



Cisco PGW 2200 Softswitch Enhanced Video Support Feature Module

Document Release History

Publication Date	Comments
December 2009	Updated that the valid values for dataword3 of the CODEC result type are 0 and 1.
June 2009	Initial release of document

Feature History

Release	Modification
9.8(1)	The Enhanced Video Support feature is introduced on the Cisco PGW 2200 Softswitch.

This document describes the Enhanced Video Support feature on the Cisco PGW 2200 Softswitch and includes the following sections:

- [Feature Description, page 1](#)
- [Provisioning Tasks, page 5](#)
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- [Software Changes for This Feature, page 14](#)
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Feature Description

The Enhanced Video Support feature expands video capabilities on the Cisco PGW 2200 Softswitch.



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Before the introduction of this feature, the Cisco PGW 2200 Softswitch handled Session Initiation Protocol (SIP) video calls in a basic way. You couldn't hold or transfer SIP video calls. You did not have control of media streams for SIP video calls.

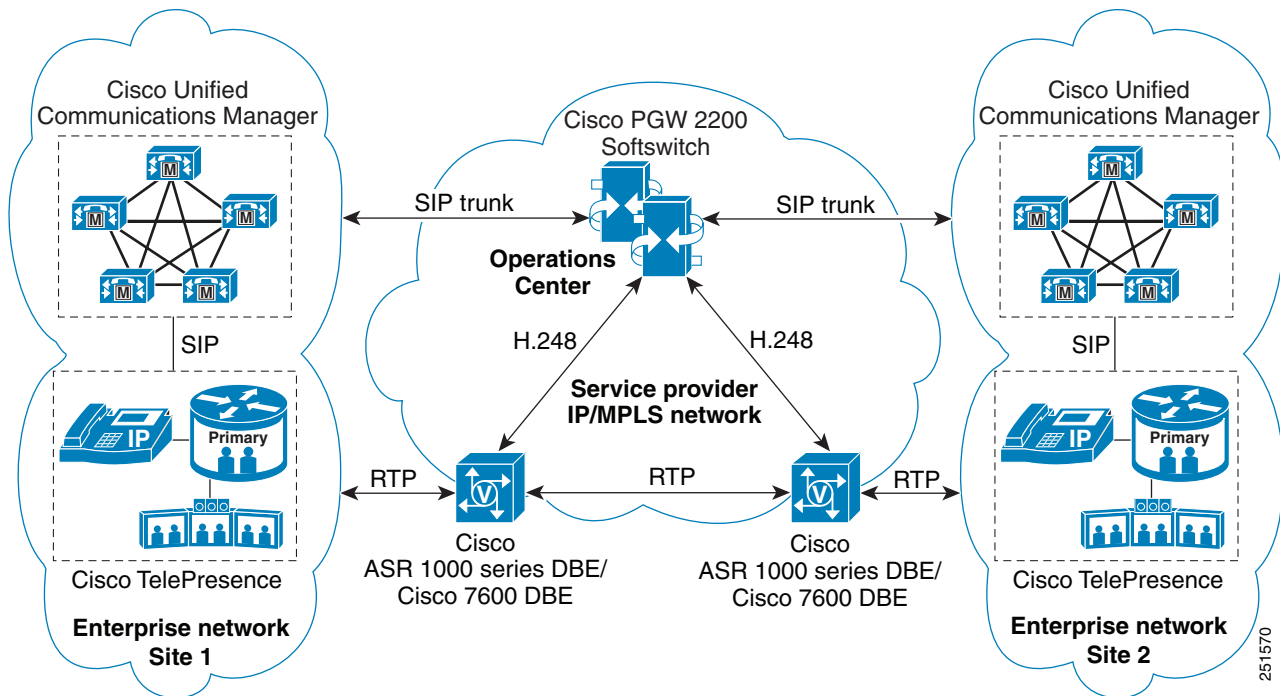
With this feature, you have more control of the call setup process for SIP video calls compared to the basic SIP calls. Working together with data border elements (DBEs) (Cisco ASR 1000 series DBE or Cisco 7600 DBE), the Cisco PGW 2200 Softswitch handles SIP video calls more comprehensively:

