : { network 'COA80363'H tsapIdentifier 18756 } mediaControlChannel unicastAddress :iPAddress : { network 'COA80363'H tsapIdentifier 18757 } flowControlToZero FALSE } } </pre>
25.	<pre> value MultimediaSystemControlMessage ::= response :openLogicalChannelAck : { forwardLogicalChannelNumber 1 forwardMultiplexAckParameters h2250LogicalChannelAckParameters : { sessionID 1 mediaChannel unicastAddress :iPAddress : { network 'COA80209'H tsapIdentifier 49606 } mediaControlChannel unicastAddress :iPAddress : { network 'COA80209'H tsapIdentifier 49607 } } } </pre>
26.	<pre> value RasMessage ::= registrationRequest : { requestSeqNum 28039 protocolIdentifier { 0 0 8 2250 0 2 } discoveryComplete FALSE callSignalAddress { } rasAddress { ipAddress : { ip 'COA80363'H port 49450 } } terminalType { mc FALSE undefinedNode FALSE } gatekeeperIdentifier {"zonetwo"} endpointVendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } } timeToLive 60 keepAlive TRUE endpointIdentifier {"814EE09C0000001A"} willSupplyUUIEs FALSE } </pre>

Table D-6 Log Listings (continued)

27.	<pre> value RasMessage ::= registrationConfirm : { requestSeqNum 28039 protocolIdentifier { 0 0 8 2250 0 2 } callSignalAddress { } gatekeeperIdentifier {"zonetwo"} endpointIdentifier {"814EE09C0000001A"} alternateGatekeeper { } timeToLive 60 willRespondToIRR FALSE } </pre>
28.	<pre> value MultimediaSystemControlMessage ::= command :endSessionCommand :disconnect :NULL </pre>
29.	<pre> value MultimediaSystemControlMessage ::= command :endSessionCommand :disconnect :NULL </pre>
30.	<pre> value H323_UserInformation ::= { h323-uu-pdu { h323-message-body releaseComplete : { protocolIdentifier { 0 0 8 2250 0 2 } reason undefinedReason :NULL callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } } } } </pre>
31.	<pre> value RasMessage ::= disengageRequest : { requestSeqNum 28040 endpointIdentifier {"814EE09C0000001A"} conferenceID '0C01EF01BD95D611AD4600A0CC5C89F1'H callReferenceValue 235 disengageReason normalDrop :NULL callIdentifier { guid '0B01EF01BD95D611AD4600A0CC5C89F1'H } answeredCall TRUE } </pre>

Table D-6 Log Listings (continued)

32.	<pre>value RasMessage ::= disengageConfirm : { requestSeqNum 28040 }</pre>
33.	<pre>value RasMessage ::= registrationRequest : { requestSeqNum 28041 protocolIdentifier { 0 0 8 2250 0 2 } discoveryComplete FALSE callSignalAddress { } rasAddress { ipAddress : { ip 'C0A80363'H port 49450 } } terminalType { mc FALSE undefinedNode FALSE } gatekeeperIdentifier {"zonetwo"} endpointVendor { vendor { t35CountryCode 181 t35Extension 0 manufacturerCode 18 } } }</pre>