

Routing and Policy Management

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SBC 5000 series and SBC 7000 routing and policy management involves high performance SIP routing with scalable routing policies for service provider and enterprise networks.

Key Features

- Screening, blocking, routing, presentation, call type filters
- Route prioritization
- Leading digit routing; International routing; URI based routing
- Digit/parameter manipulation
- E911 support; Priority Call handling
- Toll-free routing
- Least cost routing
- Number portability

Policy Server Modes

The SBC 5000 series and SBC 7000 servers provide the following three routing and policy management options for your network:

1. **Embedded Routing Engine (ERE)** – ERE provides less routing and policy management functionality and is intended for smaller networks with no complex routing needs.
2. **External Sonus Policy Server (PSX)** – SBC is configurable to interact with one or more (up to nine) centralized external Sonus Policy Server (PSX), the embedded routing engine (ERE) or a combination of external PSXs and ERE.

Table 1: Policy Server Modes

Configuration	Basic ERE	Advanced ERE	Centralized External PSX
Number of SBCs Deployed (Small: 1-3, Large: more than 3)	Small	Small	Large
Routing Complexity	Simple	Complex	Complex

For performance and capacity comparison of ERE and PSX, refer to [Routing Engines Comparison](#).

Deployment Scenarios

SBC ERE

Basic and Advanced ERE

The ERE provides less routing and policy management functionality and is intended for smaller networks with no complex routing needs. Basic ERE is the default routing engine on the SBC 5000 series for performing basic call routing services.

The ERE can be installed by selecting the embedded routing engine (ERE) option while installing the SBC application using the EMA Platform Mode. For more information on installing SBC application (ERE Configuration), refer to [Installing SBC Application Using the ERE](#).

Figure 1: SBC with ERE



The Advanced ERE is a licensed option for customers requiring expanded routing functionality.

Table 2: Basic ERE vs. Advanced ERE

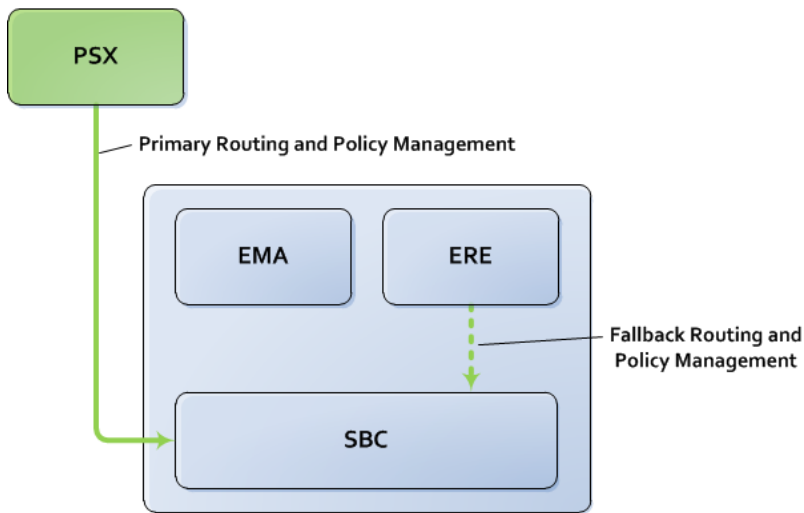
Features	Basic-ERE	Advanced-ERE
Maximum Number of Routes	2,000	100,000
Route Prioritization	Route prioritization	Route prioritization with more parameters such as Time of Day and overflow routing.
Routing Mechanisms	Routing mechanisms such as User Name and Standard Destination Based Routing.	Routing mechanisms such as User Name, Standard Destination Based Routing, Call Type, Digit Type and Time Range.
Call Screening and Blocking Services	Not applicable	Call screening and call blocking services to enable a carrier to restrict calls based on either origination, destination or both.

ERE With External PSX

You can configure the SBC to use an external PSX for routing and the ERE for fallback routing. When the external PSX is up and running, all routing is handled by the external PSX and ERE routing configurations are ignored.

Thus, in the unlikely event that the external PSX goes down, you can fall back to ERE routing by simply setting the SBC's remote server state to 'disabled' from the EMA UI.