- Strong control of audio and video streams—The Cisco PGW 2200 Softswitch anchors audio and video streams on DBEs (such as Cisco ASR 1000 series DBE and Cisco 7600 DBE). The Cisco PGW 2200 Softswitch, coworking with DBEs, provides the following functions for audio and video traffic:
 - Virtual private network (VPN) discrimination
 - Topology hiding
 - Gate control
 - Media latching for remote network address translation (NAT) traversal
 - Delayed-offer to early-offer conversion
- Flexibility to control video call admissions—This feature enables you to control video call admissions based on trunk group capabilities or number analysis results.
- Video codec negotiation and selection—You can customize video codec capabilities at three levels to affect the codec selection process.
- Video call hold, call transfer, and conferencing services—This feature allows you to hold or transfer a video call. You can also use video conferencing services on the Cisco PGW 2200 Softswitch. These mid-call services are available when the Cisco PGW 2200 Softswitch coworks with the Cisco Unified Communications Manager (CUCM) and the Cisco Telepresence Solutions (CTS).
- Video call fallback to audio calls—If the Cisco PGW 2200 Softswitch cannot handle a video call due to video codec shortages or other reasons, it converts the video call into an audio call.

[Figure 1](#) shows a typical Cisco PGW 2200 Softswitch deployment in the Cisco TelePresence solution.

In this deployment, the CUCM uses SIP trunks to instruct the Cisco PGW 2200 Softswitch to set up video calls. The Cisco PGW 2200 Softswitch selects the trunk groups and the DBEs (Cisco ASR 1000 series DBE or Cisco 7600 DBE) based on their video capabilities. Then it uses the H.248 protocol to control the selected DBEs. Under instructions from the Cisco PGW 2200 Softswitch, the DBEs manage the Real-time Transport Protocol (RTP) streams that carry audio and video media between two Cisco TelePresence sites.

Figure 1 Typical Cisco PGW 2200 Softswitch Deployment in the Cisco TelePresence Solution



Benefits

The Enhanced Video Support feature broadens the scope of the Cisco PGW 2200 Softswitch product and makes way for its inclusion in video-based solutions, for example, the Cisco Telepresence solution.

Prerequisites

The Cisco PGW 2200 Softswitch must be running software Release 9.8(1). Prerequisites for this release can be found in the *Release Notes for the Cisco PGW 2200 Softswitch Release 9.8(1)* at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/release/note/rn981.html

Restrictions or Limitations

The Enhanced Video Support feature has the following limitations:

- Cisco PGW 2200 Softswitch supports SIP video calls only. H.323-to-SIP, or H.323-to-H.323 video calls are not supported. You must configure the EISUP profile property, VideoAllowed, to 0 for H.323 trunk groups.
- Cisco Voice Switch Service Module (VXSM) gateways cannot support video calls. You cannot make video calls using Cisco VXSM gateways in your network.
- The Cisco PGW 2200 Softswitch cannot transport SIP INFO messages for media control through the EISUP interfaces between the two Cisco PGW 2200 Softswitches.

Related Features and Technology

The H.248 Protocol–Phase 2 feature is related to this feature.

The H.248 Protocol–Phase 2 feature introduced audio anchoring for IP-to-IP gateway calls. This feature completes the media anchoring by adding video anchoring.



Note The Cisco PGW 2200 Softswitch supports video anchoring on DBEs.

See the *H.248 Protocol–Phase 2* feature module at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/feature/module/9.8_1_/h248-ph2.html

Related Documents

This document contains information that is strictly related to this feature. The documents that contain additional information related to the Cisco PGW 2200 Softswitch are at

http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd_products_support_series_home.html

Supported Standards, MIBs, and RFCs

Standards

The Enhanced Video Support feature supports the following standards:

- ITU-T H.248.1 05-2002—Gateway Control Protocol (Version 2)
- ITU-T H.248.1 V2 (2002) 03-2004—Corrigendum 1
- ITU-T H.248.2 (Annex F) 1/2000—Facsimile, Text Conversation and Call Discrimination Packages
- ITU-T H.248.3 (Annex G) 11/2000—User Interface Elements and Action Packages
- ITU-T H.248.3 (2000) 03-2004—Corrigendum 1
- ITU-T H.248.4 (Annex H) 11/2000—Transport over Stream Control Transmission Protocol (SCTP)
- ITU-T H.248.4 (2000) 03-2004—Corrigendum 1
- ITU-T H.248.5 (Annex I) 11/2000—Transport over ATM
- ITU-T H.248.6 (Annex J) 11/2000—Dynamic Tone Definition Package
- ITU-T H.248.7 (Annex K) 11/2000—Generic Announcement Package (determined text)
- ITU-T H.248.8 (Annex L) 11/2000—Error codes and service change reason description
- ITU-T H.248.8 (2002) 03/2004—Amendment 1
- ITU-T H.248.9 (Annex M1) 01/2005—Advanced Media Server Packages
- ITU-T H.248.10 (Annex M2) 07/2001—Media Gateway Resource Congestion Handling Package
- ITU-T H.248.12 (Annex M4) 07/2001—H.248 Packages for H.323 and H.324 Interworking
- ITU-T H.248.12 11/2002—Amendment 1
- ITU-T H.248.13 (Annex M5) 03/2002—Quality Alert Ceasing Package
- ITU-T H.248.14 (Annex M6) 03/2002—Inactivity Timer Package

