



Cisco PGW 2200 Softswitch Support of SIP P-Headers for 3GPP Feature Module

Document Release History

Publication Date	Comments
November 30, 2009	Initial release of document.

Feature History

Release	Modification
9.8(1)	The Support of SIP P-Headers for 3GPP feature is introduced on the Cisco PGW 2200 Softswitch software.

This document describes the Support of SIP P-Headers for 3GPP feature and includes the following sections:

- [Feature Description, page 2](#)
- [Supported Standards, MIBs, and RFCs, page 3](#)
- [XECfgParm.dat Configuration Tasks, page 4](#)
- [Provisioning Tasks, page 5](#)
- [Provisioning Examples, page 7](#)
- [Software Changes for This Feature, page 9](#)
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- [Obtaining Documentation and Submitting a Service Request, page 17](#)
- [P-Header Handling Details, page 17](#)
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Feature Description

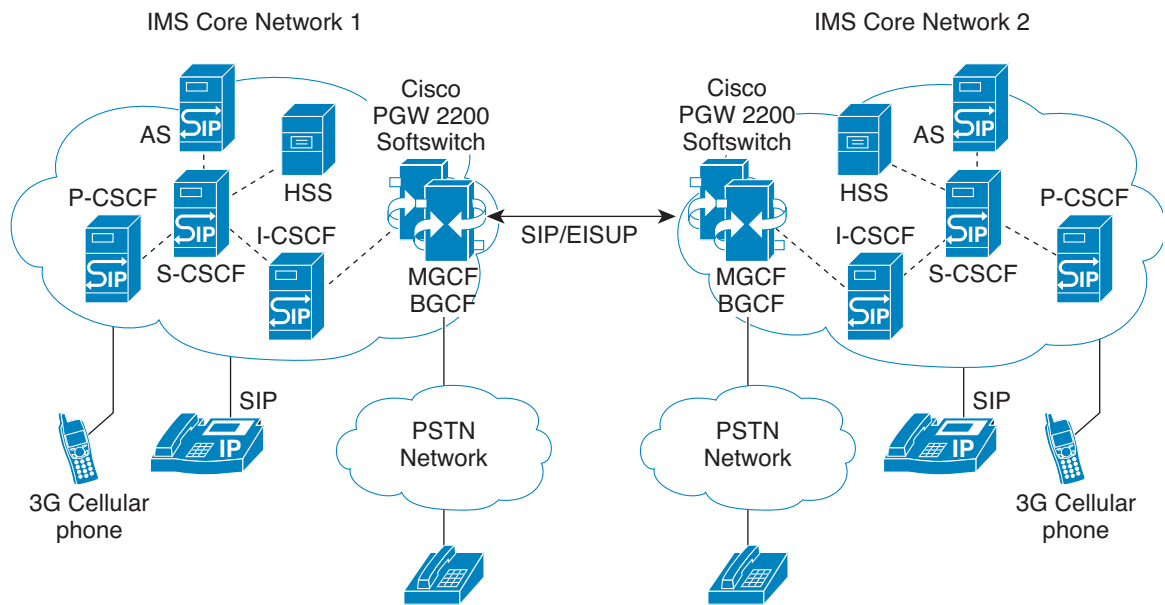
The Support of SIP P-Headers for 3GPP feature extends handling capabilities of SIP P-headers on the Cisco PGW 2200 Softswitch. The Cisco PGW 2200 Softswitch supports three more SIP P-headers for Third Generation Partnership Project (3GPP):

- P-Charging-Function-Addresses
- P-Charging-Vector
- P-Access-Network-Info

This feature enables service providers to correlate charging and access network information across multiple entities within a user-defined trusted zone. Service providers can use these two types of information saved as call detailed records (CDRs) for further analysis and actions.

Figure 1 shows a typical deployment for this feature. In this deployment, the Cisco PGW 2200 Softswitch interworks voice services between two IP Multimedia Subsystem (IMS) core networks. It also interworks voice service among PSTN networks and IMS core networks. Each Cisco PGW 2200 Softswitch pair functions as a Breakout Gateway Control Function (BGCF) server or a Media Gateway Controller Function (MGCF) server.

Figure 1 Typical Deployment for Support of SIP P-Headers for 3GPP



AS = Application Server
 BGCF = Breakout Gateway Control Function
 CSCF = Call Session Control Function
 EISUP = Enhanced ISDN User Part
 HSS = Home Subscriber Server
 I-CSCF = Interrogating-CSCF

IMS = IP Multimedia Subsystem
 MGCF = Media Gateway Control Function
 P-CSCF = Proxy-CSCF
 PSTN = Public Switched Telephone Network
 S-CSCF = Serving-CSCF
 SIP = Session Initiation Protocol

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Benefits

This feature provides the following benefits:

- Service providers can be aware of the type of access network that the call arrived from (for example, cell site identifier) and store these records.
- Service providers can match records from SIP devices (for example, proxies, softswitches, and application servers) for improved CDR or billing purposes.
- Service providers can supply to SIP devices (for example, proxies, softswitches, and application servers) in their network the IP address of the billing entity for a subscriber so that the subscriber is billed accordingly.