Figure 2: ERE With External PSX



To set up an external PSX for routing, perform the following:

1. Configure remote server from EMA (refer to [Policy Server - Remote Server](#) for details).
 - a. Navigate to **Configuration > SystemSetup** tab.
 - b. Click the arrow next to **Policy Server** perspective in the navigation panel, and select **Remote Server** option. The "Remote Server" configuration window displays.
 - c. Configure the remote policy server settings to use the external PSX.
2. Provision routing for the SBC in the external PSX using the PSX Manager.
3. Provision routing from EMA (refer to [Category - Call Routing](#) for details).
 - a. Navigate to **Configuration > System Provisioning** tab.
 - b. From the Category drop-down menu, select **Call Routing**.
 - c. Choose applicable perspectives to provision routing using ERE.

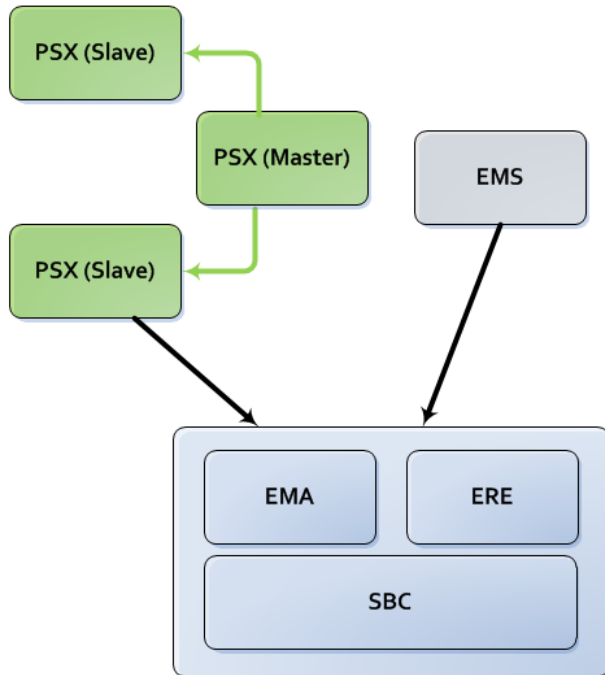
i For more information on the routing and policy management features supported by ERE, refer to [Routing Engines Comparison](#).

Centralized PSX

The centralized PSX server combines call routing functionality with exceptional capacity of storing tens of millions of call routes in a single database. This SBC-Centralized PSX deployment distributes that routing intelligence to every PSX server in the network and simplifies the provisioning process. For more information on Sonus Policy Server (PSX), refer to the [Policy Server \(PSX\) Documentation](#).

The following figure depicts the SBC deployed with external PSX and EMS.

Figure 3: SBC with External PSX and EMS



To configure external PSXs as Active and Standby remote policy servers from the SBC 5000 series or SBC 7000 server, refer to [Configuring SBC to Use External PSX](#).

Configurations Controlled by PSX

The following SBC configuration objects are controlled by the PSX.

- Call Parameter Filter Profile
- Carrier (Global object)
- Class of Service
- Codec Entry
- Codec List Profile
- Codec Routing Priority
- Country (Global object)
- Crypto Suite Profile
- DM/PM Criteria (Digit Parameter Handling object)
- DM/PM Rule (Digit Parameter Handling object)
- e911 (Servers object)
- e911VpcDevice (Servers object)
- Element Routing Priority Profile
- Enum Domain (Servers object)
- Enum Service (Servers object)
- Feature Control Profile
- Holiday Profile
- IP Signaling Peer Group
- Ip Signaling Profile
- Media Qos KPI Profile
- Call Routing
- NPA/Nxx (Global object)
- Number Globalization Profile
- Numbering Plan (SIP Trunk Group Policy)
- Number Translation Criteria (Digit Parameter Handling object)

- Packet Service Profile
- Prefix Profile (Digit Parameter Handling object)
- Route (Call Routing object)
- Routing Label (Call Routing object)
- Script (Global object)
- Signaling Profile
- Signaling QoS KPI Profile
- SIP Domain (Global object)
- Subscriber (Global object)
- Time Range Profile