- ITU-T H.248.15 (Annex M2) 03/2002—SDP H.248 package attribute
- ITU-T H.248.16 11/2002—Enhanced Digit Collection Packages and Procedures
- ITU-T H.248.16 (2002) 03-2004—Corrigendum 1
- ITU-T H.248.17 11/2002—Line Test Packages
- ITU-T H.248.17 (2002) 03/2004—Corrigendum 1
- ITU-T H.248.18 11/2002—Package for Support of Multiple Profiles
- ITU-T H.248.20 11/2002—The use of local and remote descriptors with H.221/H.223 multiplexing
- ITU-T H.248.22 07/2003—Shared Risk Group Package
- ITU-T H.248.22 (2003) 01/2004—Erratum 1
- ITU-T H.248.23 07/2003—Enhanced Alerting packages
- ITU-T H.248.23 (2003) 03/2004—Corrigendum 1
- ITU-T H.248.24 07/2003—Multi-frequency tone generation and detection packages
- ITU-T H.248.25 07/2003—Basic CAS packages
- ITU-T H.248.25 (2003) 03/2004—Corrigendum 1
- ITU-T H.248.26 07/2003—Enhanced analogue lines packages
- ITU-T H.248.26 (2003) 03/2004—Corrigendum 1
- ITU-T H.248.26 (2003) 01/2005—Amendment 1
- ITU-T H.248.27 07/2003—Supplemental tones packages
- ITU-T H.248.28 03/2004—International CAS packages
- ITU-T H.248.29 01/2005—International CAS Compelled Register Signaling Packages
- ITU-T H.248.30 03/2004—RTCP extended performance metrics packages
- ITU-T H.248.31 04/2004—Adaptive jitter buffer package
- ITU-T H.248.32 01/2005—Detailed congestion reporting package
- ITU-T H.248.33 01-2005—PCM frame spare bit package
- ITU-T H.248.37 09-2005—PCM frame spare bit package
- ETSI TS 102 333 V1.1.2 07-2004—Gate control protocol
- ETSI TS 283 018 V1.1.1 06-2006—Resource and admission control: H.248 profile for controlling by this feature.

You can find these standards at the ITU website.

<http://www.itu.int/ITU-T/>

Provisioning Tasks

This section describes the provisioning tasks for this feature.

To use this feature, you need to perform four main tasks:

1. Allow video call on ingress and egress SIP trunk groups and prohibit video calls on H.323 trunk groups.

2. Tell the Cisco PGW 2200 Softswitch the video capabilities on the DBEs that are associated with the SIP trunk groups.
3. Customize the three-level codec lists to affect the codec selection process. (This task is optional.)
4. Enable the audio and video anchoring function. (This function anchors audio and video streams on the DBEs.)

Here are the four main tasks:

- [Provisioning Video Call Admission Control, page 6](#)
- [Provisioning Audio and Video Capabilities of DBEs, page 6](#)
- [Provisioning Three-Level Codec Lists \(Optional\), page 6](#)
- [Provisioning Media Anchoring, page 8](#)

For complete provisioning samples, see the [“Provisioning Examples” section on page 8](#).

Provisioning Video Call Admission Control

There are two levels of video call admission control, dial plan level and trunk group level. By default, at the two levels, the Cisco PGW 2200 Softswitch allows video calls. No provisioning is needed.

Because the Cisco PGW 2200 Softswitch doesn't handle video calls that originate or end on H.323 trunk groups, you must prohibit video calls on H.323 trunk groups.

