

DSPU and SNA Service Point Configuration Commands

This chapter describes the commands you use to configure the downstream physical unit (DSPU) feature, which provides a gateway facility for downstream System Network Architecture (SNA) physical units (PUs). For DSPU configuration tasks and examples, refer to the “Configuring DSPU and SNA Service Point Support” chapter of the *Router Products Configuration Guide*.

dspu activation-window

Use the **dspu activation-window** global configuration command to define the number of activation request units (RUs) and response messages (such as ACTLUs or DDDLUs NMVTs) that can be sent without waiting for responses from the remote PU. Use the **no** form of this command to return to the default window size.

dspu activation-window *window-size*
no dspu activation-window

Syntax Description

window-size Number of outstanding unacknowledged activation RUs. The default is 5.

Default

The default window size is 5 outstanding unacknowledged activation RUs.

Command Mode

Global configuration

Usage Guidelines

You do not typically need to define the number of activation RUs, but doing so can enhance activation performance in some situations. Increasing the DSPU activation window allows more LUs to become active in a shorter amount of time (assuming the required buffers for activation RUs are available). Conversely, decreasing the DSPU activation window limits the amount of buffers the DSPU can use during PU/LU activation. This command provides pacing to avoid depleting the router buffer pool during PU activation.

Example

In the following example, the DSPU activation window is configured to 10. The DSPU can send up to 10 activation RUs without a response from the remote PU. However, the DSPU cannot send any additional activation RUs until a response is received. The DSPU can only have 10 activation RUs awaiting response at any given time.

```
dspu activation-window 10
```

dspu default-pu

Use the **dspu default-pu** global configuration command to enable the default PU feature to be used when a downstream PU attempts to connect, but does not match any of the explicit PU definitions. Use the **no** form of this command to disable the default PU feature.

```
dspu default-pu [window window-size] [maxiframe max-iframe]  
no dspu default-pu [window window-size] [maxiframe max-iframe]
```

Syntax Description

window (Optional) Send and receive window sizes used across the link. The range is 1 to 127. The default is 7.
window-size

maxiframe (Optional) Maximum size (in bytes) of an I-frame that can be transmitted or received across the link. The range is 64 bytes to 18,432 bytes. The default is 1472.
max-iframe

Defaults

The default window size is 7.

The default maximum I-frame size is 1472.

Command Mode

Global configuration

Usage Guidelines

If the DSPU default PU is not defined, a connection attempt by a downstream PU that does not match any explicit PU definition is rejected.

The **dspu default-pu** command must be followed by at least one **dspu lu** command to define which pool the default LUs will be assigned from. Note that default LUs cannot be defined as dedicated LUs from a host.

The maximum I-frame size includes the SNA transmission header (TH), request header (RH), and request unit (RU), but does not include the DLC header. The DSPU feature segments frames being transmitted to fit within this frame size. If an XID is received from a remote PU which indicates that it supports a different maximum I-frame size, then the smaller of the two values is used.

Example

In the following example, the default PU feature is enabled with a window size of 5 and a maximum I-frame size of 128. Each default PU can have up to 3 LUs assigned from the *hostpool* pool of LUs.

```
dspu pool hostpool host ibm3745 lu 2 254  
dspu default-pu window 5 maxiframe 128  
dspu lu 2 4 pool hostpool
```

Related Commands

dspu lu

dspu pool

dspu enable-host (QLLC)

Use the **dspu enable-host** interface configuration command to enable an X.121 subaddress for use by upstream host connections via QLLC. Use the **no** form of this command to disable the X.121 subaddress.

```
dspu enable-host qllc x121-subaddress  
no dspu enable-host qllc x121-subaddress
```

Syntax Description

qllc Required keyword for QLLC data link control.

x121-subaddress The X.121 subaddress.

Default

No default X.121 sub-address is specified.

Command Mode

Interface configuration

Example

In the following example, X.121 subaddress 320108 is enabled for use by upstream host connections:

```
interface serial 0  
encapsulation x35  
x25 address 3202  
x25 map qllc 320112  
dspu enable-host qllc 320108
```

Related Commands

A dagger (†) indicates that the command is documented in another chapter.

dspu host (QLLC)

x25 map qllc†

dspu enable-host (SDLC)

Use the **dspu enable-host** interface configuration command to enable an SDLC address for use by upstream host connections. Use the **no** form of this command to cancel the definition.

```
dspu enable-host sdlc sdlc-address  
no dspu enable-host sdlc sdlc-address
```

Syntax Description

sdlc Required keyword for SDLC data link control.

sdlc-address SDLC address.

Default

No default SDLC address is specified.

Command Mode

Interface configuration

Example

In the following example, SDLC address c1 is enabled for use by upstream host connections:

```
interface serial 0  
encapsulation sdlc  
sdlc role secondary  
sdlc address C1  
dspu enable-host sdlc C1
```

Related Commands

sdlc address

sdlc role

dspu enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

Use the **dspu enable-host** interface configuration command to enable a local SAP on Token Ring, Ethernet, or Frame Relay interfaces for use by upstream hosts. Use the **no** form of this command to cancel the definition.

```
dspu enable-host [lsap local-sap]  
no dspu enable-host [lsap local-sap]
```

Syntax Description

lsap (Optional) Specifies that the local SAP will be activated as an upstream SAP for both receiving incoming connection attempts and for starting outgoing connection attempts.

local-sap (Optional) Local SAP address. The default is 12.

Default

The default local SAP address is 12.

Command Mode

Interface configuration

Example

In the following example, the local SAP address 10 on Token Ring interface 0 is enabled for use by upstream host connections:

```
interface tokenring 0  
dspu enable-host lsap 10
```

Related Commands

dspu host (Frame Relay)

dspu host (Token Ring, Ethernet, FDDI, RSRB)

dspu enable-pu (Token Ring, Ethernet, Frame Relay, FDDI)

Use the **dspu enable-pu** interface configuration command to enable an Ethernet, Frame Relay, Token Ring, or FDDI address for use by downstream PU connections. Use the **no** form of this command to disable the connection.

```
dspu enable-pu [lsap local-sap]  
no dspu enable-pu [lsap local-sap]
```

Syntax Description

lsap *local-sap* (Optional) Local SAP address used by the DSPU to establish connection with the remote host. The default local SAP address is 8.

Default

The default local SAP address is 8.

Command Mode

Interface configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.3.

Example

The following example demonstrates the configuration of a downstream PU via Token Ring and Ethernet:

```
interface tokenring 0  
  ring-speed 16  
  dspu enable-pu lsap 8  
  
interface ethernet 0  
  dspu enable-pu lsap 8
```

Related Commands

dspu pu (Frame Relay)

dspu pu (Token Ring, Ethernet, FDDI, RSRB)

dspu enable-pu (QLLC)

Use the **dspu enable-pu** interface configuration command to enable an X.121 subaddress for use by downstream PU connections via QLLC. Use the **no** form of this command to cancel the definition.

```
dspu enable-pu qlc x121-sub-addr  
no dspu enable-pu qlc x121-sub-addr
```

Syntax Description

qlc	Required keyword for QLLC data link control.
<i>x121-sub-addr</i>	A variable-length X.121 address. It is assigned by the X.25 network service provider.

Default

No default address is assigned.

Command Mode

Interface configuration

Example

The following command enables an X.121 subaddress for use by downstream PU connections:

```
interface serial 0  
encapsulation x25  
x25 address 3201  
x25 map qlc 320208  
dspu enable-pu qlc 08
```

Related Commands

dspu enable-host (QLLC)
x25 map qlc

dspu enable-pu (SDLC)

Use the **dspu enable-pu** interface configuration command to enable an SDLC address for use by downstream PU connections. Use the **no** form of this command to disable the connection.

```
dspu enable-pu sdlc sdlc-addr  
no dspu enable-pu sdlc sdlc-addr
```

Syntax Description

sdlc Required keyword for SDLC data link control.

sdlc-addr SDLC address.

Default

No default address is specified.

Command Mode

Interface configuration

Example

The following command enables a DSPU downstream connection:

```
interface serial 0  
encapsulation x25  
sdlc role primary  
sdlc address c1  
dspu enable-pu sdlc c1
```

Related Commands

dspu host (SDLC)

dspu pu (SDLC)

sdlc address

sdlc role

dspu host (Frame Relay)

Use the **dspu host** global configuration command to define a DSPU host over a Frame Relay connection. Use the **no** form of this command to cancel the definition.

```
dspu host host-name xid-snd xid dlci dlci-number [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no dspu host host-name xid-snd xid dlci dlci-number [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified DSPU host.
xid-snd <i>xid</i>	XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
dlci <i>dlci-number</i>	Frame Relay data-link connection identifier (DLCI) number; a decimal number.
rsap <i>rsap-addr</i>	Remote Service Access Provider address.
lsap <i>lsap-addr</i>	Local Service Access Provider address
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Number of times the DSPU attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default remote-sap is 4.
 The default local-sap is 12.
 The default window-size is 7.

The default max-iframe is 1472.
The default retry-count is 255.
The default retry-timeout is 30.

Command Mode

Global configuration

Example

The following command defines a DSPU host for Frame Relay support:

```
dspu host rosebud xid-snd 06500001 dlci 200 rsap 4 lsap 12
```

Related Commands

dspu enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

dspu pool

dspu host (QLLC)

Use the **dspu host** global configuration command to define a DSPU host over an X.25/QLLC connection. Use the **no** form of this command to delete the DSPU host definition.

```
dspu host host-name xid-snd xid x25 remote-x121-addr [qllc local-x121-sub-addr]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no dspu host host-name xid-snd xid x25 remote-x121-addr [qllc local-x121-sub-addr]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified DSPU host.
xid-snd <i>xid</i>	XID that will be sent to the host during connection establishment. The <i>xid</i> value is 8 hexadecimal digits that include both block and ID numbers. For example, if the <i>xid</i> value is 05D00001, the Block number is 05D and the ID number is 00001.
x25 <i>remote-x121-addr</i>	Remote X.121 address.
qllc <i>local-x121-sub-addr</i>	(Optional) Local X.121 subaddress.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Number of times the DSPU attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default window-size is 7.
 The default max-iframe is 1472.
 The default retry-count is 255.
 The default retry-timeout is 30.

Command Mode

Global configuration

Example

The following command defines a DSPU host:

```
dspu host hosta xid-snd 065ffff0 x25 00000123005 qllc 12
```

Related Commands

dspu enable-host (QLLC)

dspu pool

dspu start

dspu host (SDLC)

Use the **dspu host** global configuration command to define a DSPU host over an SDLC connection. Use the **no** form of this command to cancel the definition.

```
dspu host host-name xid-snd xid sdlc sdlc-addr [interface slot/port] [window window-size]
[maxiframe max-iframe] [retries retry-count] [retry-timeout retry-timeout] [focalpoint]
no dspu host host-name xid-snd xid sdlc sdlc-addr [interface slot/port] [window window-size]
[maxiframe max-iframe] [retries retry-count] [retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified DSPU host.
xid-snd <i>xid</i>	XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
sdlc <i>sdlc-addr</i>	SDLC hexadecimal address.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive window sizes used for the host link. The range is 1 to 127. The default window size is 7.
maxiframe <i>max-iframe</i>	(Optional) Send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Number of times the DSPU attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default window size is 7.
 The default maximum I-frame is 1472.
 The default retry-count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Example

The following command defines a DSPU host for SDLC:

```
dspu host hosta xid-snd 065ffff0 sdlc c1
```

Related Commands

dspu enable-host (SDLC)

dspu pool

dspu host (Token Ring, Ethernet, FDDI, RSRB)

Use the **dspu host** global configuration command to define a DSPU host over TokenRing, Ethernet, or RSRB connections. Use the **no** form of this command to cancel the definition.

```
dspu host host-name xid-snd xid rmac remote-mac [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no dspu host host-name xid-snd xid rmac remote-mac [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified DSPU host.
xid-snd <i>xid</i>	XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
rmac <i>rmac</i>	MAC address of the remote host PU.
rsap <i>remote-sap</i>	(Optional) SAP address of the remote host PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Local SAP address used by the DSPU to establish connection with the remote host.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Number of times the DSPU attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default remote SAP address is 4.
 The default local SAP address is 12.
 The default window size is 7.
 The default maximum I-frame is 1472.
 The default retry-count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Usage Guidelines

The local SAP address must be enabled by one of the following commands: **dspu enable-host (Token Ring, Ethernet, Frame Relay, FDDI) lsap**, **dspu rsrb enable-host**, or **dspu rsrb enable-host lsap**.

If an XID is received from a remote PU that indicates that it supports a different maximum I-frame size, then the smaller of the two values is used.

Alerts from downstream PUs will be forwarded to the focalpoint host. The **focalpoint** parameter must be included on only one **dspu host** command.

Example

The following example shows the definition for a DSPU host with 254 LUs and a connection to be established across an RSRB link:

```
dspu rsrb 88 1 99 4000.ffff.0001
dspu rsrb enable-host lsap 10
dspu host ibm3745 xid 06500001 rmac 4000.3745.0001 lsap 10
dspu pool hostpool lu 2 253 host ibm3745
```

Related Commands

dspu enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

dspu pool

dspu rsrb enable-host

dspu rsrb start

dspu start

dspu lu

Use the **dspu lu** global configuration command to define a dedicated LU or a range of LUs for an upstream host and a downstream PU. Use the **no** form of this command to cancel the definition.

```
dspu lu lu-start [lu-end] { host host-name host-lu-start | pool pool-name } [pu pu-name]  
no dspu lu lu-start [lu-end] { host host-name host-lu-start | pool pool-name } [pu pu-name]
```

Syntax Description

<i>lu-start</i>	Starting LU address in the range of LUs to be assigned from a pool or dedicated to a host.
<i>lu-end</i>	(Optional) Ending LU address in the range of LUs to be assigned from a pool or dedicated to a host.
host <i>host-name</i> <i>host-lu-start</i>	(Optional) Specifies that each LU in the range of LUs will be dedicated to a host LU <i>host-name</i> . The range of host LUs starts with the address <i>host_lu_start</i> .
pool <i>pool-name</i>	(Optional) Specifies that each LU in the range of LUs will be assigned from the specified pool.
pu <i>pu-name</i>	(Optional) The downstream PU for which this range of LUs is being defined.

Default

There are no default specifications.

Command Mode

Global configuration

Usage Guidelines

If the **dspu lu** command immediately follows one of these commands:

```
dspu default-pu  
dspu pu (Frame Relay)  
dspu pu (QLLC)  
dspu pu (SDLC)  
dspu pu (Token Ring, Ethernet, FDDI, RSRB)
```

the **dspu lu** command is applied to that PU, and the **pu** keyword and *pu-name* are not required. If the keyword and argument are included, the LU defined by the **dspu lu** command will be applied to the named PU.

The pool and host parameters are mutually exclusive. You can define a range of LUs to be either assigned from a pool or dedicated to a host.

Example

The following example defines downstream LUs as dedicated LUs. The downstream PU, ciscopu, has 3 downstream LUs with addresses 2, 3, and 4. When ciscopu establishes a connection with the DSPU, the three downstream LUs (2, 3, and 4) are dedicated to LUs 22, 23, and 24, respectively, from the IBM 3745 host.

```
dspu host ibm3745 xid-snd 065000001 rmac 4000.3745.0001
dspu pu ciscopu xid-rcv 05D00001 rmac 1000.5AED.1F53
dspu lu 2 4 host ibm3745 22
```

Related Commands

dspu default-pu

dspu host (Frame Relay)

dspu host (QLLC)

dspu host (SDLC)

dspu host (Token Ring, Ethernet, FDDI, RSRB)

dspu pool

dspu pu (Frame Relay)

dspu pu (QLLC)

dspu pu (SDLC)

dspu pu (Token Ring, Ethernet, FDDI, RSRB)

dspu pool

Use the **dspu pool** global configuration command to define a range of host LUs in an LU pool. Use the **no** form of this command to remove the definition.

```
dspu pool pool-name host host-name lu lu-start [lu-end] [inactivity-timeout
inactivity-minutes]
no dspu pool pool-name host host-name lu lu-start [lu-end] [inactivity-timeout
inactivity-minutes]
```

Syntax Description

<i>pool-name</i>	Name identifier of the pool.
host <i>host-name</i>	Name of the host that owns the range of host LUs in the pool.
lu <i>lu-start</i>	Starting LU address in the range of host LUs in the pool.
<i>lu-end</i>	(Optional) The ending address (inclusive) of the range of host LUs in the pool. If no ending address is specified, only one LU (identified by <i>lu-start</i>) will be defined in the pool.
inactivity-timeout <i>inactivity-minutes</i>	(Optional) Interval of inactivity (in minutes) on either the SSCP-LU or LU-LU sessions, which will cause the downstream LU to be disconnected from the upstream LU.

Default

The **inactivity-timeout** is disabled.

Command Mode

Global configuration

Usage Guidelines

You can include multiple **dspu pool** commands that specify the same pool name. In this way, an LU pool can include several LU ranges from the one host PU, or it can include LUs from different host PUs. The LUs from host *host-name* starting at *lu-start* and ending with *lu-end*, inclusive, will be included in the pool *pool-name*. For the LUs in this pool, if there is no traffic on either the SSCP-LU or LU-LU sessions for the inactivity-timeout number of minutes, the downstream LU will be disconnected from the upstream LU, and the upstream LU will be allocated to any downstream LU waiting for a session. A value of zero for inactivity minutes means no timeouts. (Note that the inactivity-timeout applies to all LUs in this pool, not just the LUs defined by this **dspu pool** command. The last value configured will be used.)

Examples

The following example defines a pool of host a pool LUs. A pool of 253 host LUs is defined with all LUs supplied from the *ibm3745* host PU:

```
dspu host ibm3745 xid-snd 065000001 rmac 4000.3745.0001
dspu pool hostpool host ibm3745 lu 2 254
```

The following example defines multiple pools and defines a disjoint pool of host LUs. One pool with a total of 205 host LUs and second pool with a total of 48 host LUs are defined with all LUs supplied from the same *ibm3745* host PU. Host LUs with addresses 2 to 201 and 250 to 254 are defined in *hostpool1*. Host LUs with addresses 202 to 249 are defined in *hostpool2*.

```
dspu host ibm3745 xid-snd 065000001 rmac 4000.3745.0001
dspu pool hostpool1 host ibm3745 lu 2 201
dspu pool hostpool2 host ibm3745 lu 202 249
dspu pool hostpool1 host ibm3745 lu 250 254
```

The following example defines a pool of LUs from multiple hosts. A pool of 506 host LUs is defined with 253 LUs supplied by the *ibm3475* host PU and 253 supplied by the *ibm3172* hostPU.

```
dspu host ibm3745 xid-snd 065000001 rmac 4000.3745.0001
dspu host ibm3172 xid 06500002 rmac 4000.3172.0001
dspu pool hostpool host ibm3745 lu 2 254
dspu pool hostpool host ibm3172 lu 2 254
```

Related Commands

dspu host (Frame Relay)

dspu host (QLLC)

dspu host (Token Ring, Ethernet, FDDI, RSRB)

dspu lu

dspu pu (Frame Relay)

Use the **dspu pu** global configuration command to define a DSPU host over a Frame Relay connection. Use the **no** form of this command to cancel the definition.

```
dspu pu pu-name dlci dlci-number [rsap remote-sap] [lsap local-sap] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
no dspu pu pu-name dlci dlci-number [rsap remote-sap] [lsap local-sap] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
```

Syntax Description

<i>pu-name</i>	Name of the downstream PU.
dlci <i>dlci-number</i>	Frame Relay data-link connection identifier (DLCI) number; a decimal number.
rsap <i>remote-sap</i>	(Optional) SAP address of the downstream PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Local SAP address used by the DSPU to establish connection with the downstream PU. The default is 8.
xid-rcv <i>xid</i>	(Optional) Specifies a match on XID.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive sizes used for the downstream PU link. The range is 1 to 127. The default is 7.
maxiframe <i>max-iframe</i>	(Optional) Maximum I-frame that can be transmitted or received across the link. The range is 64 to 18,432. The default is 1472.
retries <i>retry-count</i>	Number of times the DSPU attempts to retry establishing connection with downstream PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 4.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with downstream PU. The range is 1 to 600 seconds. The default is 30.

Defaults

The default remote-sap is 4.
 The default local-sap is 8.
 The default window-size is 7.
 The default max-iframe is 1472.
 The default retry-count is 4.
 The default retry-timeout is 30.

Command Mode

Global configuration

Example

The following example defines a downstream PU:

```
dspu pu pub dlci 8
```

Related Commands

dspu enable-pu (Token Ring, Ethernet, Frame Relay, FDDI)

dspu lu

dspu pu (QLLC)

Use the **dspu pu** global configuration command to explicitly define a downstream PU over an X.25 connection. Use the **no** form of this command to cancel the definition.

```
dspu pu pu-name x25 remote-x121-addr [qllc local-x121-sub-addr] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
no dspu pu pu-name x25 remote-x121-addr [qllc local-x121-sub-addr] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
```

Syntax Description

<i>pu-name</i>	Name of the downstream PU.
x25 <i>remote-x121-addr</i>	Variable-length X.121 address. It is assigned by the X.25 network service provider.
qllc <i>local-x121-subaddr</i>	(Optional) Local X.121 subaddress.
xid-rcv <i>xid</i>	(Optional) Specifies a match on XID.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive sizes used for the downstream PU link. The range is 1 to 127. The default is 7.
maxiframe <i>max-iframe</i>	(Optional) Maximum I-frame that can be transmitted or received across the link. The range is 64 to 18,432. The default is 1472.
retries <i>retry-count</i>	Number of times the DSPU attempts to retry establishing connection with downstream PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 4.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with downstream PU. The range is 1 to 600 seconds. The default is 30.

Defaults

The default window-size is 7.
 The default max-iframe is 1472.
 The default retry-count is 4.
 The default retry-timeout is 30.

Command Mode

Global configuration

Example

The following command defines a downstream PU:

```
dspu pu testpu xid-rcv 05d00001 x25 32012 ql1c 12
```

Related Commands

dspu enable-pu (QLLC)

dspu lu

dspu pu (SDLC)

Use the **dspu pu** global configuration command to define a DSPU host over an SDLC connection. Use the **no** form of this command to cancel the definition.

```
dspu pu pu-name xid-rcv xid sdlc sdlc-addr [interface slot/port] [window window-size]
[maxiframe max-iframe] [retries retry-count] [retry-timeout retry-timeout]
no dspu pu pu-name xid-rcv xid sdlc sdlc-addr [interface slot/port] [window window-size]
[maxiframe max-iframe] [retries retry-count] [retry-timeout retry-timeout]
```

Syntax Description

<i>pu-name</i>	Name of the downstream PU.
xid-rcv <i>xid</i>	Specifies a match on XID.
sdlc <i>sdlc-addr</i>	SDLC address.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive sizes used for the downstream PU link. The range is 1 to 127. The default is 7.
maxiframe <i>max-iframe</i>	(Optional) Maximum I-frame that can be transmitted or received across the link. The range is 64 to 18,432. The default is 1472.
retries <i>retry-count</i>	(Optional) Number of times the DSPU attempts to retry establishing connection with downstream PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 4.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with downstream PU. The range is 1 to 600 seconds. The default is 30.

Defaults

The default window-size is 7.
 The default max-iframe is 1472.
 The default retry-count is 4.
 The default retry-timeout is 30.

Command Mode

Global configuration

Example

The following command defines a downstream PU:

```
dspu pu testpu sdlc c1 interface serial 0
```

Related Commands

dspu enable-pu (SDLC)

dspu lu

dspu pu (Token Ring, Ethernet, FDDI, RSRB)

Use the **dspu pu** global configuration command to define an explicit downstream PU over Token Ring, Ethernet, or RSRB connections. Use the **no** form of this command to cancel the definition.

```
dspu pu pu-name [rmac remote-mac] [rsap remote-sap] [lsap local-sap] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
no dspu pu pu-name [rmac remote-mac] [rsap remote-sap] [lsap local-sap] [xid-rcv xid]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout]
```

Syntax Description

<i>pu-name</i>	Name of the downstream PU.
rmac <i>remote-mac</i>	(Optional) MAC address of the downstream PU.
rsap <i>remote-sap</i>	(Optional) SAP address of the downstream PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Local SAP address used by the DSPU to establish connection with the downstream PU. The default is 8.
xid-rcv <i>xid</i>	(Optional) Specifies a match on XID.
interface <i>slot/port</i>	(Optional) Slot and port number of the interface.
window <i>window-size</i>	(Optional) Send and receive sizes used for the downstream PU link. The range is 1 to 127. The default is 7.
maxiframe <i>max-iframe</i>	(Optional) Maximum I-frame that can be transmitted or received across the link. The range is 64 to 18,432. The default is 1472.
retries <i>retry-count</i>	Number of times the DSPU attempts to retry establishing connection with downstream PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 4.
retry-timeout <i>retry-timeout</i>	(Optional) Delay (in seconds) between DSPU attempts to retry establishing connection with downstream PU. The range is 1 to 600 seconds. The default is 30.

Defaults

The default remote-sap is 4.
 The default local-sap is 8.
 The default window-size is 7.
 The default max-iframe is 1472.
 The default retry-count is 4.
 The default retry-timeout is 30.

Command Mode

Global configuration

Usage Guidelines

The local SAP address must be enabled by one of the following commands:

dspu enable-pu (Token Ring, Ethernet, Frame Relay, FDDI)
dspu rsrb enable-pu lsap

The send and receive maximum I-frame size includes the SNA TH and RH, but does not include the data link control header. The DSPU feature will segment frames being transmitted to fit within this frame size. If an XID is received from a remote PU which indicates that it supports a different maximum I-frame size, then the smaller of the two values is used.

If you want the DSPU to attempt a ConnectOut to the remote node using the **dspu start** command, you must configure the **rmac** keyword and argument. If you want this PU to match against a ConnectIn attempt, then several combinations of **rmac**, **rsap**, **xid-rcv** are possible. The matching algorithms are as follows:

- **rmac**—Match on remote MAC/SAP address of downstream PU
- **xid-rcv**—Match on XID value received from downstream PU.
- **rmac/rsap, xid-rcv**—Match on remote MAC/SAP address of downstream PU and XID value received from downstream PU.

If an XID is received from a remote PU which indicates that it supports a different maximum I-frame size, then the smaller of the two values is used.

Examples

In the following example, a downstream PU is defined with only the MAC address and SAP address specified. A downstream PU that attempts an incoming connection to the DSPU will only be accepted if the remote MAC/SAP address matches the configured values for this downstream PU (and the proper local SAP address is enabled).

```
dspu pu ciscopu rmac 1000.5AED.1F53 rsap 20
dspu lu 2 5 pool hostpool
interface tokenring 0
dspu enable-pu lsap 8
```

In the following example, a downstream PU is defined with only an xid-rcv value. Any downstream PU that attempts an incoming connection specifying the **xid-rcv** value, 05D00001, will be accepted without regard to remote MAC or SAP address (although the proper local SAP address must be enabled).

```
dspu pu ciscopu xid-rcv 05d00001
dspu lu 2 5 pool hostpool
interface tokenring 0
dspu enable-pu lsap 8
```

In the following example, a downstream PU is defined with xid-rcv, rmac, and rsap parameters. Any downstream PU that attempts to connectIn to the DSPU must match all three configured values for the connection to be accepted (the proper local SAP address must also be enabled).

```
dspu pu ciscopu xid-rcv 05d00001 rmac 1000.5AED.1F53 rsap 20
dspu lu 2 5 pool hostpool
interface tokenring 0
dspu enable-pu lsap 8
```

Related Commands

dspu enable-pu (Token Ring, Ethernet, Frame Relay, FDDI)

dspu lu

dspu rsrb enable-pu

dspu rsrb start

dspu start

dspu rsrb

Use the **dspu rsrb** global configuration command to define the local virtual ring, the virtual bridge, the target virtual ring, and the virtual MAC address that the DSPU feature will simulate at the RSRB. Use the **no** form of this command to cancel the definition.

```
dspu rsrb local-virtual-ring bridge-number target-virtual-ring virtual-macaddr
no dspu rsrb local-virtual-ring bridge-number target-virtual-ring virtual-macaddr
```

Syntax Description

<i>local-virtual-ring</i>	DSPU local virtual ring number.
<i>bridge-number</i>	Bridge number connecting the DSPU local virtual ring and the RSRB target virtual ring. The valid range is 1 to 15.
<i>target-virtual-ring</i>	RSRB target virtual ring number. The RSRB target virtual ring corresponds to the ring-number parameter defined by a source-bridge ring-group command.
<i>virtual-macaddr</i>	DSPU virtual MAC address.

Default

There are no default settings.

Command Mode

Global configuration

Usage Guidelines

The bridge number parameter can be specified only once in a configuration.

Use the **dspu rsrb** command to enable DSPU host and downstream connections to be established across an RSRB link.

If the **local-ack** parameter is specified on the **source-bridge remote-peer** statement, DSPU will establish host connections across RSRB using local acknowledgment. DSPU cannot support local acknowledgment for downstream PU connections across RSRB.

Examples

The following example defines DSPU to start connection to host across RSRB link (without local acknowledgment). The DSPU is identified by its local ring number 88 and its virtual MAC address 4000.FFFF.0001. When the DSPU attempts an outgoing connection to the *ibm3745* host, the connection will be established across the RSRB virtual ring 99.

```
source-bridge ring-group 99
source-bridge remote-peer 99 tcp 150.10.13.1
source-bridge remote-peer 99 tcp 150.10.13.2

dspu rsrb 88 1 99 4000.FFFF.0001
dspu rsrb enable-host lsap 10

dspu host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10
dspu rsrb start ibm3745
```

```
interface serial 0
ip address 150.10.13.1 255.255.255.0
```

The following example defines DSPU to start connection to host across RSRB link (with local acknowledgment). The DSPU is identified by its local ring number 88 and its virtual MAC address 4000.FFFF.0001. When the DSPU attempts an outward connection to the *ibm3745* host, the connection will be established across the RSRB virtual ring 99 using RSRB local acknowledgment.

```
source-bridge ring-group 99
source-bridge remote-peer 99 tcp 150.10.13.1
source-bridge remote-peer 99 tcp 150.10.13.2 local-ack

dspu rsrb 88 1 99 4000.FFFF.0001
dspu rsrb enable-host lsap 10

dspu host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10
dspu rsrb start ibm3745

interface serial 0
ip address 150.10.13.1 255.255.255.0
```

The following example defines DSPU to allow connection from downstream PU across RSRB link. The DSPU is identified by its local ring number 88 and its virtual MAC address 4000.FFFF.0001. The downstream PU will specify the DSPU virtual MAC address 4000.FFFF.0001 and SAP address 20 in its host definitions. The DSPU will accept incoming connections from the downstream PU across the RSRB virtual ring 99.

```
source-bridge ring-group 99
source-bridge remote-peer 99 tcp 150.10.13.1
source-bridge remote-peer 99 tcp 150.10.13.2

dspu rsrb 88 1 99 4000.FFFF.0001
dspu rsrb enable-pu lsap 20

dspu pu ciscopu xid-rcv 05D00001 lsap 20

interface serial 0
ip address 150.10.13.1 255.255.255.0
```

Related Commands

A dagger (†) indicates that the command is documented in another chapter.

dspu rsrb enable-host

dspu rsrb enable-pu

dspu rsrb start

source-bridge ring-group †

source-bridge remote-peer †

dspu rsrb enable-host

Use the **dspu rsrb enable-host** global configuration command to enable an RSRB SAP for use by DSPU host connections. Use the **no** form of this command to disable the RSRB SAP.

```
dspu rsrb enable-host [lsap local-sap]  
no dspu rsrb enable-host [lsap local-sap]
```

Syntax Description

lsap *local-sap* (Optional) Specifies that the local SAP address will be activated as an upstream SAP for both receiving incoming connections attempts and for starting outgoing connection attempts. The default is 12.

Default

The default local SAP is 12.

Command Mode

Global configuration

Example

In the following example, the local SAP address 10 of the RSRB is enabled for use by the *ibm3745* host PU:

```
source-bridge ring-group 99  
source-bridge remote-peer 99 tcp 150.10.13.1  
source-bridge remote-peer 99 tcp 150.10.13.2  
  
dspu rsrb 88 1 99 4000.FFFF.0001  
dspu rsrb enable-host lsap 10  
  
dspu host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10  
  
interface serial 0  
ip address 150.10.13.1 255.255.255.0
```

Related Commands

dspu host (Token Ring, Ethernet, FDDI, RSRB)
dspu rsrb

dspu rsrb enable-pu

Use the **dspu rsrb enable-pu** global configuration command to enable an RSRB SAP for use by DSPU downstream connections. Use the **no** form of this command to disable the SAP.

```
dspu rsrb enable-pu [lsap local-sap]  
no dspu rsrb enable-pu [lsap local-sap]
```

Syntax Description

lsap *local-sap* (Optional) Specifies that the local SAP address will be activated as an upstream SAP for both receiving incoming connection attempts and for starting outgoing connection attempts.

Default

The default local SAP is 8.

Command Mode

Global configuration

Example

In the following example, the local SAP address 20 of the RSRB is enabled for use by the *ciscopu* DSPU downstream PU:

```
source-bridge ring-group 99  
source-bridge remote-peer 99 tcp 150.10.13.1  
source-bridge remote-peer 99 tcp 150.10.13.2  
  
dspu rsrb 88 1 99 4000.FFFF.0001  
dspu rsrb enable-pu lsap 20  
  
dspu pu ciscopu xid-rcv 05D00001 lsap 20
```

Related Commands

dspu pu (Token Ring, Ethernet, FDDI, RSRB)
dspu rsrb

dspu rsrb start

Use the **dspu rsrb start** global configuration command to specify that an attempt will be made to connect to the remote resource defined by host name or pu name through the RSRB. Use the **no** form of this command to cancel the definition.

```
dspu rsrb start {host-name | pu-name}
no dspu rsrb start {host-name | pu-name}
```

Syntax Description

<i>host-name</i>	Name of a host defined in a dspu host (Token Ring, Ethernet, FDDI, RSRB) command.
<i>pu-name</i>	Name of a PU defined in a dspu pu (Token Ring, Ethernet, FDDI, RSRB) command.

Default

There are no default settings.

Command Mode

Global configuration

Usage Guidelines

Before issuing this command, you must enable the correct local SAP with the appropriate enable command (**dspu rsrb enable-host** for a host resource, and **dspu rsrb enable-pu** for a PU resource.)

This command is only valid if the target MAC address has been defined in the resource. For a host resource, this not a problem because the MAC address is mandatory, but for a PU resource the MAC address is optional. The command will fail if the MAC address is missing.

Example

In the following example, the DSPU will initiate a connection with the *ibm3745* host PU across the RSRB link:

```
source-bridge ring-group 99
source-bridge remote-peer 99 tcp 150.10.13.1
source-bridge remote-peer 99 tcp 150.10.13.2

dspu rsrb 88 1 99 4000.FFFF.0001
dspu rsrb enable-host lsap 10

dspu host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10
dspu rsrb start ibm3745

interface serial 0
ip address 150.10.13.1 255.255.255.0
```

Related Commands

dspu host (Token Ring, Ethernet, FDDI, RSRB)

dspu pu (Token Ring, Ethernet, FDDI, RSRB)

dspu rsrb enable-host

dspu rsrb enable-pu

dspu rsrb

dspu start

Use the **dspu start** interface configuration command to specify that an attempt will be made to connect to the remote resource defined by host name or pu name. Use the **no** form of this command to cancel the definition.

```
dspu start {host-name | pu-name}
no dspu start {host-name | pu-name}
```

Syntax Description

host-name Name of a host defined in a **dspu host** command.

pu-name Name of a PU defined in a **dspu pu** command.

Default

There are no default settings.

Command Mode

Interface configuration

Usage Guidelines

Before issuing this command, you must enable the correct local SAP with the appropriate **dspu enable-host** or **dspu enable-pu** command.

This command is only valid if the target MAC address has been defined in the resource. For a host resource, this not a problem because specifying the MAC address is mandatory, but for a PU resource specifying the MAC address is optional. The command will fail if the MAC address is missing.

Example

In the following example, the DSPU will initiate a connection with the *ciscopu* downstream PU on the Token Ring interface 0:

```
dspu pu ciscopu xid-rcv 05D00001 rmac 1000.5AED.1F53 lsap 20
interface tokenring 0
dspu enable-pu lsap 20
dspu start ciscopu
```

Related Commands

dspu enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

dspu enable-host (QLLC)

dspu enable-host (SDLC)

dspu enable-pu (Token Ring, Ethernet, Frame Relay, FDDI)

dspu host (Frame Relay)

dspu host (QLLC)

dspu host (SDLC)

dspu pu (Frame Relay)

dspu pu (QLLC)

dspu pu (SDLC)

lan-name

Use the **lan-name** interface configuration command to specify a name for the LAN that is attached to the interface. This name is included in any Alert sent to the SNA host when a problem occurs on this interface or LAN. Use the **no** form of this command to revert to the default name.

lan-name *lan-name*

Syntax Description

<i>lan-name</i>	Name used to identify the LAN when you send Alerts to the SNA host.
-----------------	---

Default

The default name used for the LAN is the name of the interface, such as tr0.

Command Mode

Interface configuration

Example

The following example identifies a LAN:

```
lan-name LAN1
```

Related Command

show sna

location

Use the **location** global configuration command to specify the physical location of the router. This information is included in the Vital Product Information, when this information is requested from an SNA host. Use the **no** form of this command to remove the physical location information.

location *location-description*

Syntax Description

location-description

A description of the physical location of the router. This can be up to 50 characters long, and can include blanks.

Default

No default is specified.

Command Mode

Global configuration

Example

The following example describes the location of a router:

```
location Building G, Level 4, Room 45
```

Related Command

show sna

show dspu

Use the **show dspu** privileged EXEC command to display the status of the DSPU feature.

```
show dspu [pool pool-name | [pu {pu-name |host-name}] [all]]
```

Syntax Description

pool <i>pool-name</i>	(Optional) Name of a pool of LUs (as defined by the dspu pool command).
pu	(Optional) Name of defined PU (as defined by either the dspu pu (Token Ring, Ethernet, FDDI, RSRB) or the dspu host (Token Ring, Ethernet, FDDI, RSRB) command).
<i>host-name</i>	Name of a host defined in a dspu host (Token Ring, Ethernet, FDDI, RSRB) command.
<i>pu-name</i>	Name of a PU defined in a dspu pu (Token Ring, Ethernet, FDDI, RSRB) command.
all	(Optional) Show a detailed status.

Command Mode

Privileged EXEC

Sample Display

The following is sample output of the **show dspu** command. It shows a summary of the DSPU status.

```
Router# show dspu

dspu host HOST_NAMEA interface PU STATUS ssssssss
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LUs CONFIGURED nnn LUs ACTIVE nnn
dspu host HOST_NAMEB interface PU STATUS ssssssss
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LUs CONFIGURED nnn LUs ACTIVE nnn
dspu pu PU_NAMEE interface PU STATUS ssssssss
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LUs CONFIGURED nnn LUs ACTIVE nnn
dspu pu PU_NAMEF interface PU STATUS ssssssss
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LUs CONFIGURED nnn LUs ACTIVE nnn
```

The following is sample output of the **show dspu** command with the **pu** keyword:

```
Router# show dspu pu putest

dspu pu PUTTEST interface PU STATUS ssssssss
RMAC remote_mac RSAP remote_sap LSAP local_sap
XID xid RETRIES retry_count RETRY_TIMEOUT retry_timeout
WINDOW window_size MAXIFRAME max_iframe
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LUs CONFIGURED nnn LUs ACTIVE nnn
```

The following is sample output of the **show dspu** command with the **all** keyword:

```
Router# show dspu pu putest all
```

```

dspu pu PUTEST interface PU STATUS ssssssss
RMAC remote_mac RSAP remote_sap LSAP local_sap
XID xid RETRIES retry_count RETRY_TIMEOUT retry_timeout
WINDOW window_size MAXIFRAME max_iframe
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LU nn PEER PU HOST_NAMEA PEER LU nnn STATUS tttttttt
FRAMES RECEIVED nnnnnn FRAMES SENT nnnnnn
LU nnn PEER PU HOST_NAMEA PEER LU nnn STATUS tttttttt
FRAMES RECEIVED nnnnnn, FRAMES SENT nnnnnn
LU nnn PEER PU HOST_NAMEB PEER LU nnn STATUS tttttttt
FRAMES RECEIVED nnnnnn, FRAMES SENT nnnnnn

```

The following shows a summary of the LUs in a pool:

```

Router# show dspu pool poolname

dspu pool poolname host HOST_NAMEA lu start-lu end-lu

```

The following shows the details of all the LUs in a pool:

```

Router# show dspu pool poolname all

dspu pool poolname host HOST_NAMEA lu start-lu end-lu
DSPU POOL poolname INACTIVITY_TIMEOUT timeout-value
lu nnn host HOST_NAMEA peer lu nnn pu PU_NAMEF status tttttttt
lu nnn host HOST_NAMEA peer lu nnn pu PU_NAMEF status tttttttt
lu nnn host HOST_NAMEA peer lu nnn pu PU_NAMEF status tttttttt

```

show sna

Use the **show sna** privileged EXEC command to display the status of the SNA Service Point feature.

```
show sna [pu host-name [all]]
```

Syntax Description

pu	(Optional) Specifies the name of defined host (as defined by the sna host (Token Ring, Ethernet, FDDI, RSRB) or similar command).
<i>host-name</i>	The name of a host defined in a sna host (Token Ring, Ethernet, FDDI, RSRB) or equivalent command.
all	(Optional) Show a detailed status.

Command Mode

Privileged EXEC

Sample Display

The following is sample output of the **show sna** command. It shows a summary of the SNA features status.

```
Router# show sna  
  
sna host HOST_NAMEA TokenRing1 PU STATUS active  
FRAMES RECEIVED 00450 FRAMES SENT 00010  
LUs CONFIGURED 0 LUs ACTIVE 0
```

The following is sample output of the **show sna** command with the **pu** keyword:

```
Router# show sna pu putest  
  
sna host PUTEEST TokenRing1 PU STATUS active  
RMAC 400000000004 RSAP 04 LSAP 04  
XID 05d00001 RETRIES 255 RETRY_TIMEOUT 30  
WINDOW 7 MAXIFRAME 1472  
FRAMES RECEIVED 0450 FRAMES SENT 0010  
LUs CONFIGURED 0 LUs ACTIVE 0
```

Since the **all** parameter refers to LUs under the PU, this has no significance for the Service Point host.

sna enable-host (QLLC)

Use the **sna enable host** interface configuration command to enable an X.121 subaddress for use by the SNA Service Point on the interface. Use the **no** form of this command to disable SNA Service Point on the interface.

```
sna enable-host qlc x121-sub-address  
no sna enable-host qlc x121-sub-address
```

Syntax Description

qlc Required keyword for QLLC data link control.

x121-sub-address The X.121 subaddress.

Default

No default X.121 sub-address is specified.

Command Mode

Interface configuration

Example

In the following example, X.121 subaddress 320108 is enabled for use by host connections:

```
sna enable-host qlc 320108
```

Related Commands

A dagger (†) indicates that the command is documented in another chapter.

sna host (QLLC)

x25 map qlc†

sna enable-host (SDLC)

Use the **sna enable-host** interface configuration command to enable an SDLC address for use by m host connections. Use the **no** form of this command to cancel the definition.

sna enable-host sdlc *sdlc-address*
no sna enable-host sdlc *sdlc-address*

Syntax Description

sdlc Required keyword for SDLC data link control.

sdlc-address The SDLC address.

Default

No default SDLC address is specified.

Command Mode

Interface configuration

Example

In the following example, SDLC address c1 is enabled for use by host connections:

```
encapsulation sdlc
sdlc role secondary
sdlc address C1
sna enable-host sdlc C1
```

Related Commands

A dagger (†) indicates that the command is documented in another chapter.

encapsulation sdlc[†]
sna host (SDLC)

sna enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

Use the **sna enable host** interface configuration command to enable SNA on the interface. Use the **no** form of this command to disable SNA on the interface.

```
sna enable-host [lsap lsap-addr]  
no sna enable-host [lsap lsap-addr]
```

Syntax Description

lsap (Optional) Activate a local SAP as an upstream SAP, for both receiving connectIn attempts and for starting connectOut attempts.

lsap-addr Local SAP. The default is 12.

Default

The default lsap parameter is 12.

Command Mode

Interface configuration

Example

The following example enables SNA on the interface and specifies that the local SAP 10 will be activated as an upstream SAP:

```
sna enable-host lsap 10
```

Related Commands

show sna

sna host (Frame Relay)

sna host (Token Ring, Ethernet, FDDI, RSRB)

sna host (Frame Relay)

Use the **sna host global configuration** command define a link to an SNA host.

```
sna host host-name xid-snd xid dlci dlci-number [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no sna host host-name xid-snd xid dlci dlci-number [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified SNA host.
xid-snd <i>xid</i>	The XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
dlci <i>dlci-number</i>	.Frame Relay data-link connection identifier (DLCI) number; a decimal number.
rsap <i>remote-sap</i>	(Optional) Specifies the SAP address of the remote host PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Specifies the local SAP address used by the SNA Service Point to establish connection with the remote host.
interface <i>slot/port</i>	(Optional) The slot and port number of the interface.
window <i>window-size</i>	(Optional) Specifies the send and receive window sizes used for the host link. The range is 1 to 127. The default window size is 7.
maxiframe <i>max-iframe</i>	(Optional) Specifies the send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Specifies the number of times the SNA Service Point attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Specifies the delay (in seconds) between attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default remote SAP is 4.
 The default local SAP is 12.
 The default window size is 7.
 The default maximum I-frame size is 1472.
 The default retry count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Example

The following command defines a link to an SNA host:

```
sna host CNM01 xid-snd 05d00001 dlci 200 rsap 4 lsap 4
```

Related Commands

sna enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

sna start

sna host (QLLC)

Use the **sna host global configuration** command define a link to an SNA host.

```
sna host host-name xid-snd xid x25 remote-x121-addr [qllc local-x121-sub-addr]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no sna host host-name xid-snd xid x25 remote-x121-addr [qllc local-x121-sub-addr]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified SNA host.
xid-snd <i>xid</i>	The XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
x25 <i>remote-x121-addr</i>	The SDLC address.
qllc <i>local-x121-sub-addr</i>	(Optional) Specifies the SAP address of the remote host PU. The default is 4.
interface <i>slot/port</i>	(Optional) The slot and port number of the interface.
window <i>window-size</i>	(Optional) Specifies the send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Specifies the send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Specifies the number of times the SNA Service Point attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Specifies the delay (in seconds) between attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default window size is 7.
 The default maximum I-frame size is 1472.
 The default retry count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Example

The following command defines a link to an SNA host:

```
sna host MLM1 xid-snd 05d00001 x25 320108 qllc 08
```

Related Commands

sna enable-host (QLLC)

sna start

sna host (SDLC)

Use the **sna host global configuration** command define a link to an SNA host.

```
sna host host-name xid-snd xid sdlc sdlc-addr [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no sna host host-name xid-snd xid rmac remote-mac [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified SNA host.
xid-snd <i>xid</i>	The XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
sdlc <i>sdlc-addr</i>	The SDLC address.
rsap <i>remote-sap</i>	(Optional) Specifies the SAP address of the remote host PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Specifies the local SAP address used by the SNA Service Point to establish connection with the remote host.
interface <i>slot/port</i>	(Optional) The slot and port number of the interface.
window <i>window-size</i>	(Optional) Specifies the send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Specifies the send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Specifies the number of times the SNA Service Point attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Specifies the delay (in seconds) between attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default remote SAP is 4.
 The default local SAP is 12.
 The default window size is 7.
 The default maximum I-frame size is 1472.
 The default retry count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Example

The following command defines a link to an SNA host:

```
sna host CNM01 xid-snd 05d00001 sdlc c1 rsap 4 lsap 4 focalpoint
```

Related Commands

sna enable-host (SDLC)

sna start

sna host (Token Ring, Ethernet, FDDI, RSRB)

Use the **sna host global configuration** command define a link to an SNA host.

