



## APPN Configuration Commands

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Use the commands in this chapter to configure and monitor the Advanced Peer-to-Peer Networking (APPN) feature. For APPN configuration tasks and examples, refer to the “Configuring Advanced Peer-to-Peer Networking” chapter of the *Bridging and IBM Networking Configuration Guide*.

# adjacent-cp-name

Use the **adjacent-cp-name** APPN link station configuration command to specify the name of the partner node for the link station. Use the **no** form of this command to delete the definition.

**adjacent-cp-name** *netid.cpname*

**no adjacent-cp-name**

## Syntax Description

*netid.cpname*

Fully qualified network name of the remote control point. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number. The default is that no partner nodes are specified.

## Defaults

No partner nodes are specified.

## Command Modes

APPN link station configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

If the name configured with this command does not match the remote node's control point (CP) name, the link will not come up. If the **no** form of the command is issued, or the command is not issued at all, no checking is done. This command must be specified if the adjacent node is LEN.

## Examples

The following example defines a link station that specifies the name of the partner node:

```
appn link-station APPN1
port TR0
lan-dest-address 1000.C4C1.E5C5
adjacent-cp-name CISCO.APPN1
complete
```

## Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# appn class-of-service

Use the **appn class-of-service** global configuration command to define an APPN class of service that is not an IBM-supplied default. Use the **no** form of this command to return to the default. This command begins the APPN class of service configuration command mode.

**appn class-of-service** *cosname*

**no appn class-of-service** *cosname*

## Syntax Description

|                |   |
|----------------|---|
| <i>cosname</i> | Class of service (COS) name not among IBM default names. COS names must be a Type A character string. A Type A character string contains 1 to 8 of the following characters:<br>A–Z, a–z<br>0–9<br>\$ # @ |
|----------------|---|

## Defaults

There is no default class of service name.

If this command is not issued, an IBM default COS can be used. The IBM supplied default classes of service are #CONNECT, #BATCH, #INTER, #BATCHSC, #INTERSC, CPSVCMG, and SNASVCMG.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

COS is a definition of the transport network characteristics that should be used to establish a particular session. The COS definition assigns relative values to factors such as acceptable levels of security, cost per byte, cost per connect-time, propagation delay, and effective capacity. APPN network nodes use COS to select the best session routes between LUs.

If one of the IBM default classes of service does not meet the needs of a particular network, the **appn class-of-service** global configuration command can be used to create a user-defined definition.

## Examples

The following example defines a COS with one node row and one tg row:

```
appn class-of-service #SECURE
node-row 1 weight 5 congestion no no route-additional-resistance 0 255
tg-row 1 weight 30 byte 0 255 time 0 255 capacity 0 255 delay 0 255 security 200 255
user1 0 255 user2 0 255 user3 0 255
complete
```

| Related Commands | Command                           | Description   |
|------------------|-----------------------------------|---|
|                  | <b>node-row</b>                   | Specifies a node description or node row and associated weights defined for this class of service.        |
|                  | <b>show appn class-of-service</b> | Displays the APPN classes of service defined to the local node.   |
|                  | <b>tg-row</b>                     | Specifies a transmission group description, or transmission group row, and associated weight for the row. |
|                  | <b>transmission-priority</b>      | Specifies the transmission priority for the COS.  |

# appn connection-network

Use the **appn connection-network** global configuration command to specify the fully qualified network name for the connection network. Use the **no** form of this command to delete the definition. This command begins the APPN connection network configuration command mode.

**appn connection-network** *netid.cname*

**no appn connection-network** *netid.cname*

## Syntax Description

*netid.cname*

Fully qualified network name for the connection network. *cname* is the name of the virtual network node in the connection network.

A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

## Defaults

No default connection network name is assigned.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

The connection network name must be the same on all nodes that define the connection network, and must be different from any other connection network, LU, or control point in the total network.

## Examples

The following example defines a connection network using APPN port TR0:

```
appn connection-network CISCO.CAPPN1
port TR0
complete
```

| Related Commands | Command                               | Description   |
|------------------|---------------------------------------|---|
|                  | <b>port (APPN connection network)</b> | Specifies the ports that have visibility to the connection network. |
|                  | <b>show appn connection-network</b>   | Displays the APPN connection networks defined to the local node.    |

# appn control-point

Use the **appn control-point** global configuration command to specify the fully qualified control point name for the node. Use the **no** form of this command to delete the name and clear all APPN definitions. This command begins the APPN control point configuration command mode.

**appn control-point** *netid.cpname*

**no appn control-point** *netid.cpname*

## Syntax Description

*netid.cpname*

Fully qualified control point name for the local node.

A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

## Defaults

No default control point name is assigned.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

You must issue the **appn control-point** command to activate APPN routing. There can be only one control point definition in the system. The control point name must be unique in the network.

## Examples

The following example defines a control point named CISCO.APPN1:

```
appn control-point CISCO.APPN1
complete
```

## Related Commands

| Command             | Description   |
|---------------------|---|
| <b>appn routing</b> | Indicates that APPN routing should be activated.                      |
| <b>appn start</b>   | Activates the APPN subsystem in this node.                            |
| <b>appn stop</b>    | Deactivates APPN routing without affecting the current configuration. |

| <b>Command</b>                          | <b>Description</b>  |
|---|---|
| <b>backup-dlus (APPN control point)</b> | Specifies the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. |
| <b>buffer-percent</b>                   | Specifies the percent of buffers that are reserved for use by APPN.   |
| <b>dlur (appn)</b>                      | Specifies that the DLUR function is supported on this CP.   |
| <b>dlus (APPN control point)</b>        | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs.   |
| <b>interrupt-switched</b>               | Specifies that ISR should be processed at the interrupt level.  |
| <b>max-cached-entries</b>               | Specifies the maximum number of cached directory entries.   |
| <b>max-cached-trees</b>                 | Specifies the maximum number of cached COS routing trees.   |
| <b>maximum-memory</b>                   | Specifies the maximum amount of memory available to APPN.   |
| <b>route-additional-resistance</b>      | Specifies an arbitrary value for the local node.  |
| <b>safe-store-cycle</b>                 | Specifies the number of cache instances to be saved.  |
| <b>safe-store-host</b>                  | Specifies the IP host address and the file path for safe store.   |
| <b>safe-store-interval</b>              | Specifies how often the directory database is stored to permanent media.  |
| <b>show appn node</b>                   | Displays information about the local APPN control point.  |
| <b>xid-block-number</b>                 | Specifies the first three digits of the node identifier for the local node.   |
| <b>xid-id-number</b>                    | Specifies the last five digits of the node ID for the local node.   |

# appn link-station

Use the **appn link-station** global configuration command to assign the name of an adjacent link station. Use the **no** form of this command to delete the link station name. This command begins the APPN link station configuration command mode.

