



P-CSCF Support

The Proxy-Call Session Control Function (P-CSCF) is the first contact point for the users of the Information Management System (IMS). The P-CSCF functions as a proxy server for the user equipment; all SIP signaling traffic to and from the user equipment must go through the P-CSCF. The P-CSCF validates and then forwards requests from the user equipment and then processes and forwards the responses to the user equipment.

The P-CSCF can also function as a user agent in the context of the SIP operating procedures. If an abnormal condition arises in a session, the P-CSCF can unilaterally release the session for the user equipment. The user agent role can also be used to generate independent SIP messages required during the registration, such as sending the user's public and private identities. There may be more than one P-CSCF in the operator's network based on survivability, number of users, expected traffic, and network topology. The P-CSCF can be also referred to as the SIP server.

To implement the Proxy-CSCF support on the SBC, users must select the Inherit Profile for a SIP adjacency. The three available Inherit Profiles are:

- Standard Non-IMS Profile
- P-CSCF Access Profile
- P-CSCF Core Profile

Each of these profiles groups a set of IMS-related configuration fields, which can be applied across multiple adjacencies.

If a valid profile is configured, then this profile is applied to an adjacency that does not have a profile configured. If a profile is already selected for a SIP adjacency, then that profile is used instead of the entity's profile.

Feature History for P-CSCF Support

Release	Modification
Release 3.5.1	This feature was introduced on Cisco XR 12000 Series Router.
Release 3.6.0	No modification.

Contents

This module contains the following sections:

- [Restrictions for Implementing P-CSCF Support, page SBC-494](#)
- [Information About P-CSCF Support, page SBC-494](#)

- [Implementing P-CSCF Support, page SBC-495](#)
- [Additional References, page SBC-497](#)

Restrictions for Implementing P-CSCF Support

The following restrictions and limitations apply to implementing P-CSCF Support:

- Since the Visited Network Identifier is not part of an Inherit profile, you need to configure it independently on a per-adjacency basis.
- This feature does not offer support for securing access links through IPsec or NASS bundled authentication.
- This feature does not support emergency calls.

Information About P-CSCF Support

Standard Non-IMS Profile

This profile provides compatibility with existing SBC functionality and is used for adjacencies that do not operate in an IMS network. When this profile is applied to an adjacency, the SBC exhibits the following properties:

- Contact headers are rewritten to ensure that the SBC remains on the signaling path.
- Unknown headers, methods, and options are, by default, not allowed to pass through.
- The SBC does not attach Path headers to outbound signals.
- The SBC does not attach Record-Route headers to outbound signals.
- The endpoints on this adjacency do not need to be registered to receive or send Non-REGISTER requests.
- The endpoints do not need to attach a Route header to outbound signals.
- The adjacencies do not generate P-Charging Vector headers for outbound signals.

P-CSCF Access Profile

This profile provides the configurations required to perform the functions of a P-CSCF Access adjacency. When this profile is applied to an adjacency, the SBC exhibits the following properties:

- Contact headers are not rewritten.
- The endpoints on this adjacency need to be registered to receive or send Non-REGISTER requests.
- The endpoints need to attach a Route header to outbound signals, which in turn, matches a Service-Route set from the Registrar.
- The SBC appends Record-Route headers to outbound signals.
- The SBC does not attach Path headers to outbound signals.
- The adjacencies do not generate P-Charging Vector headers for outbound signals.

- The SBC, by default, allows all inbound non-essential headers to pass through, except P-Asserted Identity, Security-Client, Security-Verify, P-Charging-Function Addresses, P-Charging-Vector, and P-Media-Authorization.
- The SBC, by default, allows all outbound non-essential headers, except P-Charging-Function-Addresses, P-Charging-Vector, and P-Media-Authorization.
- The SBC allows all inbound non-essential methods to pass through.
- The SBC allows all outbound non-essential methods to pass through; UEs are not permitted to act as Registrars.
- The Option tags in Supported, Require, or Proxy-Require headers are allowed to pass through in both directions.

