



## 100rel Interworking Support

Cisco Unified Border Element (SP Edition) provides support for 100rel (SIP Provisional Message Reliability) interworking. This feature provides support to resolve the interoperability problem of inconsistent support for SIP reliable provisional responses encountered when SBC works with different SIP networks.

SIP defines two types of responses: provisional and final. Final responses (2xx-6xx) convey the result of the request processing and are sent reliably. SIP provisional responses (1xx) do not have an acknowledgement system so they are not reliable. There are certain scenarios in which the provisional SIP responses (1xx) must be delivered reliably. For example in a SIP/PSTN interworking scenario it is crucial that the 180 and 183 messages are not dropped. The use of the Provisional Response ACKnowledgment (PRACK) method enables reliability to be offered to SIP provisional responses.

The 100rel option is used to indicate that the reliable provisional responses are supported or required, and the PRACK message is used to acknowledge receipt of a reliable provisional response.



**Note**

This feature is supported in the unified model for Cisco IOS XE Release 2.5 and later.

Cisco Unified Border Element (SP Edition) was formerly known as Integrated Session Border Controller and may be commonly referred to in this document as the session border controller (SBC).

### Feature History for 100rel Interworking Support

Release	Modification
Cisco IOS XE Release 2.5	This feature was introduced on the Cisco IOS XR.

## Contents

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## Restrictions for 100rel Interworking Support

The following restrictions apply when you configure the 100rel interworking support on the Cisco Unified Border Element (SP Edition):

- If late to early media interworking is required, the callee must support reliable provisional responses, and the scenario shown in [Figure 30-1](#) must not be configured.
- The 100rel interworking allows only one offer exchange on PRACK messages for each INVITE transaction.
- The 100rel interworking is configured on the adjacency facing the network that requires 100rel support:
  - The Cisco Unified Border Element (SP Edition) configuration must be set up on the inbound adjacency of the applicable call to act as a PRACK User Agent Server (UAS) during 100rel interworking.
  - The Cisco Unified Border Element (SP Edition) configuration must be set up on the outbound adjacency of the applicable call to act as a PRACK User Agent Client (UAC) during 100rel interworking.
- The SIP uses provisional responses to avoid transaction time-out while the final response is outstanding, and reduces the frequency of these progress responses when they are sent reliably. This allows a B2BUA that receives unreliable progress responses and sends reliable progress responses to send progress responses less frequently than it receives them. Cisco Unified Border Element (SP Edition) does not attempt to do this, it simply forwards provisional responses when they are received (subject to any configured header filtering rules).

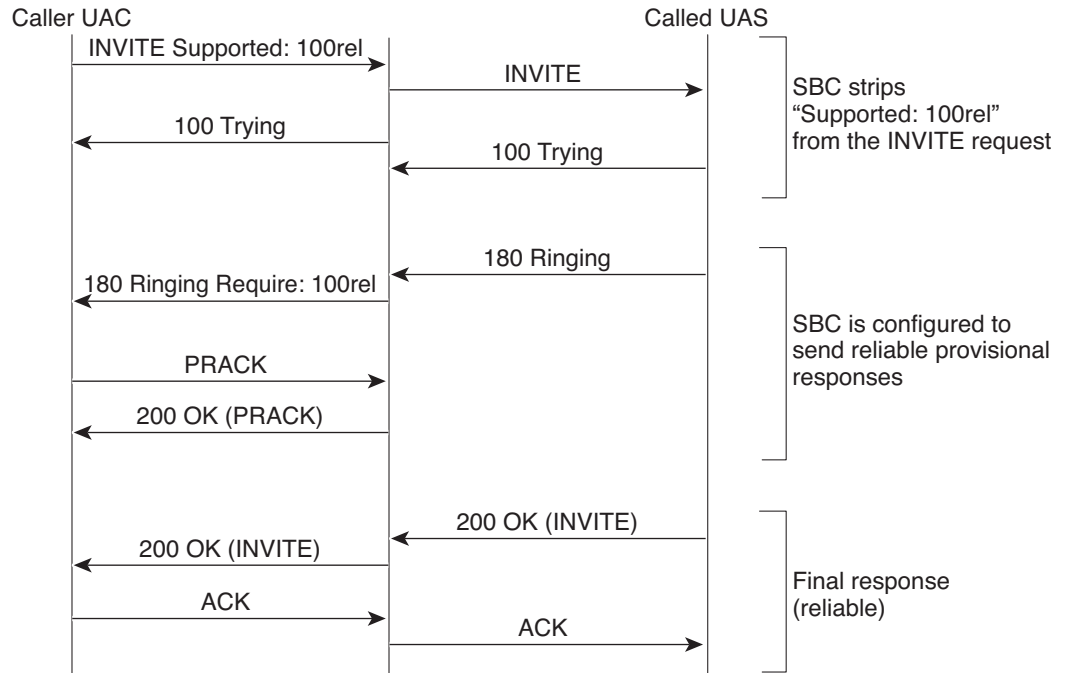
## Information About 100rel Interworking Support

The 100rel interoperability feature performs the following functions on individual SIP adjacencies:

- Strips the 100rel option from incoming SIP requests.
- Sends reliable provisional responses to the caller UAC even when the responses from the called UAS are unreliable.
- Receives reliable provisional responses from the called UAS even if the caller UAC does not support them.
- Adds support for the 100rel option to outgoing SIP requests.

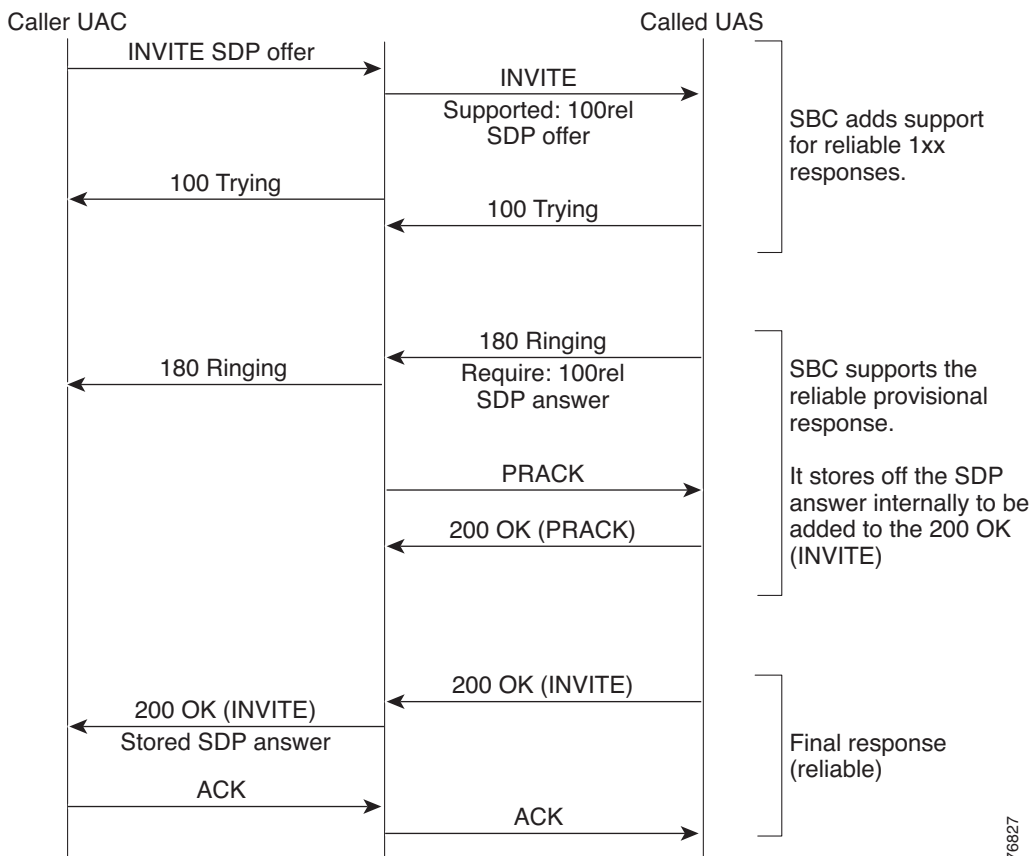
[Figure 30-1](#) shows SBC acting as UAS, and [Figure 30-2](#) shows SBC acting as UAC.

**Figure 30-1 SBC Acting as UAS**



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Figure 30-2 SBC Acting as UAC



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## Caller UAC Requires 100rel

Cisco Unified Border Element (SP Edition) sets up calls from a network that requires 100rel, but needs to be routed to networks that do not support 100rel. To facilitate this, SBC strips the 100rel option from Supported and Require headers in SIP requests. After stripping the 100rel option, SBC still sends reliable provisional responses with a “Require: 100rel” header if required. Cisco Unified Border Element can also be configured to send reliable provisional responses to requests that include a "Supported: 100rel" header when such requests do not include a "Require: 100rel" header and responses are received as unreliable provisional responses.

### Send Reliable Responses if Required

If a SIP request includes a “Require: 100rel” header and SBC strips the 100rel option then it must send provisional responses as reliable provisional responses with a “Require: 100rel” header. In this case the called UAS sends unreliable provisional responses because SBC has stripped the 100rel option from the request.

### Send Reliable Responses if Supported

If a SIP request includes a “Supported: 100rel” header then SBC must send reliable provisional responses to the caller UAC even when the SIP request does not include a “Require: 100rel” header and the called UAS sends unreliable provisional responses.

## Callee UAS Requires 100rel

Cisco Unified Border Element (SP Edition) sends requests to networks that require 100rel from networks that do not. To facilitate this, the following functions are required:

### Advertise Support for 100rel

SIP Requests passing through SBC should have “Supported: 100rel” header added to them.

### Remove 100rel from Responses

If SBC advertises support for 100rel, then it also ensures that the non-PRACK network receives non-100rel messages.

## Configuring 100rel Interworking Support

Cisco Unified Border Element (SP Edition) requires following configurations to enable 100rel interworking support:

- The configuration is applied to SIP adjacencies.
- At the incoming side, two flags are configured to indicate,
  - whether to strip 100rel option from Supported and Require headers in the incoming SIP INVITE request.
  - whether to enable 100rel interworking if incoming SIP INVITE request contains “Supported:100rel” header.
- At the outgoing side, two flags are configured to:
  - add “Supported:100rel” in the outgoing SIP INVITE request.
  - add “Require:100rel” in the outgoing SIP INVITE request.

This section contains the steps to configure the 100rel interworking support.

### SUMMARY STEPS

1. **configure terminal**
2. **sbc *sbc-name***
3. **sbe**
4. **adjacency sip *adjacency-name***
5. **100rel inbound {strip | support}**
6. **100rel outbound {require-add | support-add}**
7. **end**
8. **show sbc *sbc-name* sbe adjacencies {*adjacency-name*} [detail]**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>configure terminal</b>  <b>Example:</b> Router# config terminal	Enters global configuration mode.
Step 2	<b>sbc <i>sbc-name</i></b>  <b>Example:</b> Router(config)# sbc test	Enters session border controller (SBC) configuration submode.
Step 3	<b>sbe</b>  <b>Example:</b> Router(config-sbc)# sbe	Enters signaling border element (SBE) configuration submode.
Step 4	<b>adjacency sip <i>adjacency-name</i></b>  <b>Example:</b> Router(config-sbc-sbe)# adjacency sip adj1	Enters adjacency SIP configuration submode.
Step 5	<b>100rel inbound {strip   support}</b>  <b>Example:</b> Router(config-sbc-sbe-adj-sip)# 100rel inbound strip Router(config-sbc-sbe-adj-sip)# 100rel inbound support	Configures the 100rel interworking parameters for inbound SIP adjacencies on signaling border elements (SBEs).
Step 6	<b>100rel outbound {require-add   support-add}</b>  <b>Example:</b> Router(config-sbc-sbe-adj-sip)# 100rel outbound require-add Router(config-sbc-sbe-adj-sip)# 100rel outbound support-add	Configures the 100rel interworking parameters for outbound SIP adjacencies on signaling border elements (SBEs).
Step 7	<b>end</b>  <b>Example:</b> Router(config-sbc-sbe)# end Router(config-sbc)#	Returns to the privileged EXEC mode.
Step 8	<b>show sbc <i>sbc-name</i> sbe adjacencies {<i>adjacency-name</i>} [detail]</b>  <b>Example:</b> Router# show sbc test sbe adjacencies adj1 detail	Lists the adjacencies configured on signaling border elements (SBEs).