



IBCF Processing Support

Users can configure the SBC to perform the role of an Interconnection Border Control Function (IBCF) SIP border gateway, both managing requests across a network border between IMS core networks and interworking with non-IMS core networks, such as H.323 networks.

When functioning as an IBCF, the SBC supports the following IBCF functions:

- Adding to Path header on REGISTER
- Modifying Service Route header
- Routing based on SIP Route headers
- Topology hiding
- Screening of SIP signaling
- Passthrough of From, To, and Contact headers
- Passthrough of request URI on REGISTER
- Interworking with P-CSCF, I-CSCF, and S-CSCF
- Handling messages from untrusted domains

Feature History for IBCF 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:

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Restrictions for Implementing IBCF Support

The following features are not included in the SBC IBCF support:

- Blacklist or whitelist header-values-content-type, content-disposition, and content-language headers
- Blacklist or whitelist MIME bodies
- Session timer
- Co-location with I-CSCF
- SBC does not reject long message bodies.
- SBC does not check the length of SIP bodies.
- SBC does not provide a default implementation of the Encryption User Exit.
- SBC does not hide network devices that are identified by IP addresses.
- SBC does not support the full IBCF handling of failed REGISTERs.
- SBC does not provide interoperability between IMS and other SIP domains.
- The IBCF selection of a new entry point for forwarding REGISTER requests is limited to SIP Server Location procedures (per RFC 3263) and is applicable only if the initial server selected does not respond.

Information About IBCF Support

Adding to Path Header on REGISTER

When the SBC is configured to perform the role of an IBCF gateway, the IBCF adds itself to the Path header to ensure that all INVITE requests to the subscriber are routed via the IBCF.

Modifying Service-Route Header on REGISTER

The Service-Route header is analogous to the Path header, but it is used to specify the list of devices a call should traverse for calls originating from a subscriber. By default, the IBCF does not modify the Service-Route header sent on REGISTER responses. However, if topology hiding is required, then the IBCF encrypts the header elements that match its configured HomeNetworkId.

Routing based on SIP Route headers

You can configure the SBC to route Dialog-creating requests, such as INVITE, to the next hop-IP address based on the Route header, which ensures that the SIP messages go through the specified border gateways between networks and the S-CSCF that handled the UA's REGISTER.

Topology Hiding

The SBC hides those parts of the routing-related headers which reveal the internal topology of the SBC network. But this feature also ensures that the headers are usable for INVITE requests and other methods.

Screening of SIP Signaling

When configured to perform the role of an IBCF gateway, the SBC does not screen certain SIP headers using profile whitelists and blacklists.

Passthrough of From, To, and Contact Headers

For Dialog-creating and Out-of-dialog requests, the SBC allows the From, To, and Contact header URIs to pass through without modifying them. For dialog headers, the SBC uses the values corresponding to those on the Out-of-dialog requests.

Passthrough of Request URI on REGISTER

The SBC allows the Request URI on a REGISTER message to pass through with modifying it.

Interworking with P-CSCF, I-CSCF, and S-CSCF

When performing the role of an IBCF gateway, the SBC allows the CSCF-specific headers on SIP messages to pass through.

Handling Messages from Untrusted Domains

When the SBC is acting as an IBCF entry point, it handles out-of-dialog requests from untrusted domains as follows:

- The SBC rejects all REGISTER requests with a 403 response.
- The SBC removes all P-Asserted-Identity headers, P-Access-Network-Info headers, P-Charging-Vector headers, and P-Charging-Function-Address headers from other requests.
- The SBC rejects requests if the router contains the Orig parameter.

Implementing IBCF Support

Configuring the Domain Names to Use for IBCF Adjacencies

SUMMARY STEPS

1. `configure`

2. **sbc** *service-name*
3. **sbe**
4. **sip home network identifier** *domain-name*
5. **sip encryption key** *string*
6. **adjacency sip** *adjacency-name*
7. **home network identifier** *domain-name*
8. **encryption key** *string*
9. **commit**
10. **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 home network identifier <i>domain name</i> Example: RP/0/0/CPU0:router(config-sbc-sbe)# sip home network identifier mydomain.com	Configures the specified domain name as the global home network identifier for use in all SIP IBCF adjacencies. Use the <i>domain-name</i> argument to specify the domain name of the SIP adjacency.
Step 5	sip encryption key <i>string</i> Example: RP/0/0/CPU0:router(config-sbc-sbe)# encryption key code1	Configures a global encryption key for all SIP IBCF adjacencies. <ul style="list-style-type: none"> Use the <i>string</i> value to specify the encryption key to use for all SIP IBCF adjacencies.
Step 6	adjacency sip <i>adjacency name</i> Example: RP/0/0/CPU0:router(config-sbc-sbe)# sip 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.

	Command or Action	Purpose
Step 7	<p><code>home network identifier network name</code></p> <p>Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# <code>home network identifier Cisco.com</code></p>	<p>Configures a home network identifier on an IBCF adjacency.</p> <p>Use the <i>network-name</i> argument to specify the name of the home network identifier.</p>
Step 8	<p><code>encryption key string</code></p> <p>Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# <code>encryption key code2</code></p>	<p>Configures an encryption key on the SIP IBCF adjacency.</p> <ul style="list-style-type: none"> Use the <i>string</i> value to specify the encryption key for the SIP IBCF adjacency.
Step 9	<p><code>commit</code></p> <p>Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# <code>commit</code></p>	<p>Saves configuration changes. Use the <code>commit</code> command to save the configuration changes to the running configuration file and remain within the configuration session.</p>
Step 10	<p><code>exit</code></p> <p>Example: RP/0/0/CPU0:router(config-sbc-sbe-adj-sip)# <code>exit</code></p>	<p>Exits the SIP adjacency mode to the SBE mode.</p>

Additional References

The following sections provide references related to IBCF 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