Prerequisites

The Cisco PGW 2200 Softswitch must be running software Release 9.8(1). Prerequisites for this release can be found in *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 Support of SIP P-Headers for 3GPP feature has the following restrictions and limitations:

- The Cisco PGW 2200 Softswitch supports the three SIP P-headers in SIP messages for session establishment only. These messages are
 - SIP messages: INVITE, 180 Ringing, 181 Call Is Being Forwarded, 183 Session Progress, and 200 OK
 - EISUP messages: initial address message (IAM), call progress message (CPG), address complete message (ACM), answer message (ANM), and connect message (CON)
- The Cisco PGW 2200 Softswitch does not support the three SIP P-headers for midcall services: call hold, call resume, and call transfers.

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

This section identifies the new or modified standards, MIBs, and RFCs that are supported by this feature.

Standards

This feature uses the following standards as references:

- 3GPP TS 24.229 Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP)
- 3GPP TS 32.260 IP Multimedia Subsystem (IMS) charging

MIBs

No new or modified MIBs are supported by this feature.

For more information on the MIBs used in the Cisco PGW 2200 Softswitch, see *Cisco PGW 2200 Softswitch MIBs* at

http://www.cisco.com/iam/PGW_MIBS/index.html

RFCs

This feature uses the following RFCs as references:

- RFC 3325 (describes SIP P-header extensions for 3GPP)
- RFC 3427 (describes the SIP change process)

XECfgParm.dat Configuration Tasks

This section contains the steps necessary for configuration of the Cisco PGW 2200 Softswitch software for this feature.

If you are installing and configuring the Cisco PGW 2200 Softswitch software on your system for the first time, use the procedures in *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide*, coming back to this section after you encounter the *.IOI and the *.ICID parameters in the XECfgParm.dat file.

Configuring the XECfgParm.dat File for This Feature

The XECfgParm.dat file contains execution environment parameters for the Cisco PGW 2200 Softswitch.

For information on configuration procedures, see the “[Changing XECfgParm.dat File Parameters in a Running Fault Tolerant System](#)” section of *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide*.

Configuration Examples

Here is an example of the *.IOI and the *.ICID parameter configurations in the XECfgParm.dat file:

```
*.IOI = home1.example
*.ICID = hostname.hostid
```

**Note**

You use the *.ICID to set the static part of the IMS Charging Identity (ICID). For detailed information on the *.ICID parameter, see the “[XECfgParm.dat Parameters](#)” section on page 9.

Provisioning Tasks

This section describes provisioning tasks for this feature.

**Note**

Make sure you have finished the configuration before you perform provisioning tasks for this feature. See the [“XECfgParm.dat Configuration Tasks” section on page 4](#).

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

1. Prepare trunk groups for use.
2. Customize zones by using different zone IDs.
3. Provision properties specific to the P-headers that you are going to use.
4. Attach profiles to the trunk groups.

Here are the four main tasks:

- [Provisioning Trunk Groups, page 5](#)
- [Provisioning Zone IDs, page 5](#)
- [Provisioning Properties Specific to P-Headers, page 6](#)
- [Attaching Profiles to SIP or EISUP Trunk Groups, page 7](#)

For complete provisioning samples, see the [“Provisioning Examples” section on page 7](#).

Provisioning Trunk Groups

You may use several different types of trunk groups in this feature. Use the following Man-Machine Language (MML) commands to provision trunk groups of different types:

- SIP

```
prov-add:trnkgrp:name="1000",svc="sipsigpath",type="SIP_IN"
prov-add:trnkgrp:name="2000",svc="sipsigpath",type="IP_SIP"
```
- Enhanced Integrated Services Digital Network (ISDN) User Part (EISUP)

```
prov-add:trnkgrp:name="5000",svc="eisupsigpath",type="IP"
```
- Signaling System 7 (SS7)

```
prov-add:trnkgrp:name="7000",svc="ss7sigpath",type="TDM_ISUP",selseq="ASC",qable="n"
```

Provisioning Zone IDs

You can customize multiple zones for this feature. Zone IDs identify zones.

If the originating part and the terminating part of a session have the same zone ID, the call scenario is a trusted scenario. If the originating part and the terminating part of a session have different zone IDs, the call scenario is an untrusted scenario. The Cisco PGW 2200 Softswitch handles the three SIP P-headers differently for trusted and untrusted scenarios.

**Note**

If the zone ID of a trunk group is set to wildcard, *, this zone ID matches any zone ID set on other trunk groups. That's to say, the trunk group with * as the zone ID has the same zone ID with any trunk groups whose zone IDs are set.

For detailed information on Cisco PGW 2200 Softswitch behavior for trusted and untrusted scenarios, see the [“P-Header Handling Details”](#) section on page 17.

Use the following MML commands to provision zone IDs in SIP and EISUP profiles:

- SIP

```
prov-add:profile:name="incomingSIP",type="SIPPROFILE",custgrpid="1111",zoneid="1"
prov-add:profile:name="outgoingSIP",type="SIPPROFILE",custgrpid="1111",zoneid="2"
```

- EISUP

```
prov-add:profile:name="eisup",type="EISUPPROFILE",custgrpid="1111",zoneid="2"
```

Provisioning Properties Specific to P-Headers

This feature require some property provisioning specific to P-headers. For detailed information on the properties, see the [“Properties”](#) section on page 15.

P-Charging-Function-Addresses

No specific provisioning required.

P-Charging-Vector

If you are going to use P-Charging-Vector header, run the following MML commands to provision the IOI and the MGCdomain properties:

**Note**

For SIP and EISUP trunk groups, you need to provision both the IOI and the MGCdomain properties. For SS7 trunk groups, provision the IOI property.

- SIP

```
prov-ed:profile:name="outgoingSIP",type="SIPPROFILE",ioi="home1.example",
mgcdomain="domainname.example"
```

- EISUP

```
prov-ed:profile:name="eisup",type="EISUPPROFILE",ioi="home1.example",
mgcdomain="domainname.example"
```

- SS7

```
prov-ed:trnkgrpprop:name="7000",ioi="home2.example"
```

P-Access-Network-Info

If you are going to use P-Access-Network-Info header, run the following MML commands to provision the AccNetInfo and AccNetInfoType properties for SIP, EISUP, or SS7 trunk groups:

- SIP

```
prov-ed:profile:name="incomingSIP",custgrpid="1111",
accnetinfo="utran-cell-id-3gpp=234151D0FCE12",accnetinfotype="3GPP-UTRAN-TDD"
```

- EISUP

```
prov-ed:profile:name="eisup",custgrpid="1111",
accnetinfo="utran-cell-id-3gpp=234151D0FCE11",accnetinfotype="3GPP-UTRAN-TDD"
```

- SS7

```
prov-ed:trnkgrpprop:name="7000",accnetinfo="info=utran-cell-id-3gpp=00000000",
accnetinfotype="ADSL"
```

Attaching Profiles to SIP or EISUP Trunk Groups

After you finish provisioning P-header specific properties, you can attach the profiles to SIP or EISUP trunk groups. This task is for SIP and EISUP trunk groups only.

Use the following commands to attach profiles to SIP or EISUP trunk groups.

- SIP

```
prov-add:trnkgrpprof:name="1000",profile="incomingSIP"
prov-add:trnkgrpprof:name="2000",profile="outgoingSIP"
```

- EISUP

```
prov-add:trnkgrpprof:name="5000",profile="eisup"
```

Provisioning Examples

This section provides provisioning examples for this feature. Additional provisioning examples for the Cisco PGW 2200 Softswitch can be found in *Cisco PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

```

; Start a New Provisioning Session
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-sta::srcver="new",dstver="pheader-prov"

; Add OPC, DPC, and External Nodes (ITP and AS5400)
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:opc:name="m3ua-opc",desc="own point code",netaddr="3.3.3",netind=2,type="trueopc"
prov-add:dpc:name="m3ua-dpc",desc="TDM switch", netaddr="3.4.3",netind=2
prov-add:extnode:name="va-2651-12",type="ITP",isdnsigtype="N/A",group=1,desc="M3UA SS7"
prov-add:extnode:name="va-5350-6",type="AS5400",group=0,desc="m3ua mgcp"
prov-add:sgp:name="m3ua-sgp1",extnode="va-2651-12"

; Add an SS7 Signaling Path
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;

```

```

prov-add:m3uaroute:name="m3uarte1", desc=" ", opc="m3ua-opc", dpc="m3ua-dpc",
extnode="va-2651-12"
prov-add:m3uakey:name="m3uakey1", desc=" ", routingcontext=21, si="ISUP", networkappearance=1,
opc="m3ua-opc"
prov-add:ss7path:name="ss7sigpath", mdo="Q761_BASE", custgrpid="1111", side="network",
m3uakey="m3uakey1", dpc="m3ua-dpc"
prov-add:association:name="m3ua-assoc1", extnode=" ", sgp="m3ua-sgp1", type="M3UA",
ipaddr1="IP_Addr1", port=2901, peeraddr1="192.0.2.10", peerport=2901

-----
; Add an SS7 Trunk Group and Trunks
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:trkgrp:name="7000", type="TDM_ISUP", svc="ss7sigpath", selseq="ASC", qable="N"
prov-ed:trkgrpprop:name="7000", custgrpid="1111"
prov-add:mgcppath:name="mgcpsigpath", extnode="va-5350-6"
prov-add:iplnk:name="mgcp-iplnk2", svc="mgcpsigpath", ipaddr="IP_Addr1",
peeraddr="192.0.2.20", port=2427, peerport=2427
prov-add:switchtrnk:name="1", trkgrpnum="7000", span="ffff", cic=1, cu="va-5350-6",
spansize=31, endpoint="s7/ds1-0/1@sh-5400-300"

-----
; Add an External Node (Cisco PGW 2200 Softswitch)
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:extnode:name="sh-victory", desc="eisup extnode of sh-vxpolo", type="MGC",
isdnsigtype="N/A", group=0

-----
; Add a SIP Signaling Path
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:sipath:name="sipsigpath", desc="SIP path", mdo="IETF_SIP"
prov-add:siplnk:name="sip-link", desc="SIP link", svc="sipsigpath",
ipaddr="Virtual_IP_Addr1", port=5060, pri=1

-----
; Add an EISUP Signaling Path
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:eisuppath:name="eisupsigpath", desc="eisup sigpath to sh-victory",
extnode="sh-victory", custgrpid="1111"
prov-add:iplnk:name="iplnk-victory", desc="EISUP IP link to PGW sh-victory",
svc="eisupsigpath", ipaddr="IP_Addr1", port=8005, peeraddr="192.0.2.30", peerport=8005, pri=1

-----
; Add SIP and EISUP Trunk Groups
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:trkgrp:name="1000", svc="sipsigpath", type="SIP_IN"
prov-add:trkgrp:name="2000", svc="sipsigpath", type="IP_SIP"
prov-add:siprttrkgrp:name="2000", url="open-ims.example", srvrr=0, sipproxypport=5060,
version="2.0", cutthrough=1, extsupport=1

prov-add:trkgrp:name="5000", svc="eisupsigpath", type="IP"

-----
; Provision Properties Specific to P-Headers for EISUP Trunk Groups
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:profile:name="eisup", type="EISUPPROFILE",
accnetinfo="utran-cell-id-3gpp=234151D0FCE11", accnetinfotype="3GPP-UTRAN-TDD",
custgrpid="1111", ioi="home1.example", mgcdomain="domainname.example", zoneid="2"

-----
; Provision Properties Specific to P-Headers for the Incoming SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:profile:name="incomingSIP", type="SIPPROFILE",
accnetinfo="utran-cell-id-3gpp=234151D0FCE12", accnetinfotype="3GPP-UTRAN-TDD",
custgrpid="1111", ioi="home1.example", mgcdomain="domainname.example", zoneid="1"

```



```

; Provision Properties Specific to P-Headers for the Outgoing SIP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:profile:name="outgoingSIP",type="SIPPROFILE",
accnetinfo="utran-cell-id-3gpp=234151D0FCE13",accnetinfotype="3GPP-UTRAN-TDD",
custgrpid="1111",ioi="home1.example",mgcdomain="domainname.example",zoneid="2"

; Provision Properties Specific to P-Headers for the SS7 Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-ed:trnkrpprop:name="7000",ioi="home2.example",accnetinfo="utran-cell-id-3gpp=0000000
0",accnetinfotype="ADSL"

; Attach the EISUP Profile to the EISUP Trunk Group
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:trnkrpprof:name="5000",profile="eisup"

; Attach SIP Profiles to Incoming and Outgoing SIP Trunk Groups
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-add:trnkrpprof:name="1000",profile="incomingSIP"
prov-add:trnkrpprof:name="2000",profile="outgoingSIP"

; End the Provisioning Session
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
prov-dply

```

Software Changes for This Feature

The following sections contain software changes related to this feature:

- [XECfgParm.dat Parameters, page 9](#)
- [Billing Interface, page 10](#)
- [Properties, page 15](#)

XECfgParm.dat Parameters

The XECfgParm.dat file configuration parameters added for this feature are in [Table 1](#). For information on the other XECfgParm.dat parameters, see *Cisco PGW 2200 Softswitch Release 9.8 Software Installation and Configuration Guide*.

Table 1 XECfgParm.dat Configuration Parameters Added for This Feature

Configuration Parameter	Definition
*.IOI	Specifies Inter-Operator Identifier (IOI) of the originating and terminating networks. Valid values: a string or none. Default value: none.
*.ICID	The Cisco PGW 2200 Softswitch generates the icid-value parameter in the P-Charging-Vector header. The icid-value parameter is composed of two parts, the static and the dynamic part. Users specify the static part in this property. The Cisco PGW 2200 Softswitch automatically generates the dynamic part. It is recommended that users provision <i>hostname.hostid</i> for this property. See the “ Configuration Examples ” section on page 4. Valid values: a string or none. Default value: none.

Billing Interface

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

This feature adds the following new CDRs:

- [Originating P-Charging-Function-Addresses Header \(Tag: 4114\)](#), page 11
- [Terminating P-Charging-Function-Addresses Header \(Tag: 4115\)](#), page 11
- [Originating P-Charging-Vector orig-IOI \(Tag: 4116\)](#), page 11
- [Originating P-Charging-Vector term-IOI \(Tag: 4117\)](#), page 12
- [Terminating P-Charging-Vector orig-IOI \(Tag: 4118\)](#), page 12
- [Terminating P-Charging-Vector term-IOI \(Tag: 4119\)](#), page 12
- [Originating P-Charging-Vector ICID-value \(Tag: 4120\)](#), page 13
- [Terminating P-Charging-Vector ICID-value \(Tag: 4121\)](#), page 13
- [Ingress Originating P-Access-Network-Info Header \(Tag: 4122\)](#), page 13
- [Egress Originating P-Access-Network-Info Header \(Tag: 4123\)](#), page 14
- [Ingress Terminating P-Access-Network-Info Header \(Tag: 4124\)](#), page 14
- [Egress Terminating P-Access-Network-Info Header \(Tag: 4125\)](#), page 14

Originating P-Charging-Function-Addresses Header (Tag: 4114)

Table 2 *Originating P-Charging-Function-Addresses Header*

Name: Originating P-Charging-Function-Addresses Header	Tag: 4114	Source: MDL ¹ /Engine
Description/Purpose: Contains the information of the P-Charging-Function-Addresses header at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with addresses for CCF ² and ECF ³ , and generic parameters combined together.		
Extended Data Value: None.		
General Information: Used in the following CDB ⁴ records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

1. MDL = Message Define Language.
2. CCF = Charging Collection Function.
3. ECF = Event Charging Function.
4. CDB = call detail block.

Terminating P-Charging-Function-Addresses Header (Tag: 4115)

Table 3 *Terminating P-Charging-Function-Addresses Header*

Name: Terminating P-Charging-Function-Addresses Header	Tag: 4115	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Function-Addresses header at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with addresses for CCF and ECF, and generic parameters combined together.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Originating P-Charging-Vector orig-IOI (Tag: 4116)

Table 4 *Originating P-Charging-Vector orig-IOI*

Name: Originating P-Charging-Vector orig-IOI	Tag: 4116	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector orig-IOI at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the orig-IOI parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Originating P-Charging-Vector term-IOI (Tag: 4117)

Table 5 *Originating P-Charging-Vector term-IOI*

Name: Originating P-Charging-Vector term-IOI	Tag: 4117	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector term-IOI at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the term-IOI parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Terminating P-Charging-Vector orig-IOI (Tag: 4118)

Table 6 *Terminating P-Charging-Vector orig-IOI*

Name: Terminating P-Charging-Vector orig-IOI	Tag: 4118	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector orig-IOI at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the orig-IOI parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Terminating P-Charging-Vector term-IOI (Tag: 4119)

Table 7 *Terminating P-Charging-Vector term-IOI*

Name: Terminating P-Charging-Vector term-IOI	Tag: 4119	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector term-IOI at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the term-IOI parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Originating P-Charging-Vector ICID-value (Tag: 4120)

Table 8 *Originating P-Charging-Vector ICID-value*

Name: Originating P-Charging-Vector ICID-value	Tag: 4120	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector ICID-value at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the ICID-value parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Terminating P-Charging-Vector ICID-value (Tag: 4121)

Table 9 *Terminating P-Charging-Vector ICID-value*

Name: Terminating P-Charging-Vector ICID-value	Tag: 4121	Source: MDL/Engine
Description/Purpose: Contains the information of the P-Charging-Vector ICID-value at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string of the ICID-value parameter value in the P-Charging-Vector header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Ingress Originating P-Access-Network-Info Header (Tag: 4122)

Table 10 *Ingress Originating P-Access-Network-Info Header*

Name: Ingress Originating P-Access-Network-Info Header	Tag: 4122	Source: MDL/Engine
Description/Purpose: Contains the originating information of the P-Access-Network-Info header at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with access-type and access-info parameter values in the P-Access-Network-Info header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Egress Originating P-Access-Network-Info Header (Tag: 4123)

Table 11 *Egress Originating P-Access-Network-Info Header*

Name: Egress Originating P-Access-Network-Info Header	Tag: 4123	Source: MDL/Engine
Description/Purpose: Contains the originating information of the P-Access-Network-Info header at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with access-type and access-info parameter values in the P-Access-Network-Info header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Ingress Terminating P-Access-Network-Info Header (Tag: 4124)

Table 12 *Ingress Terminating P-Access-Network-Info Header*

Name: Ingress Terminating P-Access-Network-Info Header	Tag: 4124	Source: MDL/Engine
Description/Purpose: Contains the terminating information of the P-Access-Network-Info header at the originating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with access-type and access-info parameter values in the P-Access-Network-Info header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Egress Terminating P-Access-Network-Info Header (Tag: 4125)

Table 13 *Egress Terminating P-Access-Network-Info Header*

Name: Egress Terminating P-Access-Network-Info Header	Tag: 4125	Source: MDL/Engine
Description/Purpose: Contains the terminating information of the P-Access-Network-Info header at the terminating side.		
Format: IA5	Length in Octets: 1 to 256	
Data Value: A complete string with access-type and access-info parameter values in the P-Access-Network-Info header.		
Extended Data Value: None.		
General Information: Used in the following CDB records: 1010 (setup), 1020, 1030 (aborted), 1110 (end of call).		
Cisco PGW 2200 Softswitch Release: Release 9.8 or later.		

Properties

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

New Properties

[Table 14](#) describes the new properties for this feature.