Prohibiting Video Calls on H.323 Trunk Groups

You set VideoAllowed to 0 in the EISUP profile for the H.323 trunk group to prohibit video calls.

```
mml> prov-ed:profile:name="EISUPprofile",videoallowed="0"
```

Provisioning Audio and Video Capabilities of DBEs

DBEs manage video streams for video calls. On the Cisco PGW 2200 Softswitch, you must indicate whether DBEs support video calls.

A gateway pool contain DBEs. To indicate that a DBE supports video calls, you must set the GatewayVideoSupport property to 1 in the profile of the gateway pool that contains the DBE.

```
mml> prov-add:PROFILE:NAME="GWPoolprofile",type="gwpoolprofile",
gatewayvideosupport="1"
```

Provisioning Three-Level Codec Lists (Optional)

The Cisco PGW 2200 Softswitch makes the codec selection on three levels.

The Cisco PGW 2200 Softswitch compares the codec lists that are provisioned at Level 1 (sigPath), Level 2 (trunk group) or Level 3 (dial plan). If there is more than one codec list provisioned, the highest level of codec provisioning is used.

You can customize the preferred audio and video codecs that DBEs use on the three levels. Make sure the codecs that you provision on the three levels are supported by the DBEs.

**Note**

The Cisco PGW 2200 Softswitch does not restrict usage of a certain codec. It is DBEs' codec capabilities that determine whether a certain codec is available for a call.

For details on the three-level codec selection, see the *CODEC and DTMF Preferential Routing Enhancements* feature module at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/feature/module/9.7.3/_FMdpL3co.html

**Note**

The three-level audio and video codec selections are not available for mid-calls (calls that are answered).

**Note**

The existing DBEs (Cisco ASR 1000 series DBE or Cisco 7600 DBE) do not support video codec transcoding. If the video codec of the incoming SDP mismatches the DBE video codec that is provisioned on the Cisco PGW 2200 Softswitch, the video call might fail. You can check the DBE video codec provisioning on the Cisco PGW 2200 Softswitch. Make sure your DBE video codec provisioning matches the video codec of the incoming SDP.

Provisioning a Level 1 Codec List

You set the properties, `GWDefaultAudioCodecString` and `GWDefaultVideoCodecString`, on the `H.248 sigPath` to specify the default audio and video codec list for DBEs.

```
mm1> prov-ed:sigsvccprop:name="h248-path",gwdefaultvideocodecstring="H264;H263;H261"
mm1> prov-ed:sigsvccprop:name="h248-path",gwdefaultaudiocodecstring="G.711u;G.711a"
```

Provisioning a Level 2 Codec List

You set the properties, `GWDefaultVideoCodecString` and `GWDefaultAudioCodecString`, in a SIP/EISUP profile to specify the default audio and video codec list for DBEs.

```
mm1> prov-ed:profile:name="SIPprofile",GWDefaultVideoCodecString="H263;H261;H264"
mm1> prov-ed:profile:name="SIPprofile",GWDefaultAudioCodecString="G.711u;G.711a"
```

Provisioning a Dummy Video Codec List

If you do not provision the Level 2 codec list, you can set the `DummyVideoCodecString` property in a SIP/EISUP profile. The Cisco PGW 2200 Softswitch uses the dummy video codecs in an H.248 add request when neither a remote SDP nor a local codec is provisioned.

```
mm1> prov-ed:profile:name="SIPprofile",DummyVideoCodecString="H263;H261;H264"
mm1> prov-ed:profile:name="SIPprofile",DummyAudioCodecString="G.711u;G.711a"
```

Provisioning a Level 3 Codec List

You provision the result type `CODEC` to specify the audio and video codec list on Level 3 (dial plan).

```
mm1> prov-add:codecstring:name="videocodec1",codecstring="H263;H261"
mm1> prov-add:codecstring:name="audiocodec1",codecstring="G.711u;G.711a"
mm1> numan-add:resulttable:custgrpId="T001",resulttype="CODEC",dw1="videocodec1",dw2="1",
dw3="1",setname="ra1",name="res1"
mm1> numan-add:resulttable:custgrpId="T001",resulttype="CODEC",dw1="audiocodec1",dw2="1",
dw3="0",setname="ra1",name="res1"
```



```
prov-add:trnkgrp:name="888",clli="NULL",svc="sip-path",type="SIP_IN",selseq="LIDL",qable="N"
```

```

; Add the SIP Profile for the Ingress SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:profile:type="SIPPROFILE",name="incoming",custgrpId="1111",gatewaypool="104",
insestiontimer="90",mgcdomain="10.0.49.117"
prov-add:trnkgrp:prof:name="888",profile="incoming"

