SIP Profiles on the Session Border Controller

You can configure the Session Border Controller (SBC) with method and header profiles on Session Initiation Protocol (SIP) messages. These profiles are used to control which SIP requests are accepted (whitelists) and which requests are rejected (blacklists) based on the method of the request. This helps to avoid misusing the SBE or SIP adjacency by SIP users and improves the efficiency of SIP calls.

A header-profile can conditionally match any part of a header, but can only replace the entire header. SIP parameter profiles extend this capability to allow changes to be made to individual SIP Request Uniform Resource Identifier (URI) parameters associated with a header.

For ACE SBC Release 3.0.0 and later, this feature is supported in the unified model only.

Feature History for Method-Profiles

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE SBC Release 3.1.00</td>
<td>• Added support for response code mapping.</td>
</tr>
<tr>
<td></td>
<td>• Added support for SIP header manipulation.</td>
</tr>
<tr>
<td></td>
<td>• Added support for provisional response filtering.</td>
</tr>
<tr>
<td></td>
<td>• Added support for parameter profiles.</td>
</tr>
<tr>
<td></td>
<td>• Added support for P-KT-UE-IP headers.</td>
</tr>
<tr>
<td></td>
<td>• Added support for SIP header public/private IP address information insertion.</td>
</tr>
<tr>
<td>ACE SBC Release 3.0.00</td>
<td>• SIP Header Profile feature was introduced on the Cisco 7600 series routers along with support for the SBC unified model.</td>
</tr>
<tr>
<td></td>
<td>• SIP Method-Profile feature was introduced on the Cisco 7600 series routers along with support for the SBC unified model.</td>
</tr>
</tbody>
</table>

Contents

This chapter contains the following sections:

- Information About SIP Profiles, page 16-2
- Method-Profiles, page 16-3
Information About SIP Profiles

The SBC can manipulate the following SIP profiles:

- Method-profiles
- Header-Profiles
- Parameter-profiles

Method-profiles allow the association of header-profiles and parameter-profiles to method elements contained in the method-profile.

You can use actions with method-profiles to allow the whitelist to contain blacklisted headers and the blacklist to contain whitelisted headers as well as to reject non-vital methods. This allows any profile to contain mixed actions per-profile.

Header-profiles allow complex header manipulation to occur, over and above the existing whitelist and blacklist functionality using actions based on conditional expressions.

Header-profiles additionally allow the association of parameter-profiles in header elements contained in the profile.

You can use variables to store header content; you can then optionally reconstruct the headers using previously stored variables. You can also match headers based on regular expression matching. You can use conditional matching to match against adjacency settings, transport addresses, and a number of boolean match criteria. You can also use header-profiles to reference and make limited modifications to the Request-Line.

Parameter-profiles allow the removal, replacement, or addition of specific URI parameters within certain vital headers.

You can also associate parameter-profiles with methods in method-profiles for the purpose of request-line processing per method only.

Figure 16-1 show the hierarchical association of adjacency, method-profiles, header-profiles, and parameter-profiles.
Method-Profiles

SIP methods can be blacklisted and whitelisted dynamically at run-time during receipt of a message (ingress) and at transmission of a message (egress).

The existing method-profile allows two types of method-profiles for non-vital requests. These can be blacklist (drop) or whitelist (pass). The whitelist action is considered to be the default type for a method if ‘blacklist’ is not present in the command line.

The method-profile will contain a list of methods which are either passed on (whitelist) or dropped (blacklist). A single profile can then be associated with each of the inbound or outbound call sides.

Method-profiles can be associated with pre-defined header-profiles. In addition, pre-defined parameter profiles can be associated with the Request-line per method.

Method-profiles are not allowed to blacklist or whitelist vital methods; however, header-profiles and parameter-profiles can be associated with vital methods.

Status code mapping can be associated with any method type declared in a method-profile such that any response identified with this method can be changed. For example, a 503 response to an INVITE could potentially be changed to a 500 response if appropriate mapping is declared against the INVITE method.

This section contains the following topics:

- Restrictions for Configuring Method-Profiles, page 16-4
- Information About Method-Profiles, page 16-4
- Configuring Method-Profiles, page 16-5
- Applying Method-Profiles, page 16-7
Restrictions for Configuring Method-Profiles

Review the following restrictions for method-profiles:

- Any given profile must be exclusively a whitelist or a blacklist.
- Two profiles are applied to process any given SIP message: one inbound and, if permitted through that, one outbound.
- Profiles check only SIP methods in the Request Uniform Resource Identifier (URI).
- SIP requests are rejected as a result of a method-profile’s rules. SIP responses are always forwarded.
- Any method unknown to the SBC which is forwarded as a result of a profile’s rules does not affect creating or deleting a SIP dialog.
- Methods that are essential to the operation of an SBC cannot be blacklisted and are implicitly added to any whitelist.
- Profiles cannot be deleted while they are in active use by at least one adjacency.
- In case of non-Information Management System (IMS) preset, there is a default method-profile (sip method-profile default). If configured, it gets attached to the adjacencies for which no explicit user-defined method-profiles are configured. The sip method-profile default is an empty white-list by itself.

Information About Method-Profiles

After you configure a profile, you can assign it for a default application. Any SIP adjacency can apply it to signaling for that adjacency.

You can add or remove methods from profiles at any time. Each method can optionally be assigned one of three actions with the `action` command:

- Either `pass` or `reject` the action.
- Use the `as-profile` action to select the default profile blacklist or whitelist.

Profiles cannot be deleted while a least one adjacency is using them. You can see which adjacencies are using a profile by entering the following show command:

```
show services sbc abc-name sbe sip method-profile name
```

Table 16-1 lists the methods that are part of the essential method set.

<table>
<thead>
<tr>
<th>Essential Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVITE PRACK</td>
</tr>
<tr>
<td>ACK NOTIFY</td>
</tr>
<tr>
<td>CANCEL REFER</td>
</tr>
<tr>
<td>BYE SUBSCRIBE</td>
</tr>
<tr>
<td>REGISTER</td>
</tr>
</tbody>
</table>

Profiles are an optional part of the configuration; they do not have to be specified for the SBC to operate correctly. The default behavior is that requests with one of the essential methods are processed, and all other requests are rejected.

To modify parameters in the request-line, associate a parameter-profile with a method-profile.
ACE SBC Release 3.1.00 introduces the following functionality:

- Predefined header-profiles can be associated with outgoing method-profiles.
- Predefined parameter profiles can be associated with the request-line per method.

Note: Header-profiles and parameter-profiles can be associated with essential methods even though method-profiles are not allowed to blacklist/whitelist essential methods.

- Response code mapping can be associated with any method type declared in a method-profile so that any response identified with the method can be changed. For example, a 503 response to an INVITE could potentially be changed to a 500 response if appropriate mapping is declared against the INVITE method.

## Configuring Method-Profiles

### SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. sip method-profile profile-name
5. blacklist
6. action {add-first-header | add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip}
7. pass-body
8. method name
9. description text
10. exit
11. show services sbc sbc-name sbe sip method-profile name
12. show services sbc sbc-name sbe sip method-profiles
13. show services sbc sbc-name sbe sip essential-methods

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1**
  configure | Enables global configuration mode. |

**Example:**
`host1/Admin# configure`

**Step 2**

sbc service-name

**Example:**
`host1/Admin(config)# sbc mysbc`

Enters the submode for configuring the method-profile. Use the `service-name` argument to define the name of the service.
### Method-Profiles

#### Step 3
**Command or Action**
```
sbe
```
**Purpose**
Enters the mode of an SBE entity within an SBC service.

**Example:**
```
host1/Admin(config-sbc)# sbe
```

#### Step 4
**Command or Action**
```
sip method-profile profile-name
```
**Purpose**
Configures a method-profile.

**Example:**
```
host1/Admin(config-sbc-sbe)# sip method-profile profile1
```

If you enter the `profile-name default`, the default profile is configured. This profile is used for all adjacencies that do not have a specific profile configured.

#### Step 5
**Command or Action**
```
blacklist
```
**Purpose**
Configures a profile to be a blacklist. The `no` form of this command configures the profile to be a whitelist.

**Note**
By default, profiles are whitelists.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-mth)# blacklist
```

#### Step 6
**Command or Action**
```
action {add-first-header | add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip}
```
**Purpose**
Specifies the action to be performed on the parameter.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-prm-ele)# action pass
```

Permits message bodies to be passed through for non-vital methods accepted by this profile.

The `no` form of this command strips the message body out of any non-vital SIP messages matched by this profile.