Table 14 *New Properties for the Support of SIP P-Headers for 3GPP Feature*

Property	Description
AccNetInfo	<p>Indicates the access information of the P-Access-Network-Info header. This property can be provisioned on a trunk group, in a SIP or EISUP profile, or a domain profile.</p> <p>Valid values: string (1 to 63 characters) or none.</p> <p>Default value: none.</p> <p>Dynamically reconfigurable: yes.</p>
AccNetInfoType	<p>Indicates the access type of the P-Access-Network-Info header. This property can be provisioned on a trunk group, in a SIP or EISUP profile, or a domain profile.</p> <p>Valid values: string (1 to 63 characters) or none.</p> <p>Default value: none.</p> <p>Dynamically reconfigurable: yes.</p>
IOI	<p>Specifies the IOI for a trunk group. This property overrides the *.IOI parameter value in the XECfgParm.dat file. This property can be provisioned on a trunk group, in a SIP or EISUP profile, or a domain profile.</p> <p>Valid values: string (1 to 63 characters) or none.</p> <p>Default value: none.</p> <p>Dynamically reconfigurable: yes.</p>
ZoneID	<p>Specifies the administrative zone that a trunk group belongs to. The wildcard, *, is supported as the zone ID. If the property value is set to * for a trunk group, the zone ID of this trunk group matches any zone ID set on other trunk groups. This property can be provisioned in a SIP or EISUP profile, or a domain profile.</p> <p>Valid values: string (1 to 63 characters) or none.</p> <p>Default value: none.</p> <p>Dynamically reconfigurable: yes.</p>

Modified Properties

Table 15 describes the modified properties for this feature.

Table 15 Modified Properties for the Support of SIP P-Headers for 3GPP Feature

Property	Description
MGCdomain	<p>The Cisco PGW 2200 Softswitch uses the domain name provisioned in this property in SIP messages. In this feature, this property is extended. The Cisco PGW 2200 Softswitch also uses this property to construct the icid-generated-at parameter of the P-Charging-Vector header in SIP and EISUP messages.</p> <p>This property can be provisioned in SIP and EISUP profiles.</p> <p>Valid values: any valid domain name (1 to 256 characters) or none.</p> <p>Default value: none.</p> <p>Dynamically reconfigurable: yes.</p>

Troubleshooting the Feature

This section describes two troubleshooting situations for this feature:

- In the trusted mode (the incoming trunk group and the outgoing trunk group have the same zone ID), the Cisco PGW 2200 Softswitch SIP response message does not contain the term-IOI parameter in the P-Charging-Vector header.

	Action	Description
Step 1	Check the zone ID of the incoming and the outgoing trunk groups.	<p>Make sure the incoming and the outgoing trunk groups have the same zone ID.</p> <p>Note The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.</p>
Step 2	Check the SIP message sent from the SIP peer.	Make sure the SIP message sent from the SIP peer has the term-IOI parameter in the P-Charging-Vector header.

- Outgoing SIP messages don't contain access network information.

	Action	Description
Step 1	Check the zone ID of the incoming and the outgoing SIP trunk groups.	<p>If the incoming and the outgoing SIP trunk group have the same zone ID, this is a trusted call scenario. Otherwise, this is an untrusted call scenario. Go to Step 2 if it is a trusted call scenario. Otherwise, go to Step 3.</p> <p>Note The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.</p>

	Action	Description
Step 2	Check incoming SIP messages.	Make sure incoming SIP messages contain the P-Access-Network-Information header.
Step 3	Check the AccNetInfoType and the AccNetInfo properties provisioned on the incoming SIP trunk group.	Make sure the AccNetInfoType and the AccNetInfo properties are provisioned on the incoming SIP trunk group. For property details, see the “ Properties ” section on page 15.

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.

P-Header Handling Details

This section contains additional information which may be useful for you. You can provision certain properties specific to P-headers to meet your network requirements.

Heavy vertical lines in the tables separate the input from the output. In each table, different combinations of input on the left to the heavy vertical line have corresponding output on the right.

[Table 16](#) to [Table 17](#) give handling details for the P-Charging-Function-Addresses header. [Table 18](#) to [Table 20](#) give handling details for the P-Charging-Vector header. [Table 21](#) to [Table 23](#) give handling details for the P-Access-Network-Info header.

Table 16 Handling the P-Charging-Function-Addresses Header in SIP or EISUP Request Messages

Incoming Message Has PCFA ¹	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Save in CDR (Orig. Side)	P-Header in Outgoing Request Messages	Save in CDR (Term. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Any	No	—	No
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	Discard	No
Yes	SIP or EISUP	Not set	SIP or EISUP	Any	No	Discard	No
Yes	SIP or EISUP	Set	SIP or EISUP	Same ² with the zone ID of the trunk group on the originating side	Yes	Transmit	Yes

Table 16 Handling the P-Charging-Function-Addresses Header in SIP or EISUP Request Messages (continued)

Incoming Message Has PCFA ¹	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Save in CDR (Orig. Side)	P-Header in Outgoing Request Messages	Save in CDR (Term. Side)
Yes	SIP or EISUP	Set	SIP or EISUP	Different than the zone ID of the trunk group on the originating side	Yes	Discard	No
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	Discard	No
No	any	Either set or not set	any	Either set or not set	No	—	No

1. PCFA = P-Charging-Function-Addresses.

2. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Table 17 Handling the P-Charging-Function-Addresses Header in SIP or EISUP Response Messages

Response Message Has PCFA	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in Outgoing Response Messages	Save in CDR (Orig. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Use saved PCFA	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Not set	—	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Same ¹ with the zone ID of the trunk group on the term. side	Yes	Transmit back PCFA received from the term. side	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	No	Use saved PCFA from incoming request messages	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different than that of the trunk group on the term. side	Yes	Use saved PCFA from incoming request messages	Yes
No	SIP or EISUP	Set	SIP or EISUP	Set	No	Use saved PCFA from incoming request messages	Yes
No	SIP or EISUP	Not set	SIP or EISUP	Set	No	Use saved PCFA from incoming request messages	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Not set	No	none	No

Table 17 Handling the P-Charging-Function-Addresses Header in SIP or EISUP Response Messages (continued)

Response Message Has PCFA	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in Outgoing Response Messages	Save in CDR (Orig. Side)
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	none	No
No	SIP or EISUP	Set	SIP or EISUP	Not set	No	none	No
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	No	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Table 18 Handling the P-Charging-Vector Header in SIP INVITE or EISUP IAM¹ Messages

Incoming Message Has PCV ²	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Save in CDR (Orig. Side)	P-Header in the Outgoing SIP INVITE or EISUP IAM Messages	Save in CDR (Term. Side)
No	SIP or EISUP	Not set	SIP or EISUP	Not set	None	None	No
No	SIP or EISUP	Not set	SIP or EISUP	Set	None	Build new outgoing P-header from configuration information	Yes
No	SIP or EISUP	Set	SIP or EISUP	Not set	Yes (save new P-header built on user provisioning)	None	No
No	SIP or EISUP	Set	SIP or EISUP	Same ³ with the zone ID of the trunk group on the orig. side	Yes (save new P-header built on user provisioning)	Transmit P-header created on the orig. side	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the orig. side	Yes (save new P-header built on user provisioning)	Build new outgoing P-header from configuration information	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Build new outgoing P-header from configuration information	Yes

Table 18 Handling the P-Charging-Vector Header in SIP INVITE or EISUP IAM¹ Messages (continued)

Incoming Message Has PCV ²	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Save in CDR (Orig. Side)	P-Header in the Outgoing SIP INVITE or EISUP IAM Messages	Save in CDR (Term. Side)
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the orig. side	Yes	Build new outgoing P-header from configuration information	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Same with the zone ID of the trunk group on the orig. side	Yes	Transmit	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Build new outgoing P-header from configuration information	Yes
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	None	No
No	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes (save new P-header built on user provisioning)	None	No

1. IAM = initial address message.

2. PCV = P-Charging-Vector.

3. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Table 19 Handling the P-Charging-Vector Header in First Response Messages

Response Message Has PCV	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing First Response Messages	Save in CDR (Orig. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Append the term-IOI to the saved PCV	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Not set	—	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Same ¹ with the zone ID of the trunk group on the term. side	Yes	Transmit back PCV received on the term. side	Yes
No	SIP or EISUP	Set	SIP or EISUP	Same with the zone ID of the trunk group on the term. side	None	None	No

Table 19 Handling the P-Charging-Vector Header in First Response Messages (continued)

Response Message Has PCV	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing First Response Messages	Save in CDR (Orig. Side)
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Append the term-IOI to the saved PCV	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	Yes	Append the term-IOI to the saved PCV	Yes
No	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	None	Append the term-IOI to the saved PCV	Yes
No	SIP or EISUP	Not set	SIP or EISUP	Set	None	Append the term-IOI to the saved PCV	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	None	No
No	SIP or EISUP	Set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	No	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

**Note**

For SIP, first response messages include 180 Ringing, 183 Session Progress, and 200 OK only.

Table 20 Handling the P-Charging-Vector Header in Afterwards Response Messages

Response Message Has PCV	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing Afterwards Response Messages	Save in CDR (Orig. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Use PCV saved at the orig. side	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Same ¹ with the zone ID of the trunk group on the term. side	Yes	Transmit back PCV received from the term. side	Yes

Table 20 Handling the P-Charging-Vector Header in Afterwards Response Messages (continued)

Response Message Has PCV	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing Afterwards Response Messages	Save in CDR (Orig. Side)
No	SIP or EISUP	Set	SIP or EISUP	Same with the zone ID of the trunk group on the term. side	None	None	No
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Use PCV saved at the orig. side	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	Yes	Use PCV saved at the orig. side	Yes
No	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	None	Use PCV saved at the orig. side	Yes
No	SIP or EISUP	Not set	SIP or EISUP	Set	None	Use PCV saved at the orig. side	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	None	No
No	SIP or EISUP	Set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	No	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Table 21 Handling the P-Access-Network-Info Header in SIP INVITE or EISUP IAM Messages

Incoming Message Has PANI ¹	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Save in CDR (Orig. Side)	P-Header in the Outgoing Request Messages	Save in CDR (Term. Side)
Yes	SIP or EISUP	Set	SIP or EISUP	Same ² with the zone ID of the trunk group on the orig. side	Yes	Transmit	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the orig. side	Yes	Generate new PANI based on user provisioning	Yes
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Generate new PANI based on user provisioning	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Generate new PANI based on user provisioning	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Not set	—	None	None
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	No	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. PANI = P-Access-Network-Information.

2. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Table 22 Handling the P-Access-Network-Info Header in First Response Messages

Response Message Has PANI	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing First Response Messages	Save in CDR (Orig. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Generate new PANI based on user provisioning/Save	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Same ¹ with the zone ID of the trunk group on the term. side	Save	Transmit back PANI received from the term. side/Save	Yes
No	SIP or EISUP	Set	SIP or EISUP	Same with the zone ID of the trunk group on the term. side	None	None	No

Table 22 Handling the P-Access-Network-Info Header in First Response Messages (continued)

Response Message Has PANI	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing First Response Messages	Save in CDR (Orig. Side)
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Generate new PANI based on user provisioning/Save	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	Save	Generate new PANI based on user provisioning/Save	Yes
No	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	None	Generate new PANI based on user provisioning/Save	Yes
No	SIP or EISUP	Not set	SIP or EISUP	Set	None	Generate new PANI based on user provisioning/Save	Yes
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	No	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.



Note For SIP, first response messages include 180 Ringing, 183 Session Progress and 200 OK only.

Table 23 Handling the P-Access-Network-Info Header in Afterwards Response Messages

Response Message Has PANI	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing Afterwards Response Messages	Save in CDR (Orig. Side)
—	Neither SIP nor EISUP	—	SIP or EISUP	Set	—	Use PANI saved at the orig. side	Yes
Yes	SIP or EISUP	Set	SIP or EISUP	Same ¹ with the zone ID of the trunk group on the term. side	Yes	Transmit back PANI received from the term. side	Yes
No	SIP or EISUP	Set	SIP or EISUP	Same with the zone ID of the trunk group on the term. side	None	None	No
Yes	SIP or EISUP	Not set	SIP or EISUP	Set	None	Use PANI saved at the orig. side	Yes

Table 23 Handling the P-Access-Network-Info Header in Afterwards Response Messages (continued)

Response Message Has PANI	Trunk Group Type (Term. Side)	Trunk Group Zone ID (Term. Side)	Trunk Group Type (Orig. Side)	Trunk Group Zone ID (Orig. Side)	Save in CDR (Term. Side)	P-Header in the Outgoing Afterwards Response Messages	Save in CDR (Orig. Side)
Yes	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	Yes	Use PANI saved at the orig. side	Yes
No	SIP or EISUP	Set	SIP or EISUP	Different from the zone ID of the trunk group on the term. side	None	Use PANI saved at the orig. side	Yes
No	SIP or EISUP	Not set	SIP or EISUP	Set	None	Use PANI saved at the orig. side	Yes
—	Neither SIP nor EISUP	—	SIP or EISUP	Not set	—	None	No
Yes	SIP or EISUP	Not set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	SIP or EISUP	Not set	Yes	None	No
No	SIP or EISUP	Set	SIP or EISUP	Not set	None	None	No
Yes	SIP or EISUP	Set	Neither SIP nor EISUP	—	Yes	No	No
Yes	SIP or EISUP	Not set	Neither SIP nor EISUP	—	Yes	No	No
No	SIP or EISUP	Any	Neither SIP nor EISUP	—	No	No	No

1. The wildcard, *, can be set as a zone ID. The wildcard zone ID is the same with any zone ID of a trunk group.

Glossary

Table 24 Acronym Expansions

Acronym	Expansion
3GPP	3rd-Generation Partnership Project
ACM	address complete message
ANM	answer message
AS	Application Server
BGCF	Breakout Gateway Control Function
CDB	call detail block
CDR	call detail record
CON	connect message

Table 24 Acronym Expansions (continued)

Acronym	Expansion
CPG	call progress message
CSCF	Call Session Control Function
EISUP	Enhanced ISDN User Part
HSS	Home Subscriber Server
I-CSCF	Interrogating-CSCF. See CSCF.
IAM	initial address message
ICID	IMS Charging Identity
IMS	IP Multimedia Subsystem
IOI	Inter Operator Identifiers
MGCF	Media Gateway Controller Function
MML	Man-Machine Language
P-CSCF	Proxy-CSCF. See CSCF.
PANI	P-Access-Network-Information
PCFA	P-Charging-Function-Addresses
PCV	P-Charging-Vector
PGW	PSTN Gateway
PLMN	Public Land Mobile Network
S-CSCF	Serving-CSCF. See CSCF.
SIP	Session Initiation Protocol
SS7	Signaling System 7
UA	user agent

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