

# Implementing SBC Redundancy—High Availability

The Session Border Controller (SBC) on the Cisco 7600 series routers supports intra-chassis and inter-chassis redundancy. You can configure a maximum of two SBCs services in the same Cisco 7600 series router or in a different chassis for redundancy.

SBC fault tolerant redundancy is based on a 1:1 paired protection model. For each active service card running with the SBC, there should be another service card providing failure protection (that is, standby). The same services must be provisioned on both cards (one as the primary card, one as the standby card); in this instance, the service cards are described as “paired.”

From a Cisco IOS system perspective, service cards are always running in active mode. SBC services running on these cards, however, run as either a primary service or standby service.

In the distributed model, data border element (DBE) services run as separate Cisco Data Center Operation System (DCOS) processes (and there may be one or more distributed DBEs per SBE). When running in this mode, DBE services may be provisioned on different cards within the same physical device to distribute the processing load across available service cards.



**Note** For ACE SBC Release 2.0.00, only DBE services are implemented.



**Note** For ACE SBC Release 3.0.00, this feature is supported in both the unified model and the distributed model.

The active SBC replicates the state to the standby to provide hot standby support. The SBC process is fate shared with the Media Packet forwarder component; if one component restarts, the other component will restart.



**Note** For a description of commands used in this chapter, refer to the *Application Control Engine Module Command Reference* at:  
[http://www.cisco.com/en/US/products/hw/modules/ps2706/products\\_command\\_reference\\_book09186a0080685244.html](http://www.cisco.com/en/US/products/hw/modules/ps2706/products_command_reference_book09186a0080685244.html).

### Feature History for Implementing SBC Redundancy

Release	Modification
ACE SBC Release 3.1.00	Added support for inter-chassis redundancy.

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ACE SBC Release 3.0.00 Added support for SBC unified model.

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ACE SBC Release 2.0.00 This feature was introduced on the Cisco 7600 series router for DBEs.

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## Prerequisites—Implementing Redundancy

The following prerequisites are required to implement SBC redundancy:

- On the Application Control Engine Module (ACE), you must be an Admin user to enter SBC commands. For more information, see the *Application Control Engine Module Administration Guide* at: [http://www.cisco.com/en/US/products/hw/modules/ps2706/products\\_configuration\\_guide\\_book09186a00806838f4.html](http://www.cisco.com/en/US/products/hw/modules/ps2706/products_configuration_guide_book09186a00806838f4.html)
- Before configuring SBC service, the fault tolerant (redundancy) configuration must already be created. See the procedures described in [Chapter 2, “ACE Configuration Prerequisites for the SBC”](#).

SBC fault tolerance is based on a 1:1 paired-protection model. For each ACE module running active SBC components, there can be one ACE module providing failure protection. The same services must be provisioned on both ACE modules (one as the primary card, one as the standby card), and the ACE modules are then said to be paired. Although from a Cisco IOS system perspective, ACE modules are always running in active mode, SBC services running on these cards run as either the primary service or the standby service.

## Implementing Redundancy on the ACE Module

In ACE SBC Release 3.0.00, FT group 1 is always associated with the Admin context.



**Note**

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The priority for all FT groups should be the same.

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**Note**

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With VRFs, there is one FT group per-context.

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**Note**

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You can configure a maximum of two ACE appliances (peers) for redundancy. Each peer appliance can contain one or more fault-tolerant (FT) groups. Each FT group consists of two members: one active context and one standby context. An FT group has a unique group ID that you assign.

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One virtual MAC address (VMAC) is associated with each FT group and is used as the virtual MAC address for all alias addresses, on all VLANs in the context under which the ft-group is configured. The

format of the VMAC is: 00-0b-fc-fe-1b-groupID. Because a VMAC does not change upon switchover, the client and server ARP tables does not require updating. To avoid duplicate MAC issues, each pair of ACE cards connected to the same subnet(s) should use unique FT group IDs.

For information on configuring redundancy on the ACE modules, see *Configuring Redundant ACE Modules at* [http://www.cisco.com/en/US/products/hw/modules/ps2706/products\\_configuration\\_guide\\_chapter09186a0080683a15.html](http://www.cisco.com/en/US/products/hw/modules/ps2706/products_configuration_guide_chapter09186a0080683a15.html).

**Note**

In the current release, both heartbeat interval and count number are fixed and cannot be changed by a user.

## Redundancy Configuration Example

The following is an example of an SBC redundancy configuration:

```

On the supervisor
  Svcld mod 3 vlan-group 10      !!! create vlan group 10
  Svcld vlan-group 10 50,60,70  !!! bind vlan 50, 60 and 70 in same vlan
gr 10
  Svcld multiple-vlan-interfaces

On ACE location 1
  (On Admin context)

  interface vlan 60              !!! config vlan and alias
  ip address 60.60.60.60 255.255.255.0
  alias 60.60.60.62 255.255.255.0
  peer ip address 60.60.60.61 255.255.255.0
  no shutdown

  ft interface vlan 50           !!! config vlan 50
  ip addr ip addr 50.50.50.50 255.255.255.0
  peer ip addr 50.50.50.51 255.255.255.0
  no shut

  ft peer 1                      !!! config peer 1
  heartbeat interval 300
  heartbeat count 10
  ft-interface vlan 20
  query-interface vlan 60

  ft group 1                      !!! config ft group 1
  peer 1
  associate-context Admin
  priority 100
  peer priority 200
  inservice

On ACE location 2
  (On Admin context)

  interface vlan 60              !!! config vlan and alias
  ip address 60.60.60.61 255.255.255.0

```

## ■ Redundancy Configuration Example

```
alias 60.60.60.62 255.255.255.0
peer ip address 60.60.60.60 255.255.255.0
no shutdown

ft interface vlan 50                               !!! config vlan 50
 ip addr 50.50.50.51 255.255.255.0 ! peer ip address in location 1
 peer ip addr 50.50.50.50 255.255.255.0 ! ip address in location 1
 no shut

ft peer 1                                           !!! config peer 1
 heartbeat interval 300
 heartbeat count 10
 ft-interface vlan 20
 query-interface vlan 60

ft group 1
 peer 1
 associate-context Admin
 priority 200
 peer priority 100
 inservice
```