```

```

; Provision the SIP Profile for the Ingress SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-ed:profile:name="incoming",videoallowed="1",unsolicitednotifiymethod="1",
anchormedia="3",anchorpolicy="1"
prov-ed:profile:name="incoming",gwdefaultaudiocodecstring="G.711u;G.711a"
prov-ed:profile:name="incoming",gwdefaultvideocodecstring="H264;H263;H261"
prov-ed:profile:name="incoming",dummyaudiocodecstring="G.711u;G.711a"
prov-ed:profile:name="incoming",dummyvideocodecstring="H264;H263;H261"

```

```

; Add the Egress SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:trnkgrp:name="5134",clli="NULL",svc="sip-path",type="IP_SIP",selseq="NULL",
qable="N"

```

```

; Add the SIP Profile for the Egress SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:profile:type="SIPPROFILE",name="out5134",custgrpId="1111",anchormedia="3",
gatewaypool="104",insestiontimer="90",mgcdomain="10.0.49.146"
prov-add:trnkgrp:prof:name="5134",profile="out5134"

```

```

; Provision the SIP Profile for the Egress SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-ed:profile:name="out5134",videoallowed="1",unsolicitednotifiymethod="1"
prov-ed:profile:name="out5134",gwdefaultaudiocodecstring="G.711u;G.711a"
prov-ed:profile:name="out5134",gwdefaultvideocodecstring="H264;H263;H261"
prov-ed:profile:name="out5134",dummyaudiocodecstring="G.711u;G.711a"
prov-ed:profile:name="out5134",dummyvideocodecstring="H264;H263;H261"

```

```

; Add the Route and the Route List
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:siprtrnkgrp:name="5134",url="10.0.50.134",version="2.0",cutthrough=3,svrerr=0,ext
support=1,siproxyport=5060
prov-add:rttrnk:name="rt51348",trnkgrpnum=5134,weightedtg="OFF"
prov-add:rtlist:name="rtlist51348",rtname="rt51348",distrib="OFF"

```

```

; Add the Result Set and the Results
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
numan-add:resultset:custgrpId="1111",name="rs51348"
numan-add:resulttable:custgrpId="1111",name="bmodccm5",resulttype="BMODDIG",dw1="1",dw2="3",
setname="rs51348"
numan-add:resulttable:custgrpId="1111",name="rtb51348",setname="rs51348",resulttype="ROUTE",
dw1="rtlist51348"

```

```

prov-add:codecstring:name="videocodec1",codecstring="H263;H261"
prov-add:codecstring:name="audiocodec1",codecstring="G.711u;G.711a"
numan-add:resultset:custgrpId="1111",name="rs513381"
numan-add:resulttable:custgrpId="1111",name="rescodecres133",resulttype="VIDEO_ALLOWED",
dw1="1",setname="rs513381"

```

```

numan-add:resulttable:custgrpId="1111",name="rstaudiocodec5133",resulttype="CODEC",
dw1="audiocodec1",dw2="0",dw3="0",setname="rs513381"
numan-add:resulttable:custgrpId="1111",name="rstvideocodec5133",resulttype="CODEC",
dw1="videocodec1",dw2="0",dw3="1",setname="rs513381"

; Add B-digit Modification
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
numan-add:bdigtrees:custgrpId="1111",callside="originating",digitstring="64666",setname="rs
51348"
numan-add:bdigtrees:custgrpId="1111",callside="originating",digitstring="64670",setname="rs
513381"

prov-cpy

```

Sample of a Provisioned Cisco 7600 DBE

The following data represents the provisioning of a Cisco 7600 DBE:

```

login timeout 0
hostname switch
boot system image:c76-sbck9-mzg.3.0.1_AS3_0_01.bin
timeout xlate 2147483

interface vlan 13
 ip address 10.120.10.2 255.255.0.0
 alias 10.120.10.3 255.255.0.0
 no shutdown

ft interface vlan 77
 ip address 77.0.0.4 255.0.0.0
 peer ip address 77.77.0.6 255.0.0.0
 no shutdown

ft peer 1
 heartbeat interval 300
 heartbeat count 30
 ft-interface vlan 77
ft group 1
 peer 1
 priority 127
 peer priority 126
 associate-context Admin
 inservice

ip route 0.0.0.0 0.0.0.0 10.120.10.1
ip route 10.74.0.0 255.255.0.0 10.74.56.129
ip route 64.0.0.0 255.255.0.0 10.74.56.129

username admin password 5 $1$faXJEFBj$TJR1Nx7sLPTi5BZ97v08c/ role Admin domain
default-domain
username www password 5 $1$UZIiwUk7$QMvYn1JASaycabrHkhGcS/ role Admin domain
default-domain

sbc sbc-zhuque
 dbe
  vdbe
   global
    dtmf-duration 200
    congestion-cleared 60
    congestion-threshold 80

