STUN and BSTUN Commands

This chapter describes the function and displays the syntax of each STUN, BSTUN, and BSC command. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

[**no**] **bsc char-set** *char-set*

Use the **bsc char-set** interface configuration command to specify the character set used by the BSC support feature in this serial interface as either EBCDIC or ASCII.

char-set	The character set. Valid keywords are **ebcdic** or **ascii**.

[**no**] **bsc contention**

Use the **bsc contention** interface configuration command to specify that the BSC link connected to the serial interface is a point-to-point BSC station. Use the **no** form of this command to cancel the specification.

[**no**] **bsc fdx**

Use the **bsc fdx** interface configuration command to specify that the interface can run BSC using switched RTS signals. Use the **no** form of this command to cancel the specification.

[**no**] **bsc pause** *time*

Use the **bsc pause** interface configuration command to specify the interval to the tenth of a second, between the start of a polling cycle. Use the **no** form of this command to cancel the specification.

time	Interval in tenths of a second. The default is 1 second.

[**no**] **bsc poll-timeout** *time*

Use the **bsc poll-timeout** interface configuration command to specify the polling timeout to the tenth of a second. Use the **no** form of this command to cancel the specification.

time	Time in tenths of a second. The default is 1 second.

[**no**] **bsc primary**

Use the **bsc primary** interface configuration command to specify that the router is acting as the primary end of the BSC link connected to the serial interface, and that the attached remote devices are BSC tributary stations. Use the **no** form of this command to cancel the specification.

[**no**] **bsc retries** *retries*

Use the **bsc retries** interface configuration command to specify the number of retries performed before a device is considered to have failed. Use the **no** form of this command to cancel the specification.

retries	Number of retries. The default is 5 retries.

[**no**] **bsc secondary**

Use the **bsc secondary** interface configuration command to specify that the router is acting as the secondary end of the BSC link connected to the serial interface, and the attached remote device is a BSC control station.

[**no**] **bsc servlim** *servlim-count*

Use the **bsc servlim** interface configuration command to specify the number of cycles of the active poll list that are performed between polls to control units in the inactive poll list. Use the **no** form of this command to cancel the specification.

servlim-count	Number of cycles. The default is 3 cycles.

[**no**] **bstun group** *group-number*

Use the **bstun group** interface configuration command to specify the BSTUN group to which the interface belongs. Use the **no** form of this command to remove the interface from the BSTUN group.

group-number	The BSTUN group to which the interface belongs.

[**no**] **bstun peer-name** *ip-address*

Use the **bstun peer-name** global configuration command to enable the block serial tunneling function. Use the **no** form of this command to disable the function.

ip-address	The address by which this BSTUN peer is known to other BSTUN peers that are using the TCP transport.

[**no**] **bstun protocol-group** *group-number protocol* {**bsc** | **bsc-local-ack**}

Use the **bstun protocol-group** global configuration command to define a BSTUN group, and the protocol it uses. Use the **no** form of this command to delete the BSTUN group.

group-number	The BSTUN group number. Valid numbers are decimal integers in the range 1 to 255.
protocol	Currently the only supported block serial protocol is BSC.
bsc	Enable BSC passthrough.
bsc-local-ack	Enable local acknowledgment of BSC frames.

[**no**] **bstun route** [**all** | **address** *address-number*] {**tcp** *ip-address* | **interface serial** *number*} [**direct**]

Use the **bstun route** interface configuration command to define how frames will be forwarded from a BSTUN interface. Use the **no** form of this command to cancel the definition.

all	All BSTUN traffic received on the input interface is propagated, regardless of the address contained in the serial frame.
address	The serial frame that contains a specific address is propagated.
address-number	For BSC protocols, address number is the poll address.
tcp	TCP encapsulation is used to propagate frames that match the entry.
ip-address	The IP address of the remote BSTUN peer.
interface serial	HDLC encapsulation is used to propagate the serial frames.
number	The serial line to an appropriately configured router on the other end.
direct	The specified interface is also a direct BSTUN link, rather than a serial connection to another peer.

[**no**] **encapsulation bstun**

Use the **encapsulation bstun** interface configuration command to configure BSTUN on a particular serial interface. Use the **no** form of this command to disable the BSTUN function on the interface.

encapsulation stun

Use the **encapsulation stun** interface configuration command to enable STUN encapsulation on a specified serial interface.

locaddr-priority-list *list-number address-number queue-keyword*
no locaddr-priority-list

Use the **locaddr-priority-list** interface configuration command to establish queuing priorities based upon the address of the logical unit (LU). Use the **no** form of this command to cancel all previous assignments.

list-number	Arbitrary integer between 1 and 10 that identifies the LU address priority list.
address-number	Value of the LOCADDR= parameter on the LU macro, which is a 1-byte address of the LU in hexadecimal.
queue-keyword	Priority queue type: **high**, **medium**, **normal**, or **low**.

