



Hot Standby MAC Address Commands

Use the commands in this chapter to configure and monitor hot standby MAC address (HSMA). For HSMA configuration information and examples, refer to the “Configuring CSNA and CMPC” chapter in the *Cisco IOS Bridging and IBM Networking Configuration Guide*.

hsma control-sap

To override the default control service access point (SAP) for (hot standby MAC address) HSMA peer communications, use the **hsma control-sap** command in control adapter configuration mode. To restore the default SAP for peer communications, use the **no** form of this command.

hsma control-sap *sap-address*

no hsma control-sap *sap-address*

Syntax Description

<i>sap-address</i>	SAP address used by the HSMA protocol on the control adapter. This is a hexadecimal value. The allowed range is from 0x4 to 0xFC, and the default is 0xEC.
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Defaults

The default SAP address, 0xEC, is used.

Command Modes

Control adapter configuration

Command History

Release	Modification
12.3(3)	This command was introduced.

Usage Guidelines

This command allows you to override the default control SAP used for HSMA peer communications. The same value must be configured for both HSMA peers or they will not be able to communicate. This command is valid only on the control adapter.

When the **hsma control-sap** command is changed, it will take effect only after you restart the interface by using the **shutdown** and **no shutdown** commands.

Examples

The following example configures the SAP address E8 on control adapter 26:

```
interface Channel3/0
  csna 0190 09
  lan TokenRing 23
  source-bridge 330 3 100
  adapter 9 4043.1313.9009 hsma-partner 4043.1111.001a
lan TokenRing 31
  source-bridge 339 9 100
  adapter 26 4043.3333.001a
    hsma enable
    hsma control-sap E8
```

hsma dead-interval

To configure the time interval during which at least one hello packet must be received from the peer (hot standby MAC address) HSMA adapter or else the router declares that neighbor down, use the **hsma dead-interval** command in peered adapter configuration mode. To restore the default value, use the **no** form of this command.

hsma dead-interval *time-interval*

no hsma dead-interval *time-interval*

Syntax Description	<i>time-interval</i>	Time interval used by the HSMA protocol between the control and peered HSMA adapters. Range: 3 to 180. Default: 10.
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Defaults The time interval is set to the default value of 10 seconds.

Command Modes Peered adapter configuration

Command History	Release	Modification
	12.3(3)	This command was introduced.

Examples The following example configures the time interval on adapter 26 to be 8 seconds:

```
interface Channell1/0
  load-interval 30
  csna 0190 09
  lan TokenRing 20
    source-bridge 310 3 100
    adapter 9 4043.1313.9009 hsma-partner 4043.3333.001a
      hsma dead-interval 8
  lan TokenRing 26
    source-bridge 319 9 100
    adapter 26 4043.1111.001a
      hsma enable
```

hsma enable

To enable (hot standby MAC address) HSMA on an adapter, use the **hsma enable** command in control adapter configuration mode. To disable HSMA, use the **no** form of this command.

hsma enable

no hsma enable

Syntax Description This command has no keywords or arguments.

Defaults HSMA is disabled.

Command Modes Control adapter configuration

Command History	Release	Modification
	12.3(3)	This command was introduced.

Usage Guidelines The **hsma enable** command instructs HSMA to use the adapter it is configured on as the control adapter. The control adapter is the adapter that is used to send and receive hello updates. HSMA is not enabled on the router until a control adapter is specified by the **hsma enable** command. The **no** form of this command is not valid unless all of the HSMA partners have been removed; similarly, the adapter context itself may not be removed unless all of the HSMA partners have been removed.

This command is only valid on the control adapter.

The control adapter can be configured under any LAN Token Ring adapter.

Examples The following example enables HSMA on control adapter 26:

```
interface Channel1/0
  lan TokenRing 20
    source-bridge 310 3 100
    adapter 9 4043.1313.9009 hsma-partner 4043.3333.001a
  lan TokenRing 26
    source-bridge 319 9 100
    adapter 26 4043.1111.001a
    hsma enable
```

hsma hello-interval

To configure the time interval between hello messages between the peered (hot standby MAC address) HSMA Cisco Channel Interface Processors (CIPs) or Channel Port Adapters (CPAs), use the **hsma hello-interval** command in peered adapter configuration mode. To restore the default value, use the **no** form of this command.

hsma hello-interval *time-interval*

no hsma hello-interval *time-interval*

Syntax Description	<i>time-interval</i>	Time interval, in seconds, used by the HSMA protocol between the peered HSMA CIP or CPAs. Range: 1 to 60. Default: 3.
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Defaults The time interval is set to the default value of 3 seconds.

Command Modes Peered adapter configuration

Command History	Release	Modification
	12.3(3)	This command was introduced.

Usage Guidelines The **hsma hello-interval** is the time interval between hello messages that pass between the peered HSMA CIP or CPAs. The control adapter in the enabled mode sends hello messages to the peered adapter after every 2 seconds.

Examples The following example configures the interval between hello messages on adapter 26 to be 2 seconds:

```
interface Channel1/0
  csna 0190 09
  lan TokenRing 20
  source-bridge 310 3 100
  adapter 9 4043.1313.9009 hsma-partner 4043.3333.001a
    hsma hello-interval 2
    lan TokenRing 26
  source-bridge 319 9 100
  adapter 26 4043.1111.001a
    hsma enable
```

hsma preferred

To assign priority to a peer as a control adapter, use the **hsma preferred** command in peered adapter configuration mode. To allow priority to be set without configuring a peer, use the **no** form of this command.

hsma preferred

no hsma preferred

Syntax Description This command has no keywords or arguments.

Defaults Disabled

Command Modes Peered adapter configuration

Command History	Release	Modification
	12.3(3)	This command was introduced.

Usage Guidelines The **hsma preferred** command is used in situations when both HSMA peers are becoming active at the same time or both were active because of an interruption of communication between the control adapters. In such situations, the adapter with the **hsma preferred** command configured becomes the active adapter, and the other adapter is disabled. Sessions that are connected to the disabled adapter will be dropped. If the **hsma preferred** command is not configured on either peer, the control adapter with the higher MAC address is used.

Examples The following example disables adapter 9 as the HSMA adapter and enables adapter 26 as the active HSMA adapter:

```
interface Channel1/0
  csna 0190 09
  lan TokenRing 20
  source-bridge 310 3 100
  adapter 9 4043.1313.9009 hsma-partner 4043.3333.001a
    hsma preferred
    hsma shutdown
  lan TokenRing 26
  source-bridge 319 9 100
  adapter 26 4043.1111.001a
    hsma enable
```

hsma shutdown

To stop (hot standby MAC address) HSMA on an adapter and hence enable the partner adapter, use the **hsma shutdown** command. To restart the HSMA adapter, use the **no** form of this command.

hsma shutdown

no hsma shutdown

Syntax Description This command has no keywords or arguments.

Defaults HSMA is not shut down.

Command Modes Peered adapter configuration

Command History	Release	Modification
	12.3(3)	This command was introduced.

Usage Guidelines Use the **hsma shutdown** command when you wish to force the other adapter of a pair to become active.

Examples The following example disables adapter 9 as the HSMA adapter and enables adapter 26 as the active HSMA adapter:

```
interface Channel1/0
  csna 0190 09
  lan TokenRing 20
    source-bridge 310 3 100
    adapter 9 4043.1313.9009 hsma-partner 4043.3333.001a
      hsma preferred
      hsma shutdown
  lan TokenRing 26
    source-bridge 319 9 100
    adapter 26 4043.1111.001a
      hsma enable
```

■ **hsma shutdown**