P-CSCF Core Profile

This profile provides the configurations required to perform the functions of a P-CSCF Core adjacency. When this profile is applied to an adjacency, the SBC exhibits the following properties:

- Contact headers are not rewritten.
- The SBC, by default, allows all inbound unknown headers, except the P-Charging-Function-Addresses and P-Media-Authorization.
- The SBC does not attach Record-Route headers to outbound signals.
- The SBC appends Record-Route headers to outbound signals.
- The SBC attaches Path headers to outbound REGISTER signals from P-CSCF.
- The adjacencies generate P-Charging Vector headers for outbound signals.
- The endpoints on this adjacency do not need to be registered to receive or send Non-REGISTER requests.
- The SBC, by default, allows all outbound non-essential headers, except P-Charging-Function-Addresses and P-Media-Authorization.
- The SBC allows all unknown methods to pass through.
- The Option tags in Supported, Require, or Proxy-Require headers are allowed to pass through in both directions.

Implementing P-CSCF Support

Configuring Inherent Profiles

SUMMARY STEPS

1. **configure**
2. **sbc** *service-name*
3. **sbe**
4. **sip inherit profile preset p-cscf-access**
5. **adjacency sip** *adjacency-name*

6. **inherit profile preset p-cscf-access**
7. **visited network identifier** *network-name*
8. **commit**
9. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure Example: RP/0/0/CPU0:router# configure	Enables global configuration mode.
Step 2	sbc <i>service-name</i> Example: RP/0/0/CPU0:router(config)# sbc mysbc	Enters the mode of an SBC service. <ul style="list-style-type: none"> Use the <i>service-name</i> argument to define the name of the service.
Step 3	sbe Example: RP/0/0/CPU0:router(config-sbc)# sbe	Enters the mode of a SBE entity within an SBC service.
Step 4	sip inherit profile preset p-cscf-access Example: RP/0/0/CPU0:router(config-sbc-sbe)# sip inherit profile preset p-cscf-access	Configures the P-CSCF Access Inherit Profile as the global profile.
Step 5	adjacency sip <i>adjacency name</i> Example: RP/0/0/CPU0:router(config-sbc-sbe)# adjacency sip sipadj	Enters the mode of an SBE SIP adjacency. <ul style="list-style-type: none"> Use the <i>adjacency-name</i> argument to define the name of the SIP adjacency.
Step 6	inherit profile preset p-cscf-access Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# inherit profile preset-p-cscf-access	Configures the SIP adjacency to use the P-CSCF-Access profile.
Step 7	visited network identifier <i>network name</i> Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# visited network identifier mynetwork.com	Configures the specified visited network identifier on the SIP adjacency

	Command or Action	Purpose
Step 8	commit Example: RP/0/0/CPU0:router (config-sbc-sbe-adj-sip) # commit	Saves configuration changes. Use the commit command to save the configuration changes to the running configuration file and remain within the configuration session.
Step 9	exit Example: RP/0/0/CPU0:router (config-sbc-sbe-adj-sip) # exit	Exits the SIP adjacency mode to the SBE mode.

Additional References

The following sections provide references related to P-CSCF support on the SBC.

Related Documents

Related Topic	Document Title
Cisco IOS XR master command reference	Cisco IOS XR Master Commands List
Cisco IOS XR SBC interface configuration commands	<i>Cisco IOS XR Session Border Controller Command Reference</i>
Initial system bootup and configuration information for a router using the Cisco IOS XR Software	<i>Cisco IOS XR Getting Started Guide</i>
Cisco IOS XR command modes	<i>Cisco IOS XR Command Mode Reference</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support from existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
—	To locate and download MIBs using Cisco IOS XR software, use the Cisco MIB Locator found at the following URL and choose a platform under the Cisco Access Products menu: http://cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport