



Cisco Unified Border Element (SP Edition) Overview

This chapter presents an overview of Cisco Unified Border Element (SP Edition) on the Cisco ASR 1000 Series Aggregation Services Routers—its signaling and media functions, unified and distributed deployment models, supported features, and supported MIBs.

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).

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Cisco Unified Border Element (SP Edition) on the Cisco ASR 1000 Series Routers

Cisco Unified Border Element (SP Edition) enables direct IP-to-IP interconnect between multiple administrative domains for session-based services providing protocol interworking, security, and admission control and management. Cisco Unified Border Element (SP Edition) is a voice over IP (VoIP) device that sits on the border of a network and controls call admission to that network.

Cisco Unified Border Element (SP Edition) protects the interior of the network from excessive call load and malicious traffic. Cisco Unified Border Element (SP Edition) provides additional functions such as media bridging and billing services.

Cisco Unified Border Element (SP Edition) is integrated into the Cisco IOS Software and does not require any additional hardware to run.

The SBC service includes two functional areas:

- **Signaling SBC function**—Managed by the signaling border element (SBE), controls access of VoIP signaling messages to the core of the network, and manipulates the contents of these messages. It does this by acting as a Session Initiation Protocol (SIP) back-to-back user agent (B2BUA).

- Media SBC function—Managed by the data border element (DBE), controls access of media packets to the network, provides differentiated services and quality of service (QoS) for different media streams, and prevents service theft. It does this by acting as a real-time transport protocol (RTP) proxy.

For Cisco IOS XE Release 2.4, Cisco Unified Border Element (SP Edition) can operate in two modes or deployment models:

- Unified—In the unified model, both the SBE and DBE logical entities co-exist on the same network element. In this model, the signaling entity controls the media local to the router. Simply put, the SBE handles the SIP and H.323 packets and the DBE handles the RTP and RTCP packets.
- Distributed—In the distributed model, the SBE and the DBE entities reside on two different network elements. Logically, each of the SBE entities controls multiple DBE elements, and each DBE could be controlled by multiple SBE entities. The SBE interacts with the DBE entities using a session controller interface (SCI). The SCI interface supports the H.248 protocol.

In this model, the bearer always flows through the DBE, and the SBE participates only in the signaling flow. This model is typically used in conjunction with a third-party SBE that supports the DBE H.248 profile.

**Note**

It is important to note that the DBE configuration is still required when running in the unified model because the DBE configuration provides the information necessary for the RTP media to flow.

**Note**

For Cisco IOS XE Release 2.3 and earlier, the SBC supports only DBEs in the distributed model.

Figure 2-1 illustrates the unified mode. Figure 2-2 illustrates the relationships between SBEs, DBEs, and other network elements.

Figure 2-1 Relationships Between SBEs/DBEs and Other Network Elements in the Unified Model

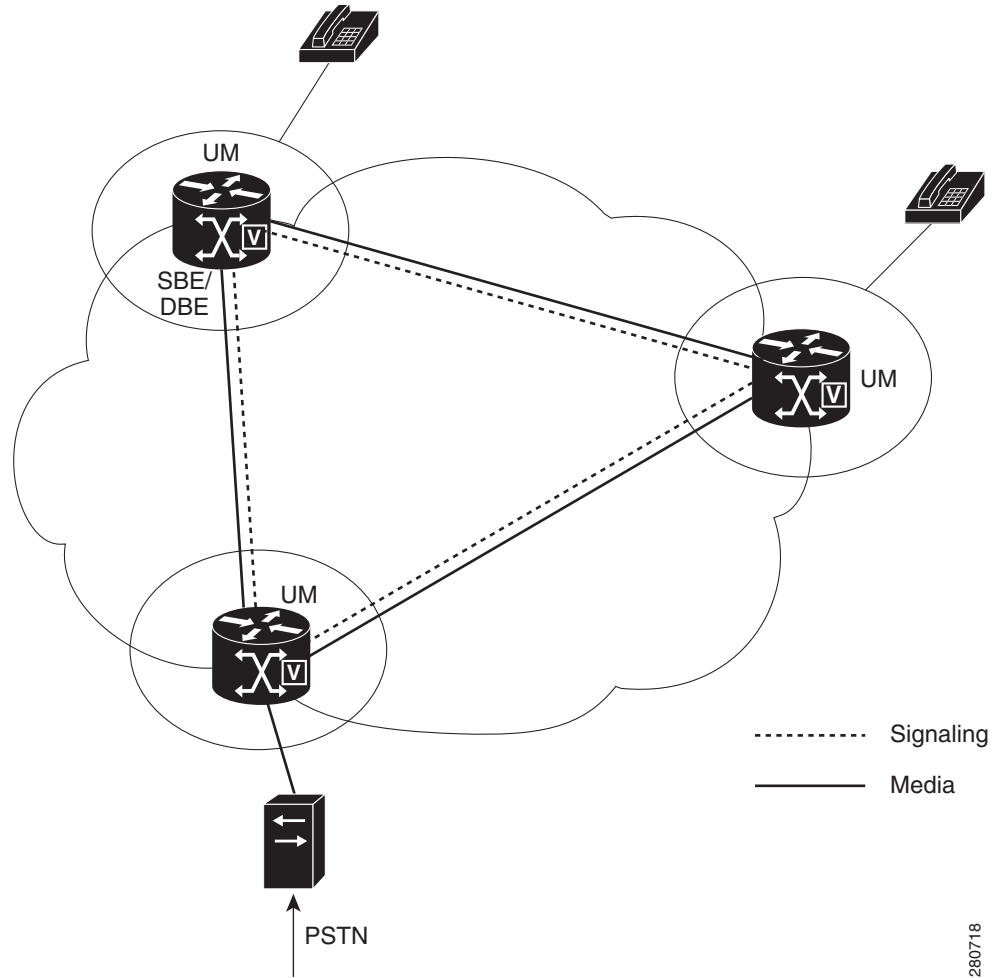
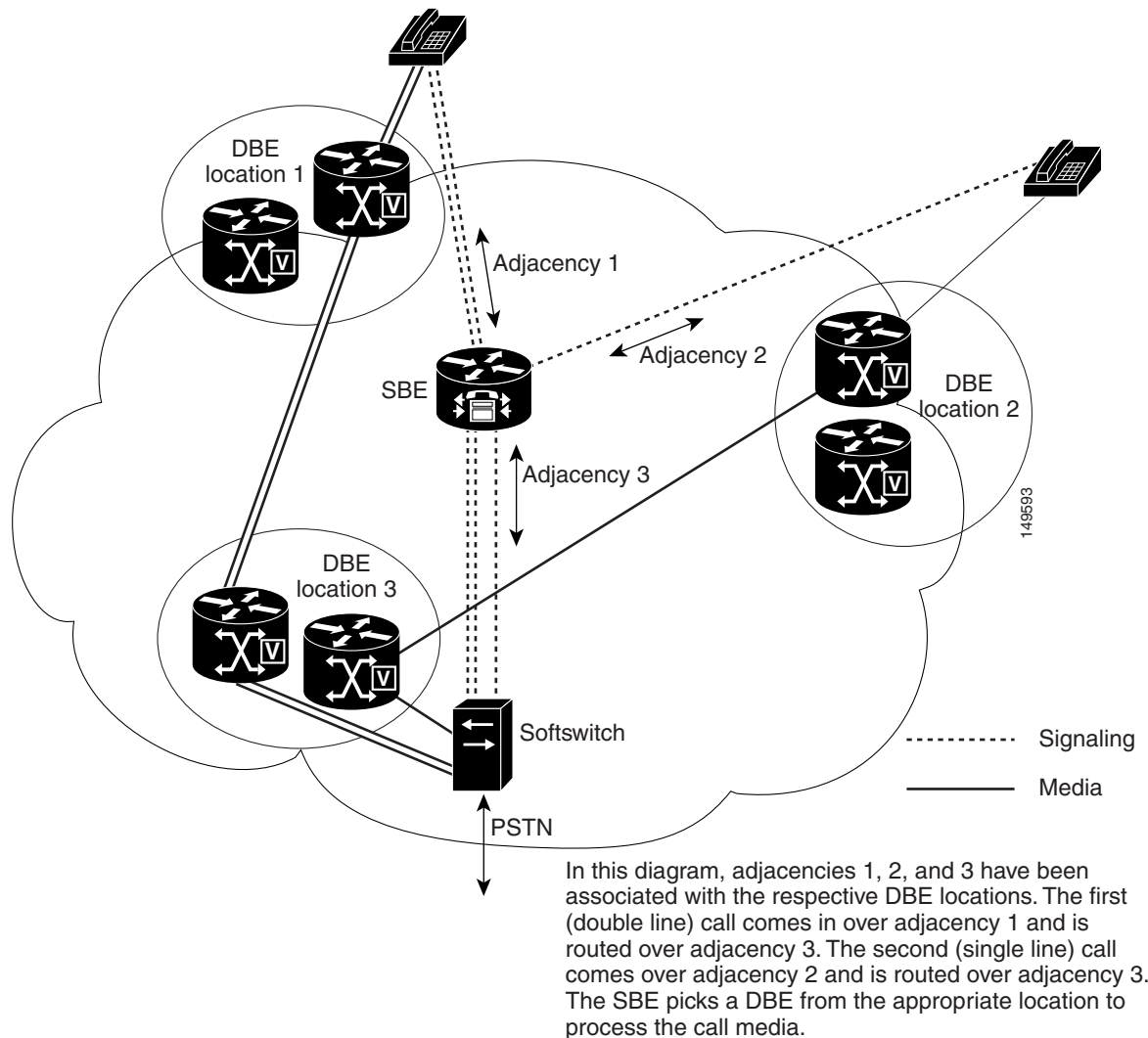


Figure 2-2 Relationships Between SBEs/DBEs and Other Network Elements in the Distributed Model



Cisco Unified Border Element (SP Edition) on the Cisco ASR 1001 Series Routers

Table 2-1 list the scaling and performance that is supported on the Cisco ASR 1001 Series Routers.

Table 2-1 *Scaling and Performance Supported on Cisco ASR 1001 Series Routers*

Platform	HT=180	RP CPU	QFP CPU	Degradation CPS %	Reasons for Congestion	Memory Setup	Throughput Value	Feature
ASR 1001 1 RU	CPS=60	33%	40%	NA	Memory	Default	5000K	NA
ASR 1001 1 RU	CPS=57	66%	78%	NA	Memory	Default	2500L	NA

Supported MIBs

The following MIBs are supported Cisco IOS XE Release 2.4 and later for the SBC on the Cisco ASR 1000 Series Router:

- CISCO-SESSION-BORDER-CONTROLLER-EVENT-MIB
- CISCO-SESSION-BORDER-CONTROLLER-CALL-STATS-MIB

For more information about MIB support on a Cisco ASR 1000 Series Routers, refer to the *Cisco ASR 1000 Series Aggregation Services Routers MIB Specifications Guide* at:

<http://www.cisco.com/en/US/docs/routers/asr1000/mib/guide/asr1kmib.html>

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you.