#### Step 7
**Command or Action**
```
pass-body
```
**Purpose**
Permits message bodies to be passed through for non-vital methods accepted by this profile.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-mth-prf)# pass-body
```

The `no` form of this command strips the message body out of any non-vital SIP messages matched by this profile.

#### Step 8
**Command or Action**
```
method name
```
**Purpose**
Adds a method with the specified name to the profile.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-mth-prf)# method test
```

This field can be 1 to 32 characters (inclusive) in length and is case-insensitive.

The `no` form of this command deletes the method with that name from the profile.

#### Step 9
**Command or Action**
```
description text
```
**Purpose**
Adds a description for the specified profile.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-mth-prf)# description my SBC profile
```

The `no` form of this command removes the description.

This description is displayed when the `show` command is used for this profile and is displayed for each profile when displaying a summary of all profiles.

#### Step 10
**Command or Action**
```
exit
```
**Purpose**
Exits the method-profile mode to the sbe mode.

**Example:**
```
host1/Admin(config-sbc-sbe-sip-mth-prf)# exit
```

#### Step 11
**Command or Action**
```
show services sbc sbc-name sbe sip method-profile name
```
**Purpose**
Displays details for the method-profile with the designated name.

**Example:**
```
host1/Admin(config-sbc-sbe)# show services sbc mysbc sbe sip-method-profile profile1
```

Use `name default` to view the default profile.
## Applying Method-Profiles

### SUMMARY STEPS

1. `configure`
2. `sbc service-name`
3. `sbe`
4. `adjacency sip adjacency-name`
5. `method-profile inbound profile-name`
6. `exit`
7. `show services sbc sbc-name sbe sip method-profile name`

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>configure</code></td>
<td>Enables global configuration mode.</td>
</tr>
</tbody>
</table>
| **Example:**
  
  host1/Admin# configure | |
| **Step 2** `sbc service-name` | Enters the mode of an SBC service. Use the `service-name` argument to define the name of the service. |
| **Example:**
  
  host1/Admin(config)# sbc mysbc | |
| **Step 3** `sbe` | Enters the mode of an SBE entity within an SBC service. |
| **Example:**
  
  host1/Admin(config-sbc)# sbe | |
Response Code Mapping

Response code mapping provides an ability to manipulate the SIP response codes when the messages traverse through the SBC. The mapping table is applied to inbound messages received at a SIP adjacency or to responses sent out of a SIP adjacency. The mapping is user-configurable on a per SIP method basis so that each SIP method can be mapped differently. Configuration of the mapping is on a per adjacency basis. Table 16-2 lists the mapping limitations on SP response code.

### Table 16-2 Response Code Mapping

<table>
<thead>
<tr>
<th>Response Codes</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>No mapping allowed</td>
</tr>
<tr>
<td>1xx</td>
<td>Maps to 1yy (not 100)</td>
</tr>
<tr>
<td>2xx</td>
<td>Maps to 2yy</td>
</tr>
<tr>
<td>3xx</td>
<td>Maps to 3yy</td>
</tr>
<tr>
<td>4xx</td>
<td>Maps to 4yy, 5yy, or 6yy</td>
</tr>
<tr>
<td>5xx</td>
<td>Maps to 4yy, 5yy, or 6yy</td>
</tr>
<tr>
<td>6xx</td>
<td>Maps to 4yy, 5yy, or 6yy</td>
</tr>
</tbody>
</table>

Response code mapping allows you to:

- Map a particular response code to a specific response code. For example, you can map 401 to 400, but not to 300. You can map 102 to 101, but not 100.
- Map a group of response codes (defined using a wildcard) to a specific response code. For example, you can map 40X to 400, or map all of 4XX to 400.
Specify exceptions to the wildcard. For example, mapping 2XX to 201, and mapping 200 to 200. You can use the range value command to add one of more mappings. Where configuration causes the response code to be mapped to one that is not defined in RFC 3261, the SBC applies the reason phrase "Unrecognised status code."

This section contains the following topics:

- Restrictions for Response Code Mapping, page 16-9
- Applying Response Code Mapping, page 16-11

### Restrictions for Response Code Mapping

The following restrictions apply to Response Code Mapping:

- Response code mapping only covers mapping of SIP response codes. H.323 calls cannot have their response codes mapped.
- Certain messages are processed only by the SIP Transaction Manager; mapping of these messages is not possible. For example, badly formatted messages that cannot be interpreted are responded to directly by the SIP Transaction Manager.
- There is no provision for the mapping of SIP reason phrases. The reason phrase will always match the reason code as defined in RFC 3261. A generic reason phrase is applied when the requested reason code has no corresponding definition in RFC 3261. This phrase is a compile time constant.
- Changing the response code could result in an invalid message (for example, mapping the response code could produce a message with mandatory headers missing). There is no provision to ensure that messages contain headers required by the new response code.
- A maximum of 128 mappings is permitted in each direction per adjacency (128 inbound and 128 outbound mappings).

### Configuring Response Code Mapping

#### SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. sip method-profile profile-name
5. method name
6. map-status-code
7. range statuscoderange value statuscodevalue
8. exit
9. show services sbc sbc-name sbe sip method-profile name
10. show services sbc sbc-name sbe sip method-profiles
11. show services sbc sbc-name sbe sip essential-methods
## Response Code Mapping

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>configure</code></td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin# configure</code></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td><code>sbc service-name</code></td>
<td>Enters the submode for configuring the method-profile. Use the <code>service-name</code> argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config)# sbc mysbc</code></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td><code>sbe</code></td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config-sbc)# sbe</code></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td><code>sip method-profile profile-name</code></td>
<td>Configures a method-profile. If you enter the <code>profile-name default</code>, the default profile is configured. This profile is used for all adjacencies that do not have a specific profile configured.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config-sbc-sbe)# sip method-profile profile1</code></td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td><code>method name</code></td>
<td>Adds a method with the specified name to the profile. This field can be 1 to 32 characters (inclusive) in length and is case-insensitive. The <code>no</code> form of this command deletes the method with that name from the profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config-sbc-sbe-sip-mth-prf)# method test</code></td>
<td></td>
</tr>
<tr>
<td>Step 6</td>
<td><code>map-status-code</code></td>
<td>Enters the map</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router/Admin(config-sbc-sbe-sip-mth-ele)# map-status-code</code></td>
<td></td>
</tr>
<tr>
<td>Step 7</td>
<td><code>range statuscoderange value statuscodevalue</code></td>
<td>Maps a range of response codes to a response code.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router/Admin(config-sbc-sbe-sip-mth-ele-map)# range 503 value 500</code></td>
<td></td>
</tr>
<tr>
<td>Step 8</td>
<td><code>exit</code></td>
<td>Exits the method-profile mode to the sbe mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config-sbc-sbe-sip-mth-prf)# exit</code></td>
<td></td>
</tr>
<tr>
<td>Step 9</td>
<td><code>show services sbc sbc-name sbe sip method-profile name</code></td>
<td>Displays details for the method-profile with the designated name. Use <code>name default</code> to view the default profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>host1/Admin(config-sbc-sbe)# show services sbc mysbc sbe sip-method-profile profile1</code></td>
<td></td>
</tr>
</tbody>
</table>
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Response Code Mapping

Applying Response Code Mapping

Apply response code mapping by associating it with an adjacency.

SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. adjacency sip adjacency-name
5. method-profile inbound profile-name
6. exit
7. show services sbc sbc-name sbe sip method-profile name

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td>host1/Admin# configure</td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the mode of an SBC service.</td>
</tr>
<tr>
<td>Example:</td>
<td>host1/Admin(config)# sbc mysbc</td>
</tr>
<tr>
<td><strong>Step 3</strong> sbe</td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td>Example:</td>
<td>host1/Admin(config-sbc)# sbe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 10 show services sbc sbc-name sbe sip method-profiles</td>
<td>Displays a list of all configured method-profiles.</td>
</tr>
<tr>
<td>Example:</td>
<td>host1/Admin(config-sbc-sbe)# show services sbc mysbc sbe sip method-profiles</td>
</tr>
<tr>
<td>Step 11 show services sbc sbc-name sbe sip essential-methods</td>
<td>Displays a list of the essential methods listed in Table 16-1 on page 16-4.</td>
</tr>
<tr>
<td>Example:</td>
<td>host1/Admin(config-sbc-sbe)# show services sbc mysbc sbe sip essential-methods</td>
</tr>
</tbody>
</table>
## Header Profiles

Header-profiles processing occurs in a two-stage process. In the first stage, the following steps occur:

1. Select next header from the message.
2. Look through the header profile for rules affecting the selected header.
3. In configured order, try to apply each rule to the header.
4. If the action is to add a header, then ignore this rule and move on to the next.
5. If the match condition is FALSE then move onto the next rule, don’t evaluate any parameter profile.
6. Apply the action or parameter profile described in the element. If this is to remove the header, then move on to the next header in the message.

The second stage adds new headers to the message. Because it occurs after the first stage, there is a well-defined group of headers in the message. The steps are:

1. Take each rule that adds a header to the message.
2. If the action is to add the first instance of the header only and there is already a header with that name in the message, then move onto the next addition rule.

### Command or Action

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Example</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>adjacency sip adjacency-name</td>
<td>host1/Admin(config-sbc-sbe)# adjacency sip test</td>
<td>Enters the mode of an SBE SIP adjacency. Use the <code>adjacency-name</code> argument to define the name of the service.</td>
</tr>
<tr>
<td>5</td>
<td>method-profile inbound profile-name</td>
<td>host1/Admin(config-sbc-sbe-adj-sip)# method-profile inbound profile1</td>
<td>Sets profile1 to be used for inbound signaling on adjacency test.</td>
</tr>
<tr>
<td>6</td>
<td>exit</td>
<td>host1/Admin(config-sbc-sbe-adj-sip)# exit</td>
<td>Exits the header profile mode to the sbe mode.</td>
</tr>
<tr>
<td>7</td>
<td>show services sbc sbc-name sbc sip method-profile name</td>
<td>host1/Admin(config-sbc-sbe)# shows services sbc mysbc sbc sip method-profile one</td>
<td>Displays the header profile information.</td>
</tr>
</tbody>
</table>

### Note

If another action has replaced the name of header then it is the replaced name that is used to test whether a new header should be added. That is, any header-name replacements performed in stage 1 are used in this stage of header-name comparisons, and not the original header-names from the arriving message.
4. Apply any rules defined for that header in user-configured order with this name. Only apply rules that are ordered after the add header rule, if the header was added.

This section contains the following topics:

- Restrictions for Configuring Header Profiles, page 16-13
- Information About Header Profiles, page 16-13
- Header Manipulation, page 16-14
- Header Profile Configuration Information, page 16-15
- Configuring Header Profiles, page 16-15
- Applying Header Profiles, page 16-17
- P-KT-UE-IP Header Support, page 16-19

**Restrictions for Configuring Header Profiles**

Review the following restrictions for header profiles:

- Any given profile must be exclusively a whitelist or a blacklist.
- Two profiles are applied to process any given SIP message: one inbound and, if permitted through that, one outbound.
- SIP headers that are essential to the operation of an SBC cannot be blacklisted and are implicitly added to any whitelist.
- Profiles can not be removed while they are in active use by an adjacency.
- For provisional filtering, provisional responses may not be blocked where the sender has required reliable provisional responses (SIP 100rel). This is to ensure that the SBC does not interfere with the call setup (as per RFC3262) by dropping the provisional response.
- Header-profile conditional matching can be performed against any part of the message. The matches can be exact matches or even sub-strings of any given field.
- The conditions may be associated with a specific header referenced by the header-profile header definition, but can also reference other non-vital parts of the message in order to evaluate the conditional expression; thus the condition could be associated with header P-Asserted-Identity while checking against the contents of the Call-Info header.

**Information About Header Profiles**

After you configure a profile, you can assign it for a default application. Any SIP adjacency can apply it to signaling for that adjacency.

You can add or remove headers from profiles at any time. Headers configured on a profile must contain characters that are valid for a SIP header.

Profiles cannot be deleted while any adjacency is using them. You can see which adjacencies are using a profile by entering the following show command:

```
show services sbc sbc-name sbe sip header-profile name
```

Table 16-3 lists the fixed set of essential SIP headers, which are not permitted to be configured on any profile.
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Table 16-3  Essential Headers

<table>
<thead>
<tr>
<th>Field</th>
<th>Content-Type</th>
<th>expires</th>
<th>route</th>
<th>Referred-By</th>
</tr>
</thead>
<tbody>
<tr>
<td>from</td>
<td>content-length</td>
<td>min-expires</td>
<td>record-route</td>
<td>referred-to</td>
</tr>
<tr>
<td>via</td>
<td>contact</td>
<td>authorization</td>
<td>proxy-authorization</td>
<td>replaces</td>
</tr>
<tr>
<td>call-id</td>
<td>supported</td>
<td>www-authenticate</td>
<td>proxy-require</td>
<td>replaces</td>
</tr>
<tr>
<td>cseq</td>
<td>require</td>
<td>proxy-authenticate</td>
<td>replaces</td>
<td></td>
</tr>
<tr>
<td>max-forwards</td>
<td>allow</td>
<td>event</td>
<td>subscription-state</td>
<td></td>
</tr>
</tbody>
</table>

Profiles are an optional part of the configuration. If no profile is applicable to a given SIP signal, then the essential headers are processed and all other headers are not forwarded.

Header Manipulation

You can modify non-essential headers in SIP messages using header and parameter profiles. The following information summarizes the supported actions:

- Pass the header unchanged (whitelist functionality).
- Conditionally pass the header unchanged.
- Remove the header (blacklist functionality).
- Conditionally remove the header.
- Replace the name of the header. The replacement name cannot be that of a vital header.
- Conditionally replace the header content (appearing after the ":").
- Add a new instance of a header to a message regardless of whether or not the header already exists.
- Add the first instance of the header to the message, if a header with this name does not already exist.
- A combination of the above actions can be specified as a set or group of actions to be performed within a profile.
- The header-profiles can be used in method-profiles to allow header actions only associated with specific requests types.
- Parameter-profiles can be associated with headers in header-profiles.
- Header content can be stored in variables and later expanded during replace-value actions.
- Regular expression matching can be performed on headers.

You can match against any part of a header but only replace the entire header. A parameter-profile extends this capability to change individual SIP URI parameters associated with a header. Header profiles can only modify non-vital header information. To display the vital header information, use the show services sbc test sip essential-method, show services sbc test sip essential-headers, or show services sbc test sip essential-parameters commands.

Parameter-profiles can be specified to match the following parts of the message:

- Request URI
- To
- From
- Contact
To modify parameters in the Request-line, associate a parameter-profile with a method-profile. To modify parameters in Contact, To, or From headers, associate a parameter-profile in the header-profile.

Header Profile Configuration Information

Consideration needs to be given as to the effect of an action or set of actions in conjunction with the default profile behavior (whitelist/blacklist).

An empty blacklist will effectively try to pass on any non-vital header.

An empty whitelist will effectively drop all non-vital headers.

The behavior becomes more complex when conditions are associated with headers.

It is important to consider what actions are defined on the in-bound side. If an empty whitelist header-profile is associated with the in-bound side, then no non-vital headers will be visible at all to the outbound side, and therefore, actions applied to the out-bound sides profile may appear not to work. You may need to consider adding actions to ‘pass’ a specific header on the in-bound side by adding the header to a whitelist (with action as-profile or pass) or adding the header with action ‘pass’ in a blacklist.

For example, if a header-profile is defined as a whitelist (default behavior), and a header action to modify the header-value is inserted with a condition, then the action will be processed if the condition is TRUE and the header modified, but will be ignored if the condition is FALSE.

Because the header is inserted into the whitelist it might well be assumed that it would be passed on unmodified if the condition is FALSE, however, if the condition is FALSE, the action (entry) is ignored, and therefore it is as if the header is not present in the whitelist so the header will not be passed on.

To overcome this, a second entry with action ‘pass’ can be entered; thus if the headers condition is TRUE, the content with be modified, but if the condition is false, it will be ignored and continue to process any other entries. The second entry has an action ‘pass’ and will cause the header to be passed on.

Configuring Header Profiles

SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. sip header-profile profile-name
5. blacklist
6. description text
7. header name
8. header name
9. entry number
10. action {add-first-header | add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip}
11. parameter-profile name
12. exit
13. `show services sbc sbc-name sbe sip header-profile profile name`
14. `show services sbc sbc-name sbe sip header-profiles`
15. `show services sbc sbc name sbe sip essential-headers`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin# configure</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the submode for configuring the header profile. Use the <code>service-name</code> argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config)# sbc mysbc</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> sbe</td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc)# sbe</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> sip header-profile profile-name</td>
<td>Configures a header profile. If you enter the <code>profile-name default</code>, the default profile is configured. This profile is used for all adjacencies which do not have a specific profile configured.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe)# sip header-profile profile1</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> blacklist</td>
<td>Configures a profile to be a blacklist. The <code>no</code> form of this command configures the profile to be a whitelist. <strong>Note</strong> By default, profiles are whitelists.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr)# blacklist</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> description text</td>
<td>Adds a description for the specified profile. The <code>no</code> form of this command removes the description. This description is displayed when the <code>show</code> command is used for this profile and is displayed for each profile when displaying a summary of all profiles.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr)# description blacklist profile</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> header name</td>
<td>Configures the profile to contain the header test1.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr)# header test1</td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> header name</td>
<td>Adds a header to this profile.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr-ele)# header test1</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 16  SIP Profiles on the Session Border Controller

Header Profiles

Applying Header Profiles

SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 9**

  entry number

  Example:

  host1/Admin(config-sbc-sbe-sip-prm-ele)# entry

  Specifies which action entry to work on.

| **Step 10**

  action (add-first-header | add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip)

  Example:

  host1/Admin(config-sbc-sbe-sip-prm-ele)# action pass

  Specifies the type of action.

| **Step 11**

  parameter-profile name

  Example:

  host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile test1

  Adds a parameter-profile associated to a header.

| **Step 12**

  exit

  Example:

  host1/Admin(config-sbc-sbe-sip-hdr-prf)# exit

  Exits the header profile mode to the sbe mode.

| **Step 13**

  show services sbc sbc-name sbe sip header-profile name

  Example:

  host1/Admin(config-sbc-sbe)# show services sbc mysbcs be sip header-profile profile1

  Displays details for the header profile with the designated name.

  Use name default to view the default profile.

| **Step 14**

  show services sbc sbc-name sbe sip header-profiles

  Example:

  host1/Admin(config-sbc-sbe)# show services sbc mysbcsbe sip header-profiles

  Displays a list of all configured header profiles.

| **Step 15**

  show services sbc sbc-name sbe sip essential-headers

  Example:

  host1/Admin(config-sbc-sbe)# show services sbc mysbcs be sip essential-headers

  Displays a list of the essential headers listed in Table 16-3.
### Header Profiles

4. `adjacency sip adjacency-name`
5. `header-profile inbound profile-name`
6. `exit`
7. `show services sbc service-name sbe sip header-profile name`

#### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin# configure</td>
<td></td>
</tr>
</tbody>
</table>

| **Step 2** sbc service-name | Enters the mode of an SBC service. Use the `service-name` argument to define the name of the service. |
| **Example:** host1/Admin(config)# sbc mysbc | |

| **Step 3** sbe | Enters the mode of an SBE entity within an SBC service. |
| **Example:** host1/Admin(config-sbc)# sbe | |

| **Step 4** adjacency sip adjacency-name | Enters the mode of an SBE SIP adjacency. Use the `adjacency-name` argument to define the name of the service. |
| **Example:** host1/Admin(config-sbc-sbe)# adjacency sip sipGW | |

| **Step 5** header-profile inbound profile-name | Sets the inbound header profile. |
| **Example:** host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound profile1 | |

| **Step 6** exit | Exits the header profile mode to the sbe mode. |
| **Example:** host1/Admin(config-sbc-sbe-sip-hdr-prf)# exit | |

| **Step 7** show services sbc service-name sbe sip header-profile name | Displays the header profile information. |
| **Example:** host1/Admin# show services sbc service-name sbe sip header-profile name | |
P-KT-UE-IP Header Support

Release 3.1.0 provides support for P-KT-UE-IP headers. These headers are a type of P-headers used for a variety of purposes within the networks, including charging and information about the networks a call traverses.

When the SBC receives the SIP message with the P-KT-UE-IP header, the SBC replaces the P-KT-UE-IP header value with the home gateway public IP address (which is the source address from IP layer header).

To do this, the SBC will conditionally add the P-KT-UE-IP header that contains the IPv4 address of the UE that originated the request.

P-KT-UE-IP Header Information

The following information applies:

- This feature is configured through the inbound header profile that receives the requests to which the header is to be added.
- When configured, the header is added to INVITE requests and to out-of-dialog requests.
- The header value contains an IPv4 address formatted as a dotted decimal text string, such as "123.123.123.123". If the request was received over a VPN, the VPN ID is appended after the IP address, such as "123.123.123.123 VPN-ID 0x01020304".
- The IPv4 address is the source IP address from the SIP message that was received by the SBC. This may not be the same as the IP address in the Via header. For example, the SIP message may have been through a gateway between the UE device and SBC.

Configuring P-KT-UE-IP Header Support

SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. sip header-profile profile-name
5. header name
6. entry number
7. exit
8. entry number
9. adjacency sip adjacency-name
10. header-profile inbound profile-name
11. sip header-profile profile-name
12. header name
13. action {add-first-header | add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip}
14. adjacency sip adjacency-name
### Chapter 16  
SIP Profiles on the Session Border Controller

#### Header Profiles

15. **header-profile inbound** *profile-name*

### Detailed Steps

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin# configure</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the mode of an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config)# sbc mysbc</td>
<td>Use the <em>service-name</em> argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Step 3</strong> sbe</td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc)# sbe</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> sip header-profile <em>profile-name</em></td>
<td>Configures a header profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe)# sip header-profile profile1</td>
<td>If you enter the <em>profile-name default</em>, the default profile is configured. This profile is used for all adjacencies which do not have a specific profile configured.</td>
</tr>
<tr>
<td><strong>Step 5</strong> header name</td>
<td>Adds a header to this profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe-sip-hdr-ele)# header test1</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> entry number</td>
<td>Specifies which action entry to work on.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe-sip-prm-ele)# entry</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> exit</td>
<td>Exits the header profile mode to the sbe mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe-sip-hdr-prf)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> entry number</td>
<td>Specifies which action entry to work on.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe-sip-prm-ele)# entry</td>
<td></td>
</tr>
<tr>
<td><strong>Step 9</strong> adjacency sip <em>adjacency-name</em></td>
<td>Enters the mode of an SBE SIP adjacency.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>host1/Admin(config-sbc-sbe)# adjacency sip sipGW</td>
<td>Use the <em>adjacency-name</em> argument to define the name of the service.</td>
</tr>
</tbody>
</table>
Provisional Response Filtering

Provisional response filtering makes it possible to block 183 responses sent by endpoints. When configuring provisional response filtering, keep the following in mind:

- Provisional responses may not be blocked where the sender has required reliable provisional responses (SIP 100rel).
- Dropping responses where 100_rel is required is not recommended. It may prevent call setup since RFC3262 states subsequent responses should not be sent.

Note  A call attempted with the "Required: 100Rel" header in the INVITE will fail when the adjacency is configured with a header profile to drop 183 messages.
This section contains the following topics:

- Configuring Provisional Response Filtering, page 16-22
- Applying Provisional Response Filtering, page 16-23

Provisional Response Filtering Information

Provisional response filtering is achieved by the use of the action drop-msg command. The action must be associated with the wildcard header action *. A condition should be added to match on the specific response code that must be dropped.

Note

The header action * can only be used one time in a profile.

Configuring Provisional Response Filtering

1. configure
2. sbc service-name
3. sbe
4. sip header-profile profile-name
5. header *
6. action drop-msg
7. condition status-code
8. exit

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin# configure</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the submode for configuring the header profile. Use the service-name argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config)# sbc mysbc</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> sbe</td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc)# sbe</td>
<td></td>
</tr>
</tbody>
</table>
### Command or Action

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4 sip header-profile profile-name</td>
<td>Configures a header profile. If you enter the profile-name default, the default profile is configured. This profile is used for all adjacencies which do not have a specific profile configured.</td>
</tr>
<tr>
<td>Example: host1/Admin(config-sbc-sbe)# sip header-profile profile1</td>
<td></td>
</tr>
<tr>
<td>Step 5 header *</td>
<td>Configures a profile to be a blacklist. The no form of this command configures the profile to be a whitelist.</td>
</tr>
<tr>
<td>Example: host1/Admin(config-sbc-sbe-sip-hdr)# header *</td>
<td></td>
</tr>
<tr>
<td>Step 6 action drop-msg</td>
<td>Configures the action to take on an element type in a header.</td>
</tr>
<tr>
<td>Example: host1/Admin(config-sbc-sbe-sip-hdr-ele)# action drop-msg</td>
<td></td>
</tr>
<tr>
<td>Step 7 condition status-code</td>
<td>Specifies a condition to match before taking an action to a SIP message profile.</td>
</tr>
<tr>
<td>Example: host1/Admin(config-sbc-sbe-sip-hdr-ele-act)# condition status-code eq 183</td>
<td></td>
</tr>
<tr>
<td>Step 8 exit</td>
<td>Adds a header to this profile.</td>
</tr>
<tr>
<td>Example: host1/Admin(config-sbc-sbe-sip-hdr-ele-act)# exit</td>
<td></td>
</tr>
</tbody>
</table>

---

**Applying Provisional Response Filtering**

**SUMMARY STEPS**

1. configure
2. sbc service-name
3. sbe
4. adjacency sip adjacency-name
5. header-profile inbound profile-name
6. exit
7. show services sbc service-name sbe sip header-profile name
Parameter Profiles

Parameter profiles allow you to specify specific URI parameter names and allow the removal, replacement, or the addition of specific non-vital URI parameters within certain headers.

The header-profile allows potential conditional matching against SIP URI parameters forming part of a limited set of headers. It only allows complete replacement of the header and or content.

The parameter-profile will allow actions to be performed only on the SIP URI parameters and not header parameters

This section contains the following topics:

- Restrictions for Configuring Parameter Profiles, page 16-24
- Information About Parameter Profiles, page 16-25
- Configuring Parameter Profiles, page 16-25
- Applying a Parameter Profile to a Header Profile, page 16-27

Restrictions for Configuring Parameter Profiles

Review the following restrictions for parameter profiles:

- For release 3.1.00, it is only permitted to act on parameters associated with SIP URIs and not header parameters.
- To prevent call processing failures, actions cannot be performed against vital (essential) parameters.
- Parameter profiles work only on the outbound side.
- Some existing adjacency settings may impact the way parameter actions are affected. For example, consider the adjacency setting `vpssAdjRewriteToHdr` set by as follows:

  `sbc test
   sbe
    adjacency sip <adj name>
    passthrough [to/from]
  `

  This setting can cause the To: and or From: headers to be passed from inbound to outbound side.

  The default setting on an adjacency, however, is FALSE (no “passthrough [to/From]” appears in the show run against the adjacency)’ which means that the To: and From: headers are effectively always re-written on the outbound side by default. The impact of this is that parameter-profiles actions applied to the inbound sides To: and/or From: headers will be lost on the outbound side unless ‘passthrough [to/from]’ is set in the configuration. Thus the action `add-not-present` can look like it always adds a parameter on the outbound side, even when the parameter is present on the in-bound side.

- If a parameter-profile adds a parameter to the request-line, and the To: header does not have setting ‘passthrough to’ set against the adjacency, then the re-writing of the To: header which is typically based on the Request-Line, will cause the parameter to also appear in the To: header.

- The content of the Request-line may affect the behavior of parameter-profiles attached to method-profiles. If the request-line that arrives on the in-bound side of the call directly addresses the address of the SBC, then effectively any call that originates on the out-bound side requires a new Request-Line to be generated. This means that parameters arriving on the in-bound side are effectively lost and can cause the action `add-not-present` to look like it always adds a parameter.
If however, the Request-Line address the final destination, then the Request-Line is effectively passed across to the outbound side and modified as needed. Parameters in this case are visible on the out-bound side.

Information About Parameter Profiles

Parameter-profiles form a set of actions that can be performed against any one header or request-line. Parameter-profiles can only be specified against the following parts of the message:

- Request URI
- To
- From
- Contact

To modify parameters in Contact, To, or From headers, associate a parameter-profile in the header-profile.

To modify parameters in the request-line, associate a parameter-profile with a method-profile.

Note

Parameter-profiles can be associated with essential methods even though method-profiles are not allowed to blacklist/whitelist essential methods.

Configuring Parameter Profiles

Perform this task to configure parameter profiles.

SUMMARY STEPS

1. config
2. sbc service-name
3. sbe
4. sip parameter-profile {profile-name}
5. parameter {parameter name}
6. action {add-not-present| add-or-replace | strip}
7. exit
8. show services sbc sbc-name sbe sip-parameter-profile {profile name}
9. show services sbc sbc-name sbe sip parameter-profiles
10. show services sbc sbc name sbe sip essential-parameters
### Parameter Profiles

#### DETAILED STEPS

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<td>configure</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin# configure</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>sbc service-name</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config)# sbc mysbc</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>sbe</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config-sbc)# sbe</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>sip parameter-profile {profile-name}</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config-sbc-sbe)# sip parameter-profile parmprof1</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>parameter {parameter name}</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config-sbc-sbe-sip-prm)# parameter user</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td>action {add-not-present</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-not-present value phone</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td>exit</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config-sbc-sbe-sip-hdr-prf)# exit</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td>show services sbc sbc-name sbe sip-parameter-profile {profile name}</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin# show services sbc mysbc sbe sip parameter-profile profile</td>
</tr>
</tbody>
</table>
Chapter 16      SIP Profiles on the Session Border Controller

Parameter Profiles

Applying a Parameter Profile to a Header Profile

Perform this task to apply parameter profiles to a header profile.

SUMMARY STEPS

1. config
2. sbc service-name
3. sbe
4. sip header-profile header-profile-name
5. header header-name
6. parameter-profile parameter-profile-name
7. exit
8. exit
9. show services sbc sbc-name sbe sip header-profile \{profile-name\}

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 9</strong> show services sbc sbc-name sbe sip parameter-profiles</td>
<td>Displays a list of all configured parameter profiles.</td>
</tr>
<tr>
<td>Example: host1/Admin# show services sbc mysbc sbe sip parameter-profiles</td>
<td></td>
</tr>
<tr>
<td><strong>Step 10</strong> show services sbc sbc-name sbe sip essential-headers</td>
<td>Displays a list of the essential headers listed in Table 16-3.</td>
</tr>
<tr>
<td>Example: host1/Admin# show services sbc mysbc sbe sip essential-headers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config</td>
<td>Enters global configuration mode.</td>
</tr>
<tr>
<td>Example: host1/Admin# config</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the configuration mode of an SBC service.</td>
</tr>
<tr>
<td>Example: host1/Admin(config)# sbc mysbc</td>
<td>• Use the service-name argument to define the name of the service.</td>
</tr>
</tbody>
</table>
### Parameter Profiles

#### SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. adjacency sip adjacency-name
5. header-profile inbound profile-name
6. exit
7. show services sbc service-name sbe sip header-profile name

#### Command or Action

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>sbe</td>
<td>Enters the configuration mode of the signaling border element (SBE) function of the SBC.</td>
</tr>
<tr>
<td>4</td>
<td>sip header-profile header-profile-name</td>
<td>Enters the configuration mode for a header profile.</td>
</tr>
<tr>
<td>5</td>
<td>header header-name</td>
<td>Enters the header subcommand mode, where you specify the header type to match.</td>
</tr>
<tr>
<td>6</td>
<td>parameter-profile parameter-profile-name</td>
<td>Configures the parameter profile to apply when the header type is matched.</td>
</tr>
<tr>
<td>7</td>
<td>exit</td>
<td>Returns to the configuration mode for a header profile.</td>
</tr>
<tr>
<td>8</td>
<td>exit</td>
<td>Returns to the configuration mode for an SBC service.</td>
</tr>
</tbody>
</table>

### Associating with an Adjacency

#### SUMMARY STEPS

1. configure
2. sbc service-name
3. sbe
4. adjacency sip adjacency-name
5. header-profile inbound profile-name
6. exit
7. show services sbc service-name sbe sip header-profile name
SIP Header Public/Private IP Address Information Insertion

Softswitches require public IP address information in SIP messages to properly charge the related parties. You can use this feature to insert the public IP address for user equipment (UE) that is behind the Network Address Translation (NAT) devices into the SIP contact header as a “firewall” parameter.

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> configure</td>
<td>Enables global configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin# configure</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> sbc service-name</td>
<td>Enters the mode of an SBC service. Use the service-name argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config)# sbc mysbc</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> sbe</td>
<td>Enters the mode of an SBE entity within an SBC service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc)# sbe</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> adjacency sip adjacency-name</td>
<td>Enters the mode of an SBE SIP adjacency. Use the adjacency-name argument to define the name of the service.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe)# adjacency sip sipGW</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> header-profile inbound profile-name</td>
<td>Sets profile1 to be used for inbound signaling on adjacency sipGW.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound profile1</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> exit</td>
<td>Exits the header profile mode to the sbe mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr-prf)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> show services sbc sbc-name sbe sip header-profile name</td>
<td>Displays the header profile information.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin# show services sbc sbc-name sbe sip header-profile name</td>
<td></td>
</tr>
</tbody>
</table>
SIP Header Public/Private IP Address Information Insertion

Perform this task to configure SIP Header Public/Private IP Address Information Insertion.

**SUMMARY STEPS**

1. config
2. sbc service-name
3. sbe
4. sip parameter-profile profile-name
5. parameter {parameter name}
6. action {add-not-present [value] [private-ip-address | public-ip-address | access-user-data] | add-or-replace [value] [private-ip-address | public-ip-address | access-user-data] | strip}
7. sip parameter-profile profile-name
8. exit
9. parameter {parameter name}
10. action {add-not-present [value] [private-ip-address | public-ip-address | access-user-data] | add-or-replace [value] [private-ip-address | public-ip-address | access-user-data] | strip}
11. sip header-profile profile-name
12. exit
13. header header-name
14. entry entry_num {action [add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip] | parameter-profile name}
15. parameter-profile name
16. sip header-profile profile-name
17. header header-name
18. entry entry_num {action [add-header | as-profile | drop-msg | pass | replace-name | replace-value | strip] | parameter-profile name}
19. parameter-profile name

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Enters global configuration mode.</td>
</tr>
<tr>
<td>config</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin# config</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Enters the configuration mode of an SBC service.</td>
</tr>
<tr>
<td>sbc service-name</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Admin(config)# sbc mysbc</td>
</tr>
<tr>
<td></td>
<td>• Use the <code>service-name</code> argument to define the name of the service.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Step 3</strong>  sbe</td>
<td>Enters the configuration mode of the signaling border element (SBE) function of the SBC.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc)# sbe</td>
</tr>
<tr>
<td><strong>Step 4</strong> sip parameter-profile (profile-name)</td>
<td>Configures a parameter profile and enters SBE SIP header configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe)# sip parameter-profile proxy-param</td>
</tr>
<tr>
<td><strong>Step 5</strong> parameter (parameter name)</td>
<td>Adds a parameter with a specified name to the parameter profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe-sip-prm)# parameter firewall</td>
</tr>
<tr>
<td><strong>Step 6</strong> action (add-not-present [value] {private-ip-address</td>
<td>public-ip-address</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe-sip-prm-ele)# action-strip</td>
</tr>
<tr>
<td><strong>Step 7</strong> sip parameter-profile (profile-name)</td>
<td>Configures a parameter profile and enters SBE SIP header configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe)# sip parameter-profile access-param</td>
</tr>
<tr>
<td><strong>Step 8</strong> exit</td>
<td>Exits the .</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe-sip-mth-prf)# exit</td>
</tr>
<tr>
<td><strong>Step 9</strong> parameter (parameter name)</td>
<td>Adds a parameter with a specified name to the parameter profile.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe-sip-prm)# parameter firewall</td>
</tr>
<tr>
<td><strong>Step 10</strong> action (add-not-present [value] {private-ip-address</td>
<td>public-ip-address</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>host1/Adm(config-sbc-sbe-sip-prm-ele)# action add-or-replace value private-ip-address</td>
</tr>
</tbody>
</table>
### Chapter 16      SIP Profiles on the Session Border Controller

#### SIP Header Public/Private IP Address Information Insertion

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 11</strong> sip header-profile profile-name action as-profile</td>
<td>Configures a header profile. If you enter the <em>profile-name default</em>, the default profile is configured. This profile is used for all adjacencies which do not have a specific profile configured.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe)# sip header-profile proxy</td>
<td></td>
</tr>
<tr>
<td><strong>Step 12</strong> exit</td>
<td>Exits the .</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-mth-prf)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 13</strong> header name</td>
<td>Configures the profile to contain the header test1.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr)# header contact</td>
<td></td>
</tr>
<tr>
<td><strong>Step 14</strong> entry entry_num (action [add-header</td>
<td>as-profile</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr-ele)# entry 1 action as-profile</td>
<td></td>
</tr>
<tr>
<td><strong>Step 15</strong> parameter-profile parameter-profile-name</td>
<td>Configures the parameter profile to apply when the header type is matched.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile proxy-param</td>
<td></td>
</tr>
<tr>
<td><strong>Step 16</strong> sip header-profile profile-name</td>
<td>Configures a header profile. If you enter the <em>profile-name default</em>, the default profile is configured. This profile is used for all adjacencies which do not have a specific profile configured.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe)# sip header-profile access</td>
<td></td>
</tr>
<tr>
<td><strong>Step 17</strong> header name</td>
<td>Configures the profile to contain the header test1.</td>
</tr>
<tr>
<td><strong>Example:</strong> host1/Admin(config-sbc-sbe-sip-hdr)# header contact</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 16      SIP Profiles on the Session Border Controller

Configuration Examples for SIP Profiles

This section contains the following:

- Method-Profile Examples, page 16-33
- Applying Method-Profiles Example, page 16-34
- Associating Predefined Header Profiles Example, page 16-35
- Associating Predefined Parameter Profiles Example, page 16-35
- Associating Response Code Mapping Example, page 16-36
- Configuring Header Profiles Example, page 16-37
- Applying Header Profiles Example, page 16-37
- Header Manipulation Examples, page 16-38
- Response Filtering Example, page 16-44
- Parameter Profile Examples, page 16-44
- SIP Header Public/Private IP Address Information Insertion, page 16-48

Method-Profile Examples

The following example shows the commands and output generated when you configure method-profiles.

```
host1/Admin# conf t
Router/Admi(config)# sbc umsbc-node3
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# sip method-profile test1
Router/Admi(config-sbc-sbe-sip-mth)# method abcd
Router/Admi(config-sbc-sbe-sip-mth)# blacklist
Router/Admi:Nov 13 17:43:11.124 : config[65761]: %MGBL-CONFIG-6-DB_COMMIT : Configuration committed by user 'yunsun'. Use 'show configuration commit changes 1000000296' to view the changes.
Router/Admi(config-sbc-sbe-sip-mth)# end
```
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Configuration Examples for SIP Profiles

This example shows the output for all method-profiles.

Router/Admin# show services sbc test sbe sip method-profiles
Method profiles for SBC service 'test'

<table>
<thead>
<tr>
<th>Name</th>
<th>In use</th>
</tr>
</thead>
<tbody>
<tr>
<td>test</td>
<td>No</td>
</tr>
<tr>
<td>mprof1</td>
<td>No</td>
</tr>
<tr>
<td>default</td>
<td>Yes</td>
</tr>
<tr>
<td>preset-acc-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-std-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-acc-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-std-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-core-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-core-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ipsec-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ipsec-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-ext-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-int-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-utr-in-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-ext-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-int-out-mth</td>
<td>No</td>
</tr>
<tr>
<td>preset-ibcf-utr-out-mth</td>
<td>No</td>
</tr>
</tbody>
</table>

This example shows the output for the method-profiles test.

Router/Admin# show services sbc test sbe sip method-profile test
Method profile 'test'
  Description:
    Type: Whitelist
    Methods:
      INVITE
        action as-profile
        map-status-code
          range 50X value 500
          range 60X value 600
        Not in use with any adjacencies

Applying Method-Profiles Example

The following example shows the commands and output generated when you are applying a method-profile to an SBC.

Router/Admi# conf t
Router/Admi(config)# sbc umsbc-node3
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# adjacency sip sipp-10
Router/Admi(config-sbc-sbe-adj-sip)# method-profile inbound test1
Router/Admi:Nov 13 17:44:28.609 : config[65761]: %MGBL-CONFIG-6-DB_COMMIT : Configuration committed by user 'yunsun'. Use 'show configuration commit changes 1000000297' to view the changes.
Router/Admi(config-sbc-sbe-adj-sip)# end
Router/Admi:Nov 13 17:44:31.637 : config[65761]: %MGBL-SYS-5-CONFIG_I : Configured from console by yunsun
Router/Admi# sh services sbc umsbc-node3 sbe sip method-profiles
Method profiles for SBC service "umsbc-node3"

<table>
<thead>
<tr>
<th>Name</th>
<th>In use</th>
</tr>
</thead>
<tbody>
<tr>
<td>test1</td>
<td>Yes</td>
</tr>
<tr>
<td>testb</td>
<td>No</td>
</tr>
</tbody>
</table>

Router/Admi# show services sbc umsbc-node3 sbe sip method-profile test1

Method profile "test1"

Type: Blacklist
Methods: abcd
In use by:
   Adjacency: sipp-10 (in)

**Associating Predefined Header Profiles Example**

This example shows how to ensure that the parameter myparm=myvalue is added to the request-line of an INVITE:

First, configure a parameter-profile for myparm:

Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# sip parameter-profile parmprof1
Router/Admi(config-sbc-sbe-sip-prm)# parameter myparm
Router/Admi(config-sbc-sbe-sip-prm-ele)# action add-not-present value myvalue

Then configure and associate with a method-profile:

Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# sip method-profile mthdprof1
Router/Admi(config-sbc-sbe-sip-mth)# method INVITE
Router/Admi(config-sbc-sbe-sip-prm-ele)# parameter-profile parmprof1

Finally, associate with an adjacency:

Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# adjacency sip adj1
Router/Admi(config-sbc-sbe-adj-sip)# method-profile outbound mthdprof1

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0

At the outbound side:

INVITE sip:1234567@cisco.com;user=phone;myparm=myvalue SIP/2.0

**Associating Predefined Parameter Profiles Example**

The following example shows how to ensure P-Asserted-Identity is always passed in an INVITE if it contains user=phone.

First, configure a header profile which references a P-Asserted-Identity header:

Router/Admi# configure
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Configuration Examples for SIP Profiles

Configuration Examples for SIP Profiles

Then create and associate the header profile with a method-profile:

```
Router/Admi(config-sbc-sbe)# sip method-profile mthdprof1
Router/Admi(config-sbc-sbe-sip-mth)# method INVITE
Router/Admi(config-sbc-sbe-sip-prm-ele)# parameter-profile hdrprof1
```

Finally, associate with an adjacency:

```
Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# adjacency sip adj1
Router/Admi(config-sbc-sbe-adj-sip)# method-profile outbound mthdprof1
```

At the inbound side:

```
SIP/2.0 501 Not Implemented
```

At the outbound side:

```
SIP/2.0 500 Internal Server Error
```

Associating Response Code Mapping Example

The following example shows how to create a status-code map so that all 5XX responses to an INVITE are mapped to 500.

```
Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# sip method-profile mthdprof1
Router/Admi(config-sbc-sbe-sip-mth)# method INVITE
Router/Admi(config-sbc-sbe-sip-mth-ele)# map-status-code
Router/Admi(config-sbc-sbe-sip-mth-ele-map)# range 5XX value 500
```

Finally, associate with an adjacency:

```
Router/Admi# configure
Router/Admi(config)# sbc test
Router/Admi(config-sbc)# sbe
Router/Admi(config-sbc-sbe)# adjacency sip adj1
Router/Admi(config-sbc-sbe-adj-sip)# method-profile outbound mthdprof
```

At the inbound side:

```
SIP/2.0 501 Not Implemented
```

At the outbound side:

```
SIP/2.0 500 Internal Server Error
```
Configuring Header Profiles Example

The following example shows the commands and output generated when you configure the header profiles.

```bash
host1/Admin(config)# sbc umsbc-node3 sbe
host1/Admin(config-sbc-sbe)# sip header-profile test1
host1/Admin(config-sbc-sbe-sip-hdr)# blacklist
host1/Admin(config-sbc-sbe-sip-hdr)# header abcd
host1/Admin# show serv sbc sbc4 sbe sip header-profile EXAMPLE

Header profile EXAMPLE
Type: Whitelist
Headers:
  Cisco-Guid
    Entry 1:
      action add-first-header
  User-Agent:
    Entry 1:
      action as-profile
  Remote-Party-ID
    Entry 1:
      action strip
      condition header-value contains user=phone
    Entry 2:
      parameter-profile adduser
  P-Asserted-Identity
    Entry 1:
      action strip
      condition header-value contains user=phone
  Organisation
    Entry 1:
      action replace-value value Cisco-Systems
      condition header-value contains MCI

In use by:
  Adjacency: callgen100sip (in, out)
```

Applying Header Profiles Example

The following example shows the commands and output generated when you are applying a header profile to an SBC.

```bash
host1/Admin# conf t
host1/Admin(config)# sbc umsbc-node3 sbe
host1/Admin(config-sbc-sbe)# adjacency sip sipp-10
host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound test1
host1/Admin(config-sbc-sbe-adj-sip)# header-profile outbound test1
host1/Admin# show services sbc umsbc-node3 sbe sip header-profile test1

Header profile "test1"
Type: Blacklist
Headers:
  abcd
In use by:
  Adjacency: sipp-10 (in, out)

show running-config

sbc umsbc-node3
sbe
activate
```
Header Manipulation Examples

The following example shows how to remove the header in any message if the header name test contains user=phone.

First, access the header:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header P-Asserted-Identity
host1/Admin(config-sbc-sbe-hdr-ele)# action strip
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition header-value contains user=phone
```

Next, associate the header with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:

```
P-Asserted-Identity: "rob" <sip:1234567@cisco.com;user=phone>
```

At the outbound side:

```
No P-Asserted-Identity header present
```

Add this condition in addition to a previous existing condition:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header P-Asserted-Identity
host1/Admin(config-sbc-sbe-hdr-ele)# entry 2
host1/Admin(config-sbc-sbe-hdr-ele)# action strip
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition header-value contains user=phone
```

Finally, associate the header profile with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
```
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Configuration Examples for SIP Profiles

host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1

At the inbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
... P-Asserted-Identity: "rob" <sip:1234567@cisco.com;user=phone>
At the outbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
...
"No P-Asserted-Identity header present"

The next example shows how to remove a header based on a condition in another header in the message. First, strip the P-Asserted-Identity header, but only if Call-Info: contains "telephone-event."

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header P-Asserted-Identity
host1/Admin(config-sbc-sbe-hdr-ele)# action strip
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition header-name Call-Info header-value contains telephone-event

Then associate the header-profile with an adjacency:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1

At the inbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
... P-Asserted-Identity: "rob" <sip:1234567@cisco.com;user=phone>
... Call-Info: <sip:8985010.131.132.6>;method="NOTIFY;Event=telephone-event;Duration=1000"

The result at the outbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
... "No P-Asserted-Identity header present"

The next example removes an Organisation header from all Responses:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header cisco.com
host1/Admin(config-sbc-sbe-hdr-ele)# action strip
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition status-code eq *

Associate the header-profile with an adjacency:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
At the inbound side:
SIP/2.0 200 OK
...
Allow: INVITE, ACK, PRACK, SUBSCRIBE, BYE, CANCEL, NOTIFY, INFO, REFER, UPDATE

At the outbound side:
SIP/2.0 200 OK
...
<No allow header present>

This example transforms one header into another header (Diversion into Hist-Info).

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header Diversion
host1/Admin(config-sbc-sbe-hdr-ele)# action replace-name value Hist-Info
```

Associate the header-profile with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
Diversion: <sip:1234567@cisco.com>;reason=unconditional;counter=1;privacy=off

At the outbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
Hist-Info: <sip:1234567@cisco.com>;reason=unconditional;counter=1;privacy=off

This example ensures all outgoing messages contain a specific header (Organization: Cisco.com).

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header Organization
host1/Admin(config-sbc-sbe-hdr-ele)# action add-first-header value cisco.com
```

Associate the header-profile with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...<no Organization header present>

At the outbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
...
Organization: cisco.com

This example blacklists a header (all instances are removed for any method/response).

```
Note
This can only be performed against a header-profile type of blacklist
```

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr-ele)# blacklist
host1/Admin(config-sbc-sbe-sbe-sip-hdr)# header Organization
Or:
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe-hdr-ele)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr-ele)# blacklist
host1/Admin(config-sbc-sbe-sbe-sip-hdr)# header Organization
host1/Admin(config-sbc-sbe-sbe-sip-hdr)# action as-profile
```

Associate the header-profile with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
...
Organization: cisco.com

At the outbound side:
INVITE sip:1234567@cisco,com;user=phone SIP/2.0
...
<no Organization: header present>

This example whilelists a header (pass in all methods/responses).

```
Note
This can only be specified against a whitelist type of profile
```

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr-ele)# header Organization
```
Or:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header Organization
host1/Admin(config-sbc-sbe-hdr-ele)# action as-profile
```

Associate the header-profile with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
Organization: cisco.com

At the outbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
Organization: cisco.com

This example passes a header (Date) conditionally in a 200 response.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header Date
host1/Admin(config-sbc-sbe-hdr-ele)# action pass
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition status-code eq 200
```

Associate with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:

Ensure no other responses contain a Date: header
SIP/2.0 200 OK
...
Date: Mon, 01 Jan 2008 GMT

At the outbound side:-

SIP/2.0 200 OK
...
Date: Mon, 01 Jan 2008 GMT

Also try all responses containing a Date: header and ensure the 200 OK only contains one:
This example strips all 'Organization' headers in an INVITE. To do this, a header-profile is created and then associated it with a method-profile.

Note
Header-profiles can be associated with vital (essential) methods.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headerprof1
host1/Admin(config-sbc-sbe-hdr)# blacklist
host1/Admin(config-sbc-sbe-hdr-ele)# header Organization

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip method-profile methodprof1
host1/Admin(config-sbc-sbe-sip-mth)# blacklist
host1/Admin(config-sbc-sbe-sip-mth)# method INVITE
host1/Admin(config-sbc-sbe-sip-mth-ele)# header-profile headerprof1

Associate with an adjacency:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# method-profile outbound methodprof1

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
Organization: cisco.com

At the outbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...
<no Organization: header present>

This example applies a parameter profile to add user=phone into the request-line of an INVITE.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip parameter-profile test
host1/Admin(config-sbc-sbe-sip-prm)# parameter user
host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-not-present value phone

Associate with a method-profile:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip method-profile test
host1/Admin(config-sbc-sbe-sip-mth)# method INVITE
host1/Admin(config-sbc-sbe-sip-mth-ele)# parameter-profile test

Associate with an adjacency:
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Configuration Examples for SIP Profiles

At the inbound side:

INVITE sip:1234567@cisco.com SIP/2.0

At the outbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0

Response Filtering Example

The following example drops SIP 183 provisional responses from a header profile based on matching the header * associated with inbound and outbound adjacencies.

First, create a header profile headprof1 to match on header * and drop the message:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-hdr)# header *
host1/Admin(config-sbc-sbe-hdr-ele)# action drop-msg
host1/Admin(config-sbc-sbe-hdr-ele-act)# condition status-code eq 183
```

Associate the profile headprof1 to the inbound side of an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adjacencyA
host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound headprof1
```

Associate the profile headprof1 to the inbound and outbound sides of another adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adjacencyB
host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound headprof1
host1/Admin(config-sbc-sbe-adj-sip)# header-profile outbound headprof1
```

Parameter Profile Examples

This example shows how to add a user=phone parameter into the To: header if one has not already been specified in a header.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
```

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Configuration Examples for SIP Profiles

host1/Admin(config-sbc-sbe)# sip parameter-profile parmprof1
host1/Admin(config-sbc-sbe-sip-prm)# parameter user
host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-not-present value phone

Now add to a header profile:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-sip-hdr)# header To
host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile parmprof1

Now associate with an adjacency:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com>;tag=1234;

At the outbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com;user=phone>;tag=1234

This example removes the 'user' parameter ('user=phone','user=fax' ...) from the To: header.

Add to a header profile:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip parameter-profile parmprof1
host1/Admin(config-sbc-sbe-sip-prm)# parameter user
host1/Admin(config-sbc-sbe-sip-prm-ele)# action strip

Finally, associate with an adjacency:

host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com;user=phone;tag=1234;
At the outbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...To: "rob" <sip:1234567@cisco.com>;tag=1234

This example shows how to replace 'user=phone' parameter with user=fax or to add user=fax if a user parameter is not present in the header.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip parameter-profile parmprof1
host1/Admin(config-sbc-sbe-sip-prm)# parameter user
host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-or-replace value fax
```

Add to a header profile:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-sip-hdr)# header To
host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile parmprof1
```

Finally, associate with an adjacency:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:

INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...To: "rob" <sip:1234567@cisco.com;user=phone;tag=1234;
At the outbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...To: "rob" <sip:1234567@cisco.com;user=fax>;tag=1234
Or:

At the inbound side:-
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
...To: "rob" <sip:1234567@cisco.com;tag=1234;
At the outbound side:-
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
To: "rob" <sip:1234567@cisco.com;user=fax>;tag=1234

The next example adds 'user=phone' parameter if one in not already present in the header.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip parameter-profile parmprof1
host1/Admin(config-sbc-sbe-sip-prm)# parameter user
host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-not-present value phone
```
Add parameter-profile to a header profile:

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip header-profile headprof1
host1/Admin(config-sbc-sbe-sip-hdr)# header To
host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile parmprof1
```

Finally, associate with an adjacency

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-sip)# header-profile outbound headprof1
```

At the inbound side:

```
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com;user=fax;tag=1234;
```

At the outbound side:

```
No parameter added as a user parameter already exists
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com>;tag=1234
```  

Or: -

```
At the inbound side:
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com;tag=1234;
```

At the outbound side:

```
INVITE sip:1234567@cisco.com;user=phone SIP/2.0
... To: "rob" <sip:1234567@cisco.com;user=phone>;tag=1234
```

---

**P-KT-UE-IP Header Support**

The following example shows how to remove any existing P-KT-UE-IP headers from all received messages and then replace them with a single P-KT-UE-IP header for INVITE and OOD requests. In the this example, the call is placed from adj1 to adj2.

The following shows how to configure a header profile with two entries. The first entry strips the "P-KT-UE-IP" header and the second entry adds the "P-KT-UE-IP" with a value set to the 18-character string $\{msg.rmt_ip_addr\}$.

```
host1/Admin(config-sbc-sbe)# sip header-profile kt
host1/Admin(config-sbc-sbe-sip-hdr)# header P-KT-UE-IP
host1/Admin(config-sbc-sbe-sip-hdr-ele)# entry 1 action strip
host1/Admin(config-sbc-sbe-sip-hdr-ele-act)# exit
host1/Admin(config-sbc-sbe-sip-hdr-ele)# entry 2 action add-header value $\{msg.rmt_ip_addr\}$
```
The following applies the above header profile to the incoming adjacency as an inbound header profile.

```
host1/Admin(config-sbc-sbe)# adjacency sip adj1
host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound kt
```

The following configures a header profile to allow pass-through of the "P-KT-UE-IP" header.

```
host1/Admin(config-sbc-sbe)# sip header-profile kt-pass
host1/Admin(config-sbc-sbe-sip-hdr)# header P-KT-UE-IP
host1/Admin(config-sbc-sbe-sip-hdr-ele)# action pass
```

The following applies the above header profile to the outgoing adjacency as an outbound header profile.

```
host1/Admin(config-sbc-sbe)# adjacency sip adj2
host1/Admin(config-sbc-sbe-adj-sip)# header-profile outbound kt-pass
```

### SIP Header Public/Private IP Address Information Insertion

The following example shows a SIP header public/private IP address information insertion.

The SIP parameter profile is added in order to remove the parameter.

```
host1/Admin# configure
host1/Admin(config)# sbc test
host1/Admin(config-sbc)# sbe
host1/Admin(config-sbc-sbe)# sip parameter-profile proxy-param
host1/Admin(config-sbc-sbe-sip-prm)# parameter firewall
host1/Admin(config-sbc-sbe-sip-prm-ele)# action strip

host1/Admin(config-sbc-sbe)# sip parameter-profile access-param
host1/Admin(config-sbc-sbe-sip-prm)# parameter firewall
host1/Admin(config-sbc-sbe-sip-prm-ele)# action add-or-replace value private-ip-address
```

The SIP header profile is added; the parameter profile is associated with the header profile.

```
host1/Admin(config-sbc-sbe)# sip header-profile proxy
host1/Admin(config-sbc-sbe-sip-hdr)# header contact
host1/Admin(config-sbc-sbe-sip-hdr-ele)# entry 1 action as-profile
host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile proxy-param

host1/Admin(config-sbc-sbe)# sip header-profile access
host1/Admin(config-sbc-sbe-sip-hdr)# header contact
host1/Admin(config-sbc-sbe-sip-hdr-ele)# entry 1 action as-profile
host1/Admin(config-sbc-sbe-sip-hdr-ele)# parameter-profile access-param
```

```
host1/Admin(config-sbc-sbe)# sip max-connections 2
host1/Admin(config-sbc-sbe)# sip timer
host1/Admin(config-sbc-sbe-sip-tmr)# tcp-idle-timeout 120000
host1/Admin(config-sbc-sbe-sip-tmr)# tls-idle-timeout 3600000
host1/Admin(config-sbc-sbe-sip-tmr)# tcp-connect-timeout 30000
host1/Admin(config-sbc-sbe-sip-tmr)# udp-response-linger-period 32000
host1/Admin(config-sbc-sbe-sip-tmr)# udp-first-retransmit-interval 500
host1/Admin(config-sbc-sbe-sip-tmr)# udp-max-retransmit-interval 4000
host1/Admin(config-sbc-sbe-sip-tmr)# invite-timeout 180
```

Below the SIP header is added to the SIP adjacency.

```
host1/Admin(config-sbc-sbe)# adjacency sip sip-41
host1/Admin(config-sbc-sbe-adj-sip)# header-profile inbound access
host1/Admin(config-sbc-sbe-adj-sip)# header-profile outbound proxy
host1/Admin(config-sbc-sbe-adj-sip)# preferred-transport udp
```
host1/Admin(config-sbc-sbe-adj-sip)# redirect-mode pass-through
host1/Admin(config-sbc-sbe-adj-sip)# authentication nonce timeout 300
host1/Admin(config-sbc-sbe-adj-sip)# signaling-address ipv4 10.140.90.6
host1/Admin(config-sbc-sbe-adj-sip)# signaling-port 5060
host1/Admin(config-sbc-sbe-adj-sip)# remote-address ipv4 0.0.0.0 0.0.0.0
host1/Admin(config-sbc-sbe-adj-sip)# signaling-peer 10.0.48.41
host1/Admin(config-sbc-sbe-adj-sip)# signaling-peer-port 5060
host1/Admin(config-sbc-sbe-adj-sip)# dbe-location-id 4294967295
host1/Admin(config-sbc-sbe-adj-sip)# registration rewrite-register
host1/Admin(config-sbc-sbe-adj-sip)# reg-min-expiry 3000
host1/Admin(config-sbc-sbe-adj-sip)# media-bypass
host1/Admin(config-sbc-sbe-adj-sip)# attach

call-policy-set 2
first-call-routing-table
first-reg-routing-table
rtg-src-adjacency-table
entry 1
action complete

dst-adjacency sip-proxy
match-adjacency sip-41
exit
complete
active-call-policy-set 2