[**no**] **priority-group** *list-number*

Use the **priority-group** interface configuration command to assign a priority group to an interface. Use the **no** form of this command to remove assignments.

list-number	Priority list number assigned to the interface.

[**no**] **priority-list** *list-number* **protocol bstun** *queue* [**gt** *packetsize*] [**lt** *packetsize*] [**address** *bstun-group bsc-addr*]

Use the **priority-list protocol bstun** global configuration command to establish BSTUN queuing priorities based on the BSTUN header. Use the **no** form of this command to revert to default priorities.

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
queue	Priority queue type: **high**, **medium**, **normal**, or **low**.
gt | **lt** *packetsize*	STUN port and priority settings are as follows: high (**1994**), medium (**1990**), normal (**1991**), and low (**1992**).

address *bstun-group bsc-addr*	(Optional) Output interface examines header information and BSC address and place packets with the BSTUN header that match the BSTUN address of the specific output queue.

[**no**] **priority-list** *list-number* **protocol ip** *queue-keyword* **tcp** *tcp-port-number*

Use the **priority-list protocol ip tcp** global configuration command to establish BSTUN or STUN queuing priorities based on the TCP port. Use the **no** form of this command to revert to normal priorities.

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
keyword	Priority queue type: **high**, **medium**, **normal**, or **low**.
tcp-port-number	BSTUN port and priority settings are as follows: High - BSTUN port 1976 Medium - BSTUN port 1977 Normal - BSTUN port 1978 Low - BSTUN port 1979 STUN port and priority settings are as follows: High - STUN port 1994 Medium - STUN port 1990 Normal - STUN port 1991 Low - STUN port 1992.

[**no**] **priority-list** *list-number* **stun** *queue-keyword* **address** *group-number address-number*

Use the **priority-list stun address** global configuration command to establish STUN queuing priorities based on the address of the serial link. Use the **no** form of this command to revert to normal priorities.

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.

queue-keyword	Priority queue type: **high**, **medium**, **normal**, or **low**.
group-number	Group number that is used in the **stun group** command.
address-number	Address of the serial link. For an SDLC link, the format is a 1-byte hex value (for example, C1). For a non-SDLC link, the address format can be specified by the **stun schema** command.

no] **queue-list** *list-number* **protocol bstun** *queue* [**gt** *packetsize*] [**lt** *packetsize*] [**address** *bstun-group bsc-addr*]

Use the **queue-list protocol bstun** global configuration command to customize BSTUN queuing priorities based on the BSTUN header. Use the **no** form of this command to revert to normal priorities.

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
queue	Priority queue type: **high**, **medium**, **normal**, or **low**.
gt | **lt** *packetsize*	(Optional) Output interface examines header information *and* packet size and places packets with the BSTUN header that match criteria gt or lt specified packet size) on specified output.
address *bstun-group bsc-addr*	(Optional) Output interface examines header information and BSC address and places packets with the BSTUN header that match BSC address on the specified output queue.

[**no**] **queue-list** *list-number* **protocol ip** *queue* **tcp** *tcp-port-number*

Use the **queue-list protocol ip tcp** global configuration command to customize BSTUN or priorities based on the TCP port. Use the **no** form of this command to revert to normal priorities.

list-number	Arbitrary integer between 1 and 10 that identifies the priority list selected by the user.
queue	Priority queue type: **high**, **medium**, **normal**, or **low**.
tcp-port-number	BSTUN port and priority settings are as follows: High - BSTUN port 1976 Medium - BSTUN port 1977 Normal - BSTUN port 1978 Low - BSTUN port 1979 STUN port and priority settings are as follows: High - STUN port 1994 Medium - STUN port 1990 Normal - STUN port 1991 Low - STUN port 1992.

sdlc address ff ack-mode

Use the **sdlc address ff ack-mode** interface configuration command to configure the IBM reserved address FF as a valid local (not broadcast) address.

[**no**] **sdlc virtual-multidrop**

Use the **sdlc virtual-multidrop** interface configuration command to allow SDLC broadcast address FF to be replicated for each of the STUN peers, so each of the end stations receive the broadcast frame. Use the **no** form of this command to disable the SDLC broadcast feature.

show bsc

Use the **show bsc** privileged EXEC command to display statistics about the interfaces on which BSC is configured.

show bstun

Use the **show bstun** privileged EXEC command to display the current status of STUN connections.

show stun

Use the **show stun** privileged EXEC command to display the current status of STUN connections.

show stun sdlc

Use the **show stun sdlc** EXEC command to display the status of the STUN interfaces using SDLC encapsulation and whether proxy polling is enabled for that interface.

[**no**] **stun group** *group-number*

Use the **stun group** interface configuration command to place each STUN-enabled interface on a router in a previously defined STUN group. Use the **no** form of this command to remove an interface from a group.

group-number	Integer in the range 1 through 255.

stun keepalive-count *count*
no stun keepalive-count

Use the **stun keepalive-count** global configuration command to define the number of times to attempt a peer connection before declaring the peer connection to be down. Use the **no** form of this command to cancel the previous definition.

count	Number of connection attempts. The range is between 2 and 10 retries.

[**no**] **stun peer-name** *ip-address*

Use the **stun peer-name** global configuration command to enable STUN on IP addresses. Use the **no** form of this command to disable STUN on an IP address.

ip-address	IP address by which this STUN peer is known to other STUN peers.

stun protocol-group *group-number* {**basic** | **sdlc** | **schema**} [**sdlc-tg**]
no stun protocol-group

Use the **stun protocol-group** global configuration command to create a protocol group. Use the **no** form of this command to remove an interface from the group.

group-number	Integer in the range 1 through 255.
basic	Indicates a non-SDLC protocol.
sdlc	Indicates an SDLC group.
schema	Indicates a custom protocol.
sdlc-tg	(Optional) Used in conjunction with the sdlc keyword. Identifies the group as part of an SNA transmission group.

stun remote-peer-keepalive *seconds*
no stun remote-peer-keepalive

Use the **stun remote-peer-keepalive** global configuration command to enable detection of the loss of a peer.

seconds	Keepalive interval, in seconds. The range is 1 to 300 seconds. The default is 30 seconds.

[**no**] **stun route address** *sdlc-addr* **interface** *frame-relay-port* **dlci** *number localsap* **local-ack**

Use the **stun route address interface dlci** interface configuration command to configure direct Frame Relay encapsulation between STUN peers with SDLC local acknowledgment. Use the **no** form of this command to disable the configuration.

sdlc-addr	Address of the serial interface.
interface *frame-relay-port*	Port number.
dlci *number*	DLCI number.
localsap	Local connecting SAP.
local-ack	Enable local acknowledgment.

stun route address *address-number* **interface serial** *number* [**direct**]
no stun route address *address-number* **interface serial** *number*

Use the **stun route address interface serial** interface configuration command to forward all HDLC traffic of a serial interface. Use the **no** form of this command to disable this method of HDLC encapsulation.

address-number	Address of the serial interface.
number	Number assigned to the serial interface.
direct	(Optional) Forwards all HDLC traffic on a direct STUN link.

[**no**] **stun route address** *address-number* **tcp** *ip-address* [**local-ack**] [**priority**]

Use the **stun route address tcp** interface configuration command to specify TCP encapsulation and optionally establish SDLC local acknowledgment (SDLC Transport) for STUN. Use the **no** form of this command to disable this method of TCP encapsulation.

address-number	Number that conforms to TCP addressing conventions.
ip-address	IP address by which this STUN peer is known to other STUN peers that are using the TCP as the STUN encapsulation.
local-ack	(Optional) Enables local acknowledgment for STUN.
priority	(Optional) Establishes the four levels used in priority queuing: low, medium, normal, and high.
tcp-queue-max	(Optional) Sets the maximum size of the outbound TCP queue for the SDLC link.

stun route all interface serial *number* [**direct**]

Use the **stun route all interface serial** interface configuration command to encapsulate and forward all STUN traffic using HDLC encapsulation on a serial interface.

number	Number assigned to the serial interface.
direct	(Optional) Indicates that the specified interface is also a direct STUN link, rather than a serial connection to another peer.

stun route all tcp *ip-address*

Use the **stun route all tcp** interface configuration command to use TCP encapsulation and forward all STUN traffic on an interface regardless of what address is contained in the serial frame.

ip-address	IP address by which this remote STUN peer is known to other STUN peers. Use the address that identifies the remote STUN peer that is connected to the far serial link.

[**no**] **stun schema** *name* **offset** *constant-offset* **length** *address-length* **format** *format-keyword*

Use the **stun schema** global configuration command to define a protocol other than SDLC for use with STUN. Use the **no** form of this command to disable the new protocol.

name	Name that defines your protocol. It can be up to 20 characters long.
offset *constant-offset*	Constant offset (in bytes) for the address to be found in the frame.
length *address-length*	Length (in bytes) in one of the following address formats: decimal (4 bytes) hexadecimal (8 bytes) octal (4 bytes)
format *format-keyword*	Format to be used to specify and display addresses for routes on interfaces that use this STUN protocol. The allowable format keywords are: **decimal** (0 through 9) **hexadecimal** (0 through F) **octal** (0 through 7)

stun sdlc-role primary

Use the **stun sdlc-role primary** interface configuration command to assign the router the role of SDLC primary node. Primary nodes poll secondary nodes in a predetermined order.

stun sdlc-role secondary

Use the **stun sdlc-role secondary** interface configuration command to assign the router the role of SDLC secondary node. Secondary nodes respond to polls sent by the SDLC primary by transmitting any outgoing data they might have.