```
sna host host-name xid-snd xid rmac remote-mac [rsap remote-sap] [lsap local-sap] [interface
slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
no sna host host-name xid-snd xid rmac remote-mac [rsap remote-sap] [lsap local-sap]
[interface slot/port] [window window-size] [maxiframe max-iframe] [retries retry-count]
[retry-timeout retry-timeout] [focalpoint]
```

Syntax Description

<i>host-name</i>	The specified SNA host.
xid-snd <i>xid</i>	The XID that will be sent to the host during connection establishment. The XID value is 8 hexadecimal digits that include both Block and ID numbers. For example, if the XID value is 05D00001, the Block number is 05D and the ID number is 00001.
rmac <i>rmac</i>	The MAC address of the remote host PU.
rsap <i>remote-sap</i>	(Optional) Specifies the SAP address of the remote host PU. The default is 4.
lsap <i>local-sap</i>	(Optional) Specifies the local SAP address used by the SNA Service Point to establish connection with the remote host.
interface <i>slot/port</i>	(Optional) The slot and port number of the interface.
window <i>window-size</i>	(Optional) Specifies the send and receive window sizes used for the host link. The range is 1 to 127.
maxiframe <i>max-iframe</i>	(Optional) Specifies the send and receive maximum I-frame sizes used for the host link. The range is 64 to 18432. The default is 1472.
retries <i>retry-count</i>	(Optional) Specifies the number of times the SNA Service Point attempts to retry establishing connection with remote host PU. The range is 0 to 255 (0 = no retry attempts, 255 = infinite retry attempts). The default is 255.
retry-timeout <i>retry-timeout</i>	(Optional) Specifies the delay (in seconds) between attempts to retry establishing connection with remote host PU. The range is 1 to 600 seconds. The default is 30.
focalpoint	(Optional) Specifies that the host link will be used for the focal point support.

Defaults

The default remote SAP is 4.
 The default local SAP is 12.
 The default window size is 7.
 The default maximum I-frame size is 1472.
 The default retry count is 255.
 The default retry timeout is 30.

Command Mode

Global configuration

Example

The following command defines a link to an SNA host:

```
sna host CNM01 xid-snd 05d00001 rmac 4001.3745.1088 rsap 4 lsap 4 focalpoint
```

Related Commands

sna enable-host (Token Ring, Ethernet, Frame Relay, FDDI)

sna rsrb enable-host

sna rsrb start

sna start

sna rsrb

Use the **sna rsrb** interface configuration command to specify the entities that the SNA feature will simulate at the remote source-route bridge. Use the **no** form of this command to cancel the specification.

sna rsrb *local-virtual-ring bridge-number target-virtual-ring virtual-macaddr*
no sna rsrb *local-virtual-ring bridge-number target-virtual-ring virtual-macaddr*

Syntax Description

<i>local-virtual-ring</i>	The local virtual ring.
<i>bridge-number</i>	The virtual bridge number.
<i>target-virtual-ring</i>	The target virtual ring.
<i>virtual-macaddr</i>	The virtual MAC address.

Default

No defaults.

Command Mode

Interface configuration

Usage Guideline

You can specify the bridge number no more than once in any configuration.

Example

The following example identifies a LAN:

```
sna rsrb 88 1 99 4000.FFFF.0001
```

Related Command

sna rsrb start

sna rsrb enable-host

Use the **sna rsrb enable-host** global configuration command to enable an RSRB SAP for use by SNA Service Point. Use the **no** form of this command to disable the RSRB SAP.

```
sna rsrb enable-host [lsap local-sap]  
no sna rsrb enable-host [lsap local-sap]
```

Syntax Description

lsap *local-sap* (Optional) Specifies that the local SAP address will be activated as an upstream SAP for both receiving incoming connections attempts and for starting outgoing connection attempts. The default is 12.

Default

The default local SAP address is 12

Command Mode

Global configuration

Example

In the following example, the local SAP address 10 of the RSRB is enabled for use by the *ibm3745* host PU:

```
source-bridge ring-group 99  
source-bridge remote-peer 99 tcp 150.10.13.1  
source-bridge remote-peer 99 tcp 150.10.13.2  
  
sna rsrb 88 1 99 4000.FFFF.0001  
sna rsrb enable-host lsap 10  
  
sna host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10  
  
interface serial 0  
ip address 150.10.13.1 255.255.255.0
```

Related Command

sna host (Token Ring, Ethernet, FDDI, RSRB)

sna rsrb start

Use the **sna rsrb start** global configuration command to specify that an attempt will be made to connect to the remote resource defined by host name through the RSRB. Use the **no** form of this command to cancel the definition.

```
sna rsrb start host-name  
no sna rsrb start host-name
```

Syntax Description

host-name The name of a host defined in a **sna host (Token Ring, Ethernet, FDDI, RSRB)** or equivalent command.

Default

There are no default settings.

Command Mode

Global configuration

Usage Guidelines

Before issuing this command, you must enable the correct local SAP with the appropriate enable command (**sna rsrb enable-host**.)

Example

In the following example, the SNA Service Point will initiate a connection with the *ibm3745* host PU across the RSRB link:

```
source-bridge ring-group 99  
source-bridge remote-peer 99 tcp 150.10.13.1  
source-bridge remote-peer 99 tcp 150.10.13.2  
  
sna rsrb 88 1 99 4000.FFFF.0001  
sna rsrb enable-host lsap 10  
  
sna host ibm3745 xid-snd 06500001 rmac 4000.3745.0001 lsap 10  
sna rsrb start ibm3745  
  
interface serial 0  
ip address 150.10.13.1 255.255.255.0
```

Related Commands

sna host (Token Ring, Ethernet, FDDI, RSRB)
sna rsrb

sna start

Use the **sna start** interface configuration command to initiate a connection to a remote resource. Use the **no** form of this command to cancel the connection attempt.

```
sna start [resource-name]  
no sna start [resource-name]
```

Syntax Description

resource-name Name of a host defined in a **sna host** command.

Default

No default is specified.

Command Mode

Interface configuration

Usage Guideline

Before issuing this command you must enable the correct local address using the appropriate **sna enable host** command

Example

The following example initiates a connection to CNM01:

```
sna start CNM01
```

Related Commands

sna host (Frame Relay)

sna host (QLLC)

sna host (SDLC)

sna host (Token Ring, Ethernet, FDDI, RSRB)