**appn link-station** *linkname*

**no appn link-station** *linkname*

## Syntax Description

|                 |   |
|-----------------|---|
| <i>linkname</i> | Name that identifies the link station. The name must be a Type A string. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|-----------------|---|

## Defaults

No default link station name is assigned.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

A link represents a connection between a local link station and a link station in an adjacent node. The link can be considered a direct connection between two distinct Type 2.1 or Type 2.0 nodes. The link station provides a route over which local sessions or intermediate sessions can pass. Two link stations are required to build a link: one on each node.

A link station can be predefined with the **appn link-station** command, or dynamically defined. If you specify **service-any** in the associated **appn port** command, link stations can be dynamically defined when a connect request is received. In this case, the **appn link-station** command would not be required. You must define an APPN link station if you intend this node to initiate the connection to the adjacent node.

## Examples

The following example defines a link station using port TR0:

```
appn link-station CISCO1
port TR0
lan-destination-address 0200.0000.0001
complete
```

| Related Commands | Command  | Description   |
|------------------|--|---|
|                  | <b>adjacent-cp-name</b>                          | Specifies the name of the partner node for the link station.  |
|                  | <b>atm-dest-address</b>                          | Specifies the address of the partner node for ATM links.  |
|                  | <b>backup-dlus (APPN link station)</b>           | Specifies the default backup DLUS node that provides SSCP services to the downstream PUs of the link in the event that the DLUS is unable to provide the DLUR function. |
|                  | <b>connect-at-startup</b>                        | Specifies that the link will call out to the partner and attempt to bring up the link when the definition of the link is complete.                                      |
|                  | <b>cost-per-byte (APPN link station)</b>         | Specifies the cost per byte of sending a byte of data over this connection.   |
|                  | <b>cost-per-connect-time (APPN link station)</b> | Specifies the relative cost of the link.  |
|                  | <b>cp-cp-sessions-supported</b>                  | Specifies that a CP-CP session can be established over this connection.   |
|                  | <b>dlur-dspu-name</b>                            | Specifies the name of the downstream PU connected by this link.   |
|                  | <b>dlus (APPN link station)</b>                  | Specifies the name of the default DLUS node that provides SSCP services to the downstream PUs of this link station.   |
|                  | <b>effective-capacity (APPN link station)</b>    | Specifies the bit rate for the connection.  |
|                  | <b>fr-dest-address</b>                           | Specifies the address of the partner node for Frame Relay links.  |
|                  | <b>lan-dest-address</b>                          | Specifies the MAC address of the partner node.  |
|                  | <b>limited-resource (APPN link station)</b>      | Specifies that the connection be taken down when no sessions are using the connection.  |
|                  | <b>link-queuing</b>                              | Specifies queuing options and parameters for the link station.  |
|                  | <b>port (APPN link station)</b>                  | Specifies the port that can be used to access the link station.   |
|                  | <b>ppp-dest-address</b>                          | Specifies the remote SAP of a node across a PPP interface.  |
|                  | <b>propagation-delay (APPN link station)</b>     | Specifies the amount of inherent delay of the connection.   |
|                  | <b>pu-type-20</b>                                | Indicates that the downstream PU whose dependent LU request is propagated through the link is a PU type 2.0.  |
|                  | <b>retry-limit (APPN link station)</b>           | Specifies the number of times a link station attempts reactivation after failure.   |
|                  | <b>role (APPN link station)</b>                  | Specifies the link station role used in XID negotiations.   |
|                  | <b>sdlc-dest-address</b>                         | Specifies the local address of the partner node for nonswitched SDLC.   |
|                  | <b>security (APPN link station)</b>              | Specifies the security level of the connection.   |
|                  | <b>show appn link-station</b>                    | Displays information about the APPN link stations active on or defined to the local node.   |
|                  | <b>smds-dest-address</b>                         | Specifies the SMDS address of the partner node.   |
|                  | <b>tg-number</b>                                 | Specifies the transmission group number for the connection.   |

| <b>Command</b>                            | <b>Description</b>  |
|---|---|
| <b>user-defined-1 (APPN link station)</b> | Specifies the relative value for a network-unique transmission group characteristic.        |
| <b>user-defined-2 (APPN link station)</b> | Specifies the relative value for a network-unique transmission group characteristic.        |
| <b>user-defined-3 (APPN link station)</b> | Specifies the relative value for a network-unique transmission group characteristic.        |
| <b>verify-adjacent-node-type</b>          | Specifies that the adjacent node type must be verified as a requirement of link activation. |
| <b>x25-dest-address</b>                   | Specifies the local address of the partner node for QLLC.                                   |

# appn mode

Use the **appn mode** global configuration command to specify a new mode or to change an IBM-defined mode and identify the class of service associated with the mode name. Use the **no** form of this command to delete the previous definition. This command begins the APPN mode configuration command mode.

**appn mode** *modename*

**no appn mode** *modename*

## Syntax Description

|                 |   |
|-----------------|---|
| <i>modename</i> | Name of the mode. A Type A character string. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|-----------------|---|

## Defaults

IBM-defined [blank] mode

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

The IBM-defined modes are #BATCH, #BATCHSC, #INTER, #INTERSC, #CPSVCMG, #SNASVCMG, #CPSVRMG, and [blank]. These definitions can not be changed.

This command is required when LEN nodes are using this node for network services. The LEN node will issue a BIND containing this mode name; this command will be used to associate the mode name with a COS name.

## Examples

The following example changes the IBM-defined mode #BATCH to use the #CONNECT class of service:

```
appn mode #BATCH
class-of-service #CONNECT
complete
```

## Related Commands

| Command                 | Description  |
|-------------------------|--|
| <b>class-of-service</b> | Specifies the class of service that maps to a particular mode name.  |
| <b>show appn mode</b>   | Displays information about the APPN modes defined to the local node. |

# appn partner-lu-location

Use the **appn partner-lu-location** global configuration command to specify an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services. Use the **no** form of this command to delete the previous definition. This command begins the APPN partner LU configuration command mode.

**appn partner-lu-location** *netid.luname*

**no appn partner-lu-location** *netid.luname*

## Syntax Description

*netid.luname*

Fully qualified name of the partner LU. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

## Defaults

No default *netid.luname* is specified. You must supply a value; otherwise, the configuration will fail.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

Use this command to define an entry in the directory database. This command improves network performance by allowing directed LOCATE (because the partner name is known) instead of a broadcast. The disadvantage is that definitions must be created. Alternatively, partner names can be discovered dynamically and added to the database as they are learned. This process, however, requires either prior sessions to the node or broadcast traffic (which causes additional network traffic) sent to locate the node.

## Examples

The following example defines the location of an LU named CISCO.LU21:

```
appn partner-lu-location CISCO.LU21
  owning-cp CISCO.CP2
complete
```

| Related Commands | Command                    | Description  |
|------------------|----------------------------|--|
|                  | <b>owning-cp</b>           | Specifies the name of the CP that owns the partner LU.                             |
|                  | <b>serving-nn</b>          | Specifies the name of the network node server servicing the partner LU.            |
|                  | <b>show appn directory</b> | Displays negative cache entries and the remaining time and threshold-count values. |
|                  | <b>wildcard</b>            | Specifies this entry as a “wildcard.”  |

# appn path-switch connection

Use the **appn path-switch connection** EXEC command to manually initiate a path switch if a better path exists.

**appn path-switch connection** *rtp-connection-id*

|                           |  |   |
|---------------------------|--|---|
| <b>Syntax Description</b> | <i>rtp-connection-id</i>   | An RTP connection ID is a 16-byte hexadecimal number. |
| <b>Command Modes</b>      | EXEC   |   |
| <b>Command History</b>    | <b>Release</b>   | <b>Modification</b>                                   |
|                           | 11.3   | This command was introduced.                          |
| <b>Examples</b>           | The following example initiates a path switch:<br><pre>appn path-switch connection 800000000A06278</pre> |   |
| <b>Related Commands</b>   | <b>Command</b>   | <b>Description</b>                                    |
|                           | <b>show appn rtp</b>   | Displays information about the RTP connections.       |

# appn port

Use the **appn port** global configuration command to define an APPN port and relate it to a previously defined interface. Use the **no** form of this command to cancel the APPN port definition.

```
appn port portname {interface | rsrb | vdlc}
```

```
no appn port portname
```

## Syntax Description

|                  |  |
|------------------|--|
| <i>portname</i>  | Port name to be associated with the interface.   |
| <i>interface</i> | Previously defined interface type and number with which the port name is to be associated.   |
| <b>rsrb</b>      | Specify <b>rsrb</b> instead of an interface if this port will utilize RSRB as a transport protocol.  |
| <b>vdlc</b>      | Specify <b>vdlc</b> to allow link stations using this virtual port to connect over DLSw+, or any other higher-layer protocol that is CLSI-compliant, using virtual data-link control (VDLC). |

## Defaults

No default port name is specified. No default interface is provided. You must provide the port name and interface, or the configuration will fail.

## Command Modes

Global configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

At least one APPN port must be defined for each interface that will participate in APPN routing. If more than one service access point (SAP) will be used over a particular port, then a port must be defined for each SAP.

If you configure APPN to run over DLSw+, you specify **vdlc**, and must also use the **vdlc** APPN port configuration command to identify which ring group the APPN VDLC port uses and, optionally, which virtual MAC address is used as the local MAC address identifying this APPN port.

## Examples

The following example associates an APPN port named FDDI0 with FDDI interface 0:

```
appn port FDDI0 fddi0
complet
```

In the following example, the **appn port vdlc** command creates an APPN VDLC port named “vdlcport,” and the **vdlc** APPN port configuration command identifies the ring group (100) and VDLC virtual MAC address (4000.3745.0000):

```
appn port VDLCPORT vdlc
vdlc 100 vmac 4000.3745.0000
complete
```

## Related Commands

| Command                                  | Description  |
|--|--|
| <b>appn start port</b>                   | Activates APPN routing over a particular port.   |
| <b>appn stop port</b>                    | Deactivates APPN routing over a specified port.  |
| <b>cost-per-byte (APPN port)</b>         | Specifies the cost per byte of sending a byte of data through this port.   |
| <b>cost-per-connect-time (APPN port)</b> | Specifies the cost per connect time.   |
| <b>desired-max-send-btu-size</b>         | Specifies the maximum BTU size on this link.   |
| <b>effective-capacity (APPN port)</b>    | Specifies the effective capacity of a link.  |
| <b>interface</b>                         | Configures an interface type and enters interface configuration mode.  |
| <b>limited-resource (APPN port)</b>      | Specifies that the link be taken down when no sessions are using the link.   |
| <b>local-sap</b>                         | Specifies the local SAP to activate on the interface.  |
| <b>max-link-stations</b>                 | Specifies the maximum number of active link stations allowed on this port.   |
| <b>max-rcv-btu-size</b>                  | Specifies the desired maximum receive BTU.   |
| <b>propagation-delay (APPN port)</b>     | Specifies the propagation delay of the link.   |
| <b>reserved-inbound</b>                  | Specifies the number of link stations (out of max-link-stations) to be reserved for inbound links (partner initiates).                           |
| <b>reserved-outbound</b>                 | Specifies the number of link stations (of max-link-stations) to be reserved for outbound link stations where this node initiates the connection. |
| <b>retry-limit (APPN port)</b>           | Specifies how many times a line will attempt reactivation after failure.   |
| <b>role (APPN port)</b>                  | Specifies the link station role used in XID negotiations for all link stations defined through this port.  |
| <b>rsrb-virtual-station</b>              | Configures APPN for RSRB.  |
| <b>sdlc-sec-addr</b>                     | Configures APPN for SDLC.  |
| <b>security (APPN port)</b>              | Specifies security level of the connection.  |
| <b>service-any</b>                       | Specifies that this port will create dynamic transmission groups for outbound or inbound links.  |
| <b>show appn port</b>                    | Displays information about the APPN ports active on the local node.  |
| <b>user-defined-1 (APPN port)</b>        | Specifies the relative value for a network-unique transmission group characteristic.   |
| <b>user-defined-2 (APPN port)</b>        | Specifies the relative value for a network-unique transmission group characteristic.   |

| <b>Command</b>                    | <b>Description</b>  |
|-----------------------------------|---|
| <b>user-defined-3 (APPN port)</b> | Specifies the relative value for a network-unique transmission group characteristic.  |
| <b>vdlc</b>                       | Identifies which ring group the APPN VDLC port uses and, optionally, which virtual MAC address is used as the local MAC address identifying this APPN port. |
| <b>x25-subaddress</b>             | Configures APPN over QLLC.  |

# appn routing

Use the **appn routing** global configuration command to indicate that APPN routing should be activated. Use the **no** form of this command to deactivate APPN routing.

**appn routing**

**no appn routing**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** APPN routing is disabled.

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**Command Modes** Global configuration

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| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

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**Usage Guidelines** For **appn routing** to complete successfully, an APPN control point must be configured using the **appn control-point** global configuration command.

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**Examples** The following example activates APPN routing:

```
appn routing
```

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| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>  |
|-------------------------|---------------------------|---|
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node.        |
|                         | <b>appn start</b>         | Activates the APPN subsystem in this node.                            |
|                         | <b>appn stop</b>          | Deactivates APPN routing without affecting the current configuration. |

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# appn start

Use the **appn start** EXEC command to activate the APPN subsystem in this node.

**appn start**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** The APPN subsystem is disabled.

---

**Command Modes** EXEC

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| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

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**Examples** The following example activates APPN:

```
appn start
```

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| Related Commands | Command             | Description   |
|------------------|---------------------|---|
|                  | <b>appn routing</b> | Indicates that APPN routing should be activated.                      |
|                  | <b>appn stop</b>    | Deactivates APPN routing without affecting the current configuration. |

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# appn start link-station

Use the **appn start link-station** EXEC command to activate a logical APPN link.

**appn start link-station** *linkname*

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>linkname</i> | Name of the link-station. Must be a Type A character string. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|---------------------------|-----------------|---|

|                 |                                      |
|-----------------|--------------------------------------|
| <b>Defaults</b> | No logical APPN links are activated. |
|-----------------|--------------------------------------|

|                      |      |
|----------------------|------|
| <b>Command Modes</b> | EXEC |
|----------------------|------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

**Examples** The following example activates an APPN link station:

```
appn start link-station TR0
```

|                         |                               |   |
|-------------------------|-------------------------------|---|
| <b>Related Commands</b> | <b>Command</b>                | <b>Description</b>  |
|                         | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                         | <b>appn stop link-station</b> | Deactivates an APPN connection between the local node and an adjacent node.               |
|                         | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# appn start port

Use the **appn start port** EXEC command to activate APPN routing over a particular port.

**appn start port** *portname*

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>portname</i> | <p>Name of the port. Must be a Type A character string.</p> <p>A Type A character string contains 1 to 8 of the following characters:</p> <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|---------------------------|-----------------|---|

|                 |                               |
|-----------------|-------------------------------|
| <b>Defaults</b> | No APPN routing is activated. |
|-----------------|-------------------------------|

|                      |      |
|----------------------|------|
| <b>Command Modes</b> | EXEC |
|----------------------|------|

| <b>Command History</b> | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.0</td> <td>This command was introduced.</td> </tr> </tbody> </table> | Release | Modification | 11.0 | This command was introduced. |
|------------------------|--|---------|--------------|------|------------------------------|
| Release                | Modification   |         |              |      |                              |
| 11.0                   | This command was introduced.   |         |              |      |                              |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command is also used when the APPN subsystem is already started and a port is added or a characteristic is changed by subcommand. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example activates APPN routing over port TR0: |
|-----------------|---|

```
appn start port TR0
```

| <b>Related Commands</b> | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>appn port</b></td> <td>Defines an APPN port and relates it to a previously defined interface.</td> </tr> <tr> <td><b>appn stop port</b></td> <td>Deactivates APPN routing over a specified port.</td> </tr> <tr> <td><b>show appn port</b></td> <td>Displays information about the APPN ports active on the local node.</td> </tr> </tbody> </table> | Command | Description | <b>appn port</b> | Defines an APPN port and relates it to a previously defined interface. | <b>appn stop port</b> | Deactivates APPN routing over a specified port. | <b>show appn port</b> | Displays information about the APPN ports active on the local node. |
|-------------------------|---|---------|-------------|------------------|--|-----------------------|---|-----------------------|---|
| Command                 | Description   |         |             |                  |  |                       |   |                       |   |
| <b>appn port</b>        | Defines an APPN port and relates it to a previously defined interface.  |         |             |                  |  |                       |   |                       |   |
| <b>appn stop port</b>   | Deactivates APPN routing over a specified port.   |         |             |                  |  |                       |   |                       |   |
| <b>show appn port</b>   | Displays information about the APPN ports active on the local node.   |         |             |                  |  |                       |   |                       |   |

# appn stop

Use the **appn stop** EXEC command to deactivate APPN routing without affecting the current configuration.

**appn stop**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** This command has no default state.

---

**Command Modes** EXEC

---

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

---

---

**Examples** The following example deactivates APPN routing:

```
appn stop
```

---

| Related Commands | Command                   | Description  |
|------------------|---------------------------|--|
|                  | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                  | <b>appn routing</b>       | Indicates that APPN routing should be activated.               |
|                  | <b>appn start</b>         | Activates the APPN subsystem in this node.                     |

---

# appn stop link-station

Use the **appn stop link-station** EXEC command to deactivate an APPN connection between the local node and an adjacent node.

**appn stop link-station** *linkname*

|                           |                 |  |
|---------------------------|-----------------|--|
| <b>Syntax Description</b> | <i>linkname</i> | <p>Name of the link station. The name must be a Type A character string.</p> <p>A Type A character string contains 1 to 8 of the following characters:</p> <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|---------------------------|-----------------|--|

|                 |                                    |
|-----------------|------------------------------------|
| <b>Defaults</b> | This command has no default state. |
|-----------------|------------------------------------|

|                      |      |
|----------------------|------|
| <b>Command Modes</b> | EXEC |
|----------------------|------|

| <b>Command History</b> | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.0</td> <td>This command was introduced.</td> </tr> </tbody> </table> | Release | Modification | 11.0 | This command was introduced. |
|------------------------|--|---------|--------------|------|------------------------------|
| Release                | Modification   |         |              |      |                              |
| 11.0                   | This command was introduced.   |         |              |      |                              |

|                 |  |
|-----------------|--|
| <b>Examples</b> | <p>The following example deactivates an APPN link between the local node and an adjacent node:</p> <pre>appn stop link-station APPN1</pre> |
|-----------------|--|

| <b>Related Commands</b>        | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>appn link-station</b></td> <td>Assigns the name of an adjacent link station.</td> </tr> <tr> <td><b>appn start link-station</b></td> <td>Activates a logical APPN link.</td> </tr> </tbody> </table> | Command | Description | <b>appn link-station</b> | Assigns the name of an adjacent link station. | <b>appn start link-station</b> | Activates a logical APPN link. |
|--------------------------------|---|---------|-------------|--------------------------|---|--------------------------------|--------------------------------|
| Command                        | Description   |         |             |                          |   |                                |                                |
| <b>appn link-station</b>       | Assigns the name of an adjacent link station.   |         |             |                          |   |                                |                                |
| <b>appn start link-station</b> | Activates a logical APPN link.  |         |             |                          |   |                                |                                |

# appn stop port

Use the **appn stop port** EXEC command to deactivate APPN routing over a specified port.

**appn stop port** *portname*

## Syntax Description

|                 |  |
|-----------------|--|
| <i>portname</i> | Name of the port. Must be a Type A character string.<br>A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|-----------------|--|

## Defaults

This command has no default state.

## Command Modes

EXEC

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

For a port deactivation to be successful, no APPN link station can be active on that port.

## Examples

The following example deactivates APPN routing over port TR0:

```
appn stop port TR0
```

## Related Commands

| Command                | Description  |
|------------------------|--|
| <b>appn port</b>       | Defines an APPN port and relates it to a previously defined interface. |
| <b>appn start port</b> | Activates APPN routing over a particular port.                         |

# atm-dest-address

Use the **atm-dest-address** APPN link station configuration command to specify the address of the partner node for ATM links. Use the **no** form of this command to return to the default.

**atm-dest-address** *pvc*

**no atm-dest-address**

|                           |            |   |
|---------------------------|------------|---|
| <b>Syntax Description</b> | <i>pvc</i> | Permanent virtual circuit (PVC) of the remote node. Valid range is 1 to 4096. |
|---------------------------|------------|---|

**Defaults** No default PVC or SAP are provided.

**Command Modes** APPN link station configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.1           | This command was introduced. |

**Usage Guidelines** The command should be specified only if the APPN port used by the link station is an ATM port. Note that for the Cisco 4500, the default maximum number of PVCs allowed is 32.

**Examples** The following example specifies ATM destination address 1:

```
interface ATM2/0
  atm pvc 1 1 12 aal5nlpid
  map-group atm-appn2
  !
appn control-point NETA.APPN2
  complete
!
appn port ATM ATM2/0
  complete
!
appn link-station ATMLINK
  port ATM
  atm-dest-address 1
  complete
```

| Related Commands | Command                       | Description   |
|------------------|-------------------------------|---|
|                  | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                  | <b>lan-dest-address</b>       | Specifies the MAC address of the partner node.  |
|                  | <b>sdlc-dest-address</b>      | Specifies the local address of the partner node for nonswitched SDLC.                     |
|                  | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## backup-dlus (APPN control point)

Use the **backup dlus** APPN control point configuration command to specify the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. Use the **no** form of this command to delete the definition.

**backup-dlus** *netid.cpname*

**no backup-dlus**

### Syntax Description

*netid.cpname*

Fully qualified network name. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

### Defaults

No backup DLUS is specified.

### Command Modes

APPN control point configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

You must specify **dlur** and **dlus** APPN control point before you can specify **backup-dlus**. You can use the **backup-dlus** link station configuration command to override this command for a particular link station.

### Examples

The following example defines an APPN control point with a backup DLUS:

```
appn control-point CISCO.ROUTER
dlur max-pus 100
dlus CISCO.APPN1
backup-dlus CISCO.APPN2
complete
```

| Related Commands | Command                                | Description   |
|------------------|--|---|
|                  | <b>appn control-point</b>              | Specifies the fully qualified control point name for the node.  |
|                  | <b>backup-dlus (APPN link station)</b> | Specifies the default backup DLUS node that provides SSCP services to the downstream PUs of the link in the event that the DLUS is unable to provide the DLUR function. |
|                  | <b>dlur (appn)</b>                     | Specifies that the DLUR function is supported on this CP.   |

## backup-dlus (APPN link station)

Use the **backup-dlus** APPN link station configuration command to specify the default backup DLUS node that provides SSCP services to the downstream PUs of the link in the event that the DLUS is unable to provide the DLUR function. Use the **no** form of this command to return to the default.

**backup-dlus** *netid.cpname*

**no backup-dlus**

### Syntax Description

*netid.cpname*

Fully qualified network name. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

### Defaults

The default state is **no backup-dlus**.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

You must specify the **dlur** and **dlus** APPN control point commands before you can specify **backup-dlus**. You can use the **backup-dlus** link station configuration command on the link station to override this command for that particular link station.

### Examples

The following example specifies the backup DLUS node for a link station:

```
appn link-station CISCO.HOST
port FDDIO
lan-dest-address 0200.0000.1234
dlus CISCO.APPN1
backup-dlus CISCO.APPN3
complete
```

| Related Commands | Command                                 | Description   |
|------------------|---|---|
|                  | <b>appn link-station</b>                | Assigns the name of an adjacent link station.   |
|                  | <b>backup-dlus (APPN control point)</b> | Specifies the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. |
|                  | <b>dlus (APPN control point)</b>        | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs.   |
|                  | <b>dlus (APPN link station)</b>         | Specifies the name of the default DLUS node that provides SSCP services to the downstream PUs of this link station.                                   |

# buffer-percent

Use the **buffer-percent** APPN control point configuration command to specify the percent of buffers that are reserved for use by APPN. Use the **no** form of this command to cancel the buffer reservation.

**buffer-percent** *number*

**no buffer-percent**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Maximum percentage of I/O memory that APPN is allowed to allocate for buffers. The valid range is 1 to 100 percent. The default is 100 percent. |
|---------------------------|---------------|---|

|                 |             |
|-----------------|-------------|
| <b>Defaults</b> | 100 percent |
|-----------------|-------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | Use the <b>buffer-percent</b> command to ensure that APPN will not monopolize the buffers. If other protocols are to be routed through the local node, this command can reserve buffers for protocols other than APPN. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example limits APPN's buffer usage to 25 percent of the device's buffers: |
|-----------------|---|

```
appn control-point CISCO.ROUTER
  buffer-percent 25
complete
```

|                         |                           |   |
|-------------------------|---------------------------|---|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>  |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node.        |
|                         | <b>show buffers</b>       | Displays statistics for the buffer pools on the network server.       |
|                         | <b>show memory</b>        | Shows statistics about memory, including memory-free pool statistics. |

# central-resource-registration

Use the **central-resource-registration** APPN control point configuration command to enable the central resource registration function. Use the **no** form of this command to disable the central resource registration function.

**central-resource-registration**

**no central-resource-registration**

## Syntax Description

This command has no arguments or keywords.

## Defaults

The central resource registration function is enabled.

## Command Modes

APPN control point configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.2    | This command was introduced. |

## Usage Guidelines

By default, the central resource registration function is enabled in the router so that registration of downstream resources in the central directory server will be attempted by the router when it receives a request from the control point that owns the resource. If there is unpredictable behavior related to the central resource registration or central directory server, use the **no central-resource-registration** command to disable the central resource registration function. In normal circumstances there should not be any reason to disable the central resource registration function.

## Examples

The following example disables the central resource registration function:

```
appn control-point neta.router
no central-resource-registration
complete
```

## Related Commands

| Command                    | Description  |
|----------------------------|--|
| <b>show appn directory</b> | Displays negative cache entries and the remaining time and threshold-count values. |

# class-of-service

Use the **class-of-service** APPN mode configuration command to specify the class of service that maps to a particular mode name. Use the **no** form of this command to return to the default.

**class-of-service** *cosname*

**no class-of-service**

## Syntax Description

|                |   |
|----------------|---|
| <i>cosname</i> | Name of the class of service. Must be a Type A character string. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> <p>The default is #CONNECT.</p> |
|----------------|---|

## Defaults

The default class-of-service name is #CONNECT.

## Command Modes

APPN mode configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

LEN nodes use this node for network services. The mode name is passed in the BIND and this command is used to correlate the mode name to a class-of-service name.

## Examples

The following example defines a mode with class of service #INTER:

```
appn mode MAPPN1
  class-of-service #INTER
complete
```

## Related Commands

| Command          | Description  |
|------------------|--|
| <b>appn mode</b> | Specifies a new mode or changes an IBM-defined mode and identifies the class of service associated with the mode name. |

# connect-at-startup

Use the **connect-at-startup** APPN link station configuration command to specify that the link will call out to the partner and attempt to bring up the link when the link's definition is complete. Use the **no** form of this command to return to the default.

**connect-at-startup**

**no connect-at-startup**

**Syntax Description** This command has no arguments or keywords.

**Defaults** Connect-at-startup is enabled.

**Command Modes** APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines** This command first appeared in Cisco IOS Release 11.0.

**Examples** The following example deactivates call out for APPN link station ETHER12:

```
appn link-station ETHER12
appn port ETHER1
lan-dest-address 0200.0000.4321
no connect-at-startup
complete
```

| Related Commands | Command                  | Description                                   |
|------------------|--------------------------|---|
|                  | <b>appn link-station</b> | Assigns the name of an adjacent link station. |

## cost-per-byte (APPN link station)

Use the **cost-per-byte** APPN link station configuration command to specify the cost per byte of transmitting a byte of data over this connection. Use the **no** form of this command to return to the default.

**cost-per-byte** *cost*

**no cost-per-byte**

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>cost</i> | Number in the range 0 to 255. The default is the value specified in the <b>appn port</b> command. |
|---------------------------|-------------|---|

**Defaults** The value specified in the **appn port** command.

**Command Modes** APPN link station configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** Use this command to specify the relative cost to transmit a byte over the link. The relative cost per byte is used in route selection. Cost per byte may be specified at the port level, in which case it applies to all link stations that connect through the port. Cost per byte specified at the link station level overrides the cost per byte specified at the port level, and relates to the defined link station only. This value is compared to the values specified for a class of service to determine if this link can be used to support the class of service.

**Examples** The following example sets the cost-per-byte value to 10:

```
appn link-station CISC01
port RSRB1
lan-dest-address 1000.2020.0211
cost-per-byte 10
complete
```

| <b>Related Commands</b> | <b>Command</b>                   | <b>Description</b>  |
|-------------------------|----------------------------------|---|
|                         | <b>appn link-station</b>         | Assigns the name of an adjacent link station.   |
|                         | <b>cost-per-byte (APPN port)</b> | Specifies the cost per byte of sending a byte of data through this port.                  |
|                         | <b>show appn link-station</b>    | Displays information about the APPN link stations active on or defined to the local node. |

## cost-per-byte (APPN port)

Use the **cost-per-byte** APPN port configuration command to specify the cost per byte of transmitting a byte of data through this port. Use the **no** form of this command to return to the default.

**cost-per-byte** *cost*

**no cost-per-byte**

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>cost</i> | Number in the range 0 to 255. The default is 0. |
|---------------------------|-------------|---|

**Defaults** The default cost is 0.

**Command Modes** APPN port configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** Specifying **cost-per-byte** at the port level applies to all link stations accessed through this port, unless **cost-per-byte** is specified on an individual **appn link-station** command. Specifying this value on the **appn link-station** command overrides the port value. The cost is used in route selection for a particular class of service. Cost per byte specified at the link station level overrides the cost per byte specified at the port level, and relates to the defined link station only. This value is compared to the values specified for a class of service to determine if this link can be used to support the class of service.

**Examples** The following example sets the cost per byte value to 10:

```
appn port FR0 serial 0
  cost-per-byte 100
complete
```

| <b>Related Commands</b> | <b>Command</b>                           | <b>Description</b>  |
|-------------------------|--|---|
|                         | <b>appn port</b>                         | Defines an APPN port and relates it to a previously defined interface.      |
|                         | <b>cost-per-byte (APPN link station)</b> | Specifies the cost per byte of sending a byte of data over this connection. |
|                         | <b>show appn port</b>                    | Displays information about the APPN ports active on the local node.         |

## cost-per-connect-time (APPN link station)

Use the **cost-per-connect-time** APPN link station configuration command to specify the relative cost of the link. Use the **no** form of this command to return to the default.

**cost-per-connect-time** *cost*

**no cost-per-connect-time**

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>cost</i> | Number in the range 0 to 255. The default is the value specified in the <b>appn port</b> command. |
|---------------------------|-------------|---|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The value specified in the <b>appn port</b> command. |
|-----------------|--|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The relative cost of the link, which typically reflects the tariff of the transmission facility, is used in route selection. Cost per connect time may be specified at the port level, in which case it applies to all link stations that connect through the port. Cost per connect time specified at the link station level overrides the cost per connect time specified at the port level, and relates to the defined link station only. This value is compared to the values specified for a class of service to determine if this link can be used to support the class of service. |
|-------------------------|---|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example sets the cost per connect time to 100: |
|-----------------|--|

```
appn link-station CISCO4
port FDDI0
cost-per-connect-time 100
complete
```

|                         |  |   |
|-------------------------|--|---|
| <b>Related Commands</b> | <b>Command</b>                           | <b>Description</b>  |
|                         | <b>appn link-station</b>                 | Assigns the name of an adjacent link station.   |
|                         | <b>cost-per-connect-time (APPN port)</b> | Specifies the cost per connect time.  |
|                         | <b>show appn link-station</b>            | Displays information about the APPN link stations active on or defined to the local node. |

## cost-per-connect-time (APPN port)

Use the **cost-per-connect-time** APPN port configuration command to specify the cost per connect time. Use the **no** form of this command to return to the default.

**cost-per-connect-time** *cost*

**no cost-per-connect-time**

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>cost</i> | Number in the range 0 to 255. The default is 0. |
|---------------------------|-------------|---|

**Defaults** The default cost is 0.

**Command Modes** APPN port configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** Specifying **cost-per-connect-time** at the port level applies to all link stations accessed through this port, unless **cost-per-connect-time** is specified on an individual **appn link-station** command. Specifying this value on the **appn link-station** command overrides the port value. The cost is used in route selection for a particular class of service. Cost per connect time specified at the link station level overrides the cost per connect time specified at the port level, and relates to the defined link station only. This value is compared to the values specified for a class of service to determine if this link can be used to support the class of service.

**Examples** The following example sets the cost per connect time to 100:

```
appn port SDLC0 Serial1
  cost-per-connect-time 100
complete
```

| <b>Related Commands</b> | <b>Command</b>                                   | <b>Description</b>   |
|-------------------------|--|--|
|                         | <b>appn port</b>                                 | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>cost-per-connect-time (APPN link station)</b> | Specifies the relative cost of the link.                               |
|                         | <b>show appn port</b>                            | Displays information about the APPN ports active on the local node.    |

# cp-cp-sessions-supported

Use the **cp-cp-sessions-supported** APPN link station configuration command to specify that a control point-control point (CP-CP) session can be established over this connection. Use the **no** form of this command to specify that a CP-CP session cannot be established over this link.

**cp-cp-sessions-supported**

**no cp-cp-sessions-supported**

**Syntax Description** This command has no arguments or keywords.

**Defaults** CP-CP sessions are supported.

**Command Modes** APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines** The **no** form of this command must be specified for a link to a LEN node. CP sessions to additional NNs are optional. Having fewer CP-CP sessions reduces the number of topology update messages and memory required, while increasing convergence time (the time required to update all network nodes).

**Examples** The following example specifies that no CP-CP sessions are supported:

```
appn link-station FDDI41
port FDDI1
lan-dest-address 0400.0000.2323
no cp-cp-sessions-supported
complete
```

| Related Commands | Command                          | Description   |
|------------------|----------------------------------|---|
|                  | <b>appn link-station</b>         | Assigns the name of an adjacent link station.   |
|                  | <b>show appn link-station</b>    | Displays information about the APPN link stations active on or defined to the local node.   |
|                  | <b>verify-adjacent-node-type</b> | Specifies that the adjacent node type must be verified as a requirement of link activation. |

# desired-max-send-btu-size

Use the **desired-max-send-btu-size** APPN port configuration command to specify the maximum BTU size on this link. Use the **no** form of this command to return to the default.