```

```

unexpected-source-alerting
local-port 2944
control-address h248 ipv4 10.120.10.3
controller h248 1
    remote-address ipv4 10.0.4.6
    transport udp
controller h248 2
    remote-address ipv4 10.0.20.7
    transport udp
h248-profile gatecontrol
attach-controllers
media-address ipv4 10.120.10.3
location-id 1
media-timeout 30
overload-time-threshold 100
deact-mode normal
activate

```

Sample of a Provisioned Cisco ASR 1000 series DBE

The following data represents the provisioning of a Cisco ASR 1000 series DBE:

```

!
no issu config-sync policy bulk prc
upgrade fpd auto
version 12.2
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname ASR1000-3
!
boot-start-marker
boot-end-marker
!
vrf definition Mgmt-intf
!
    address-family ipv4
    exit-address-family
!
    address-family ipv6
    exit-address-family
!
logging buffered 64000 informational
enable password cisco
!
no aaa new-model
ip subnet-zero
ip tftp source-interface GigabitEthernet0
!
!
!
!
multilink bundle-name authenticated
mpls label protocol ldp
!
!
!
redundancy
mode none
no policy config-sync bulk prc reload

```

```

!
pseudowire-class pgw
  encapsulation l2tpv3
  protocol none
  ip local interface Loopback0
!
!
!
!
!
!
interface Loopback0
  ip address 2.2.2.2 255.255.255.0
!
interface SBC3
  ip address 33.33.37.1 255.255.255.0
!
interface FastEthernet0/0/0
  mtu 1530
  ip address 10.0.99.33 255.255.0.0
  negotiation auto
  mpls ip
  no cdp enable
!
interface FastEthernet0/0/1
  ip address 10.128.99.33 255.255.0.0
  negotiation auto
  no cdp enable
!
interface FastEthernet0/0/1.1
  no cdp enable
!
interface FastEthernet0/0/2
  no ip address
  shutdown
  duplex full
  negotiation auto
  no cdp enable
!
interface FastEthernet0/0/3
  no ip address
  shutdown
  negotiation auto
  no cdp enable
!
interface GigabitEthernet0
  ip address 10.74.48.149 255.255.255.224
  speed 1000
  duplex full
  negotiation auto
!
router ospf 1
  log-adjacency-changes
  network 0.0.0.0 255.255.255.255 area 0
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.0.100.111
ip route vrf Mgmt-intf 0.0.0.0 0.0.0.0 10.74.48.129
!
no ip http server
no ip http secure-server
!
logging 10.74.49.109

```

```
!  
snmp-server community public RO  
snmp-server community private RW  
snmp-server host 10.74.49.109 public  
!  
!  
!  
sbc pgw-ccb3 dbe  
  vdbe global  
    h248-inactivity-duration 6000  
    local-port 2946  
    control-address h248 ipv4 33.33.37.1  
    controller h248 1  
      remote-address ipv4 10.0.49.146  
      remote-port 2946  
    attach-controllers  
  location-id 1  
  media-address ipv4 33.33.37.1  
    port-range 16384 20000 voice  
    port-range 20001 65535 video  
  activate  
!  
!  
control-plane  
!  
!  
line con 0  
  stopbits 1  
line aux 0  
  stopbits 1  
line vty 0 4  
  password cisco  
  login  
!  
end
```

Cisco Unified Communications Manager Configuring Tips

This section provides CUCM provisioning tips for video calls. For these tips, you are assumed to be using the CUCM Administration page to provision CUCM.

These tips fall into three categories:

- Video part
 - Uncheck the **Media Resource Group List** check box under Device > Trunk.
 - Uncheck the **Media Termination Point Required** check box under Device > Trunk.
 - Choose **enabled** from the Video Capabilities drop-down list for the phone that uses video calls under Device > Phone.
- Audio part
 - If you want the calling party to hear music on hold (MOH) when either party holds the call, configure the media resource group list on both trunks and the phones.
- MOH server
 - Make sure an MOH server appears under Media Resources > Music On Hold Server
 - Make sure the Run Flag of the MOH server is set to Yes.

- Make sure that the status of MOH server is registered with the CUCM under Media Resources > Music On Hold Server. If it is in the registered status, navigate to Cisco Unified Serviceability page. Under Tools > Control Center – Feature Services, click the radio button of the Cisco IP Voice Media Streaming App and click **Start** at the bottom.
- By default, the MOH server is in the default group. All of the phones and trunks configured in the CUCM can use this MOH server. If you assign the MOH server to a media resource group which belongs to a media resource group list, only phones and trunks that are associated with that media resource group list can use the MOH server.

Software Changes for This Feature

The following sections describe software changes related to this feature:

- [Billing Interface, page 14](#)
- [Properties, page 14](#)
- [Result Types, page 15](#)

Billing Interface

This section lists the modified call detail record (CDR) data for this feature. For the other billing interface information of the Cisco PGW 2200 Softswitch, see the *Cisco PGW 2200 Softswitch Release 9 Billing Interface Guide*.

Modified Billing Interfaces

Initial Codec (Tag: 4207)

This tag identifies the initial codec used for the RTP stream. The initial codec is parsed from the SDP from SIP or MGCP. If the call is a video call, this tag also includes the video codec.

Final Codec (Tag: 4208)

This tag identifies the final codec used for the RTP stream. The final codec is parsed from the SDP from SIP or MGCP. If the call is a video call, this tag also includes the video codec.

The two tags are helpful when you are troubleshooting the codec selection for calls. You can find the initial and the final audio and video codecs for a call in these two tags.

Properties

This section describes new properties for this feature. For more information on other properties for the Cisco PGW 2200 Softswitch, see the *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

New Properties

[Table 1](#) describes the new properties for SIP, EISUP, and gateway pool profiles. You can find the provisioning examples of these properties in the [“Provisioning Tasks” section on page 5](#).

Table 1 ***New Properties in This Feature***

Property	Description
DummyVideoCodecString	<p>You use this property to specify the dummy video codec list. The Cisco PGW 2200 Softswitch uses the dummy video codecs in an H.248 add request when neither a remote SDP nor a local codec is provisioned. H.263, H.264, H.261, and H.263-1998 are all valid codec strings that can be included in the codec list. This property applies for DBEs only.</p> <p>Valid values: video codec names (1 to 140 characters) separated by semicolons (for example, H.263; H.264; H.261), with the maximum length being 140 characters.</p> <p>Default value: NULL.</p> <p>Dynamically reconfigurable: yes.</p>
GatewayVideoSupport	<p>You use this property to control whether a gateway pool supports video traffic.</p> <p>Valid values: boolean (0 = does not support, 1 = supports).</p> <p>Default value: 0.</p> <p>Dynamically reconfigurable: yes.</p>
GWDefaultVideoCodecString	<p>You use this property to specify an ordered series of codec choices for DBEs.</p> <p>Valid values: video codec names (1 to 140 characters) separated by semicolons (for example, H.263; H.264; H.261), with the maximum length being 140 characters.</p> <p>Default value: NULL.</p> <p>Dynamically reconfigurable: yes.</p>
VideoAllowed	<p>You use this property to specify whether the Cisco PGW 2200 Softswitch allows video calls on SIP or EISUP trunk groups.</p> <p>Valid values: boolean (0 = video calls not allowed, 1 = video calls allowed).</p> <p>Default value: 1.</p> <p>Dynamically reconfigurable: yes.</p>

Result Types

This section describes new and modified result types for this feature. For other result type definitions for the Cisco PGW 2200 Softswitch, see the *Cisco PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

New Result Types

[Table 2](#) gives the definition for the new result type in this feature.

Table 2 *New Result Type Definitions*

Result Number	Result Type	Dataword1	Dataword2	Dataword3	Dataword4	Analysis Points		Result Type Valid For			
						Intermediate	End Point	A-digit analysis	B-digit analysis	Cause	Pre-analysis
86	VIDEO_ALLOWED	Allows or prohibits video calls	0 (not used)	0 (not used)	0 (not used)	X		X	X		X

VIDEO_ALLOWED

The new result type VIDEO_ALLOWED is added for this feature. This result type enables the Cisco PGW 2200 Softswitch to allow or prohibit video calls at the dial plan level.

There are two levels of video call admission control, the dial plan level and the trunk group level. If video calls are allowed at the trunk group level but prohibited at the dial plan level, video calls are prohibited. If video calls are prohibited at the trunk group level but allowed at the dial plan level, video calls are prohibited. For information on call admission control at the trunk group level, see the [“Provisioning Video Call Admission Control”](#) section on page 6.

This result type provides you the flexibility to include video call admission control in the number analysis. For example, you can prohibit video calls whose B-numbers start with 909.

Dataword1 specifies whether the Cisco PGW 2200 Softswitch allows or prohibits video calls:

- 0—Prohibits video calls at the dial plan level
- 1—Allows video calls at the dial plan level

**Note**

If you do not provision the VIDEO_ALLOWED result type, the Cisco PGW 2200 Softswitch allows video calls at the dial plan level by default.

Modified Result Types

Table 3 gives the definition of the modified result type for this feature.

Table 3 Modified Result Type Definitions

Result Number	Result Type	Dataword1	Dataword2	Dataword3	Dataword4	Analysis Points		Result Type Valid For			
						Intermediate	End Point	A-digit analysis	B-digit analysis	Cause	Pre-analysis
47	CODEC	CodecStringName	Action	CodecStringType	0 (not used)	X		X	X	X	X

CODEC

This feature modifies the existing result type CODEC. Dataword3, CodecStringType, is added to indicate whether the codec string type is video or audio.

Dataword3 indicates the type of the codec string that Dataword1 contains:

- 0—Indicates that the codec string in Dataword1 is an audio codec string.
- 1—Indicates that the codec string in Dataword1 is a video codec string.

Troubleshooting the Feature

This section describes two troubleshooting procedures for this feature.

The first procedure is used if incoming video calls are rejected.

	Action	Description
Step 1	Check the gateway pool profile property, GatewayVideoSupport.	The GatewayVideoSupport property indicates whether or not the DBEs support video calls. Make sure you set the property to 1 (supports). For property details, see the “Properties” section on page 14 .
Step 2	Check the SIP/EISUP profile property, VideoAllowed, for both ingress and egress trunk groups.	The Cisco PGW 2200 Softswitch uses the VideoAllowed property to control the video call admission on a certain SIP or EISUP trunk group. Make sure you set the property to 1 (video calls allowed). For property details, see the “Properties” section on page 14 .
Step 3	Check the result type, VIDEO_ALLOWED, in the dial plan.	The Cisco PGW 2200 Softswitch uses the VIDEO_ALLOWED result type to control the video call admission at the dial plan level. If you provisioned this result type, make sure that you set it to 1 (video allowed). The Cisco PGW 2200 Softswitch allows the video calls at the dial plan level by default if you do not provision this result type in the dial plan. For property details, see the “Properties” section on page 14 .
Step 4	Check the video support configuration on the CUCM.	See the “Cisco Unified Communications Manager Configuring Tips” section on page 13 .

The second procedure is used if the video call has one-way audio, one-way video, or no voice at all.

	Action	Description
Step 1	Check connection between the DBE and the SIP end point (a Cisco TelePresence site or an IP phone).	Use the ping command to test the connection. If the ping action succeeds, the connection between the DBE and the SIP end point is good. If the ping action fails, proceed to Step 2 .
Step 2	Check the IP route configuration.	Check if you have correctly configured IP routes between the DBE and the SIP end point. See the user docs for Cisco ASR 1000 series DBE and Cisco 7600 DBE.

If you still have problems with this feature, get the MDL trace and contact the Cisco TAC.

For more information on operational tasks for the rest of the Cisco PGW 2200 Softswitch, see the *Cisco PGW 2200 Softswitch Release 9 Operations, Maintenance, and Troubleshooting Guide* at

http://www.cisco.com/en/US/docs/voice_ip_comm/pgw/9/maintenance/guide/omtguid.html

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

Glossary

Table 4 Acronym Expansions

Acronym	Expansion
CTS	Cisco Telepresence Solutions
CUCM	Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager)
DBE	data border element
NAT	network address translation
MOH	music on hold
PGW	PSTN gateway
RTP	Real-time Transport Protocol
SBE	session border element
SIP	Session Initiation Protocol
SPDM	service policy decision module

Table 4 **Acronym Expansions (continued)**

Acronym	Expansion
VPN	virtual private network
VXSM	Cisco Voice Switch Service Module

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