**desired-max-send-btu-size** *size*

**no desired-max-send-btu-size**

|                           |             |   |
|---------------------------|-------------|---|
| <b>Syntax Description</b> | <i>size</i> | BTU size (in bytes) on this link, in the range 99 to 5107. The default is 1024 bytes. |
|---------------------------|-------------|---|

|                 |                                 |
|-----------------|---------------------------------|
| <b>Defaults</b> | The default size is 1024 bytes. |
|-----------------|---------------------------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | The MTU size must be big enough to accommodate the configured size of the BTU. |
|-------------------------|--|

**Examples** The following example sets the maximum BTU size to 4000:

```
appn port TR0 tokenring 0/0
desired-max-send-btu-size 4000
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>mtu</b>            | Adjusts the maximum packet size or MTU size.                           |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

## dlur (appn)

Use the **dlur** APPN control point configuration command to specify that the Dependent LU Requestor (DLUR) function is supported on this CP. Use the **no** form of this command to return to the default.

**dlur** [**max-pus** *number*]

**no dlur**

### Syntax Description

|                              |   |
|------------------------------|---|
| <b>max-pus</b> <i>number</i> | (Optional) Maximum number of physical units (PUs) served by this DLUR, in the range 1 to 100000. There is no default. If <b>max-pus</b> is not specified, there is no limit on the number of PUs served by this DLUR. |
|------------------------------|---|

### Defaults

If the **dlur** command is not specified, the DLUR function is not supported on this CP. If **max-pus** is not specified, there is no limit on the number of PUs served by this DLUR.

### Command Modes

APPN control point configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Examples

The following example specifies the DLUR function on the CP and specifies that the maximum number of PUs served by this DLUR is 100:

```
appn control-point CISCO.ROUTER
dlur max-pus 100
dlus CISCO.HOST
complete
```

### Related Commands

| Command                          | Description   |
|----------------------------------|---|
| <b>appn control-point</b>        | Specifies the fully qualified control point name for the node.                            |
| <b>dlus (APPN control point)</b> | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs. |
| <b>show appn dlur-lu</b>         | Displays all active SSCP dependent LUs known to DLUR.                                     |
| <b>show appn dlur-pu</b>         | Displays all active SSCP dependent PUs known to DLUR.                                     |
| <b>show appn dlus</b>            | Displays all LUs known to DLUR.   |

# dlur-dspu-name

Use the **dlur-dspu-name** APPN link station configuration command to specify the name of the downstream PU connected by this link. Use the **no** form of this command to delete the definition.

**dlur-dspu-name** *pu-name*

**no dlur-dspu-name**

|                           |                |   |
|---------------------------|----------------|---|
| <b>Syntax Description</b> | <i>pu-name</i> | Type A character string. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|---------------------------|----------------|---|

**Defaults** No default name is specified.

**Command Modes** APPN link station configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** The DLUR function requires the specification of the DSPU name for a PU 2.0 node. Specification is also required when the DLUR function must activate the link to a PU 2.1 or PU 2.0 node, when driven by a host-initiated PU activation, and when the link to the PU is not active.

**Examples** The following example specifies the DSPU name of a downstream node:

```
appn link-station LINK4
port TR1
lan-dest-address 1000.2020.0211
dlur-dspu-name PU003334
pu-type-20
complete
```

| <b>Related Commands</b> | <b>Command</b>                  | <b>Description</b>  |
|-------------------------|---------------------------------|---|
|                         | <b>appn link-station</b>        | Assigns the name of an adjacent link station.   |
|                         | <b>dlur (appn)</b>              | Specifies that the DLUR function is supported on this CP.   |
|                         | <b>dlus (APPN link station)</b> | Specifies the name of the default DLUS node that provides SSCP services to the downstream PUs of this link station. |

## dlus (APPN control point)

Use the **dlus** APPN control point configuration command to specify the name of the default Dependent LU Server (DLUS) that provides SSCP services to the downstream PUs. Use the **no** form of this command to delete the definition.

**dlus** *netid.cpname*

**no dlus**

### Syntax Description

*netid.cpname*

Fully qualified CP name. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

### Defaults

No default DLUS is defined.

### Command Modes

APPN control point configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

The **dlur** command must be specified if **dlus** is specified. The name of the node-default DLUS should be specified when supporting downstream PUs that request or require ACTPUs, when DLUR does not currently have an active session with the DLUS, and when no DLUS or back-up DLUS name has been provided on the APPN link station definition.

### Examples

The following example defines the DLUS:

```
appn control-point CISCO.ROUTER1
dlur
dlus CISCO.APPN1
complete
```

| <b>Related Commands</b> | <b>Command</b>                  | <b>Description</b>  |
|-------------------------|---------------------------------|---|
|                         | <b>appn control-point</b>       | Specifies the fully qualified control point name for the node.  |
|                         | <b>dlur (appn)</b>              | Specifies that the DLUR function is supported on this CP.   |
|                         | <b>dlus (APPN link station)</b> | Specifies the name of the default DLUS node that provides SSCP services to the downstream PUs of this link station. |
|                         | <b>show appn dlur-lu</b>        | Displays all active SSCP dependent LUs known to DLUR.   |

## dlus (APPN link station)

Use the **dlus** APPN link station configuration command to specify the name of the default Dependent LU Server (DLUS) node that provides SSCP services to the downstream PUs of this link station. Use the **no** form of this command to delete the definition.

**dlus** *netid.cpname*

**no dlus**

### Syntax Description

*netid.cpname*

Fully qualified CP name. A fully qualified name is a string of 1 to 8 characters, a period, and another a string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

### Defaults

No default DLUS is specified.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

The *dlus* command is used to override the value of *netid.cpname* specified in the control point definition.

### Examples

The following example specifies the DLUS for a specific APPN link station:

```
appn link-station LINK5
port TR1
lan-dest-address 0200.0000.5678
dlus CISCO.APPN1
complete
```

| <b>Related Commands</b> | <b>Command</b>                   | <b>Description</b>  |
|-------------------------|----------------------------------|---|
|                         | <b>appn control-point</b>        | Specifies the fully qualified control point name for the node.                            |
|                         | <b>dlur (appn)</b>               | Specifies that the DLUR function is supported on this CP.                                 |
|                         | <b>dlus (APPN control point)</b> | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs. |
|                         | <b>show appn dlus</b>            | Displays all LUs known to DLUR.   |

## effective-capacity (APPN link station)

Use the **effective-capacity** APPN link station configuration command to specify the bit rate for the connection. Use the **no** form of this command to return to the default.

**effective-capacity** *capacity*

**no effective-capacity**

|                           |                 |  |
|---------------------------|-----------------|--|
| <b>Syntax Description</b> | <i>capacity</i> | Number of bits per second in the range 0 to 100000000. The default is the value specified in the <b>appn port</b> command. |
|---------------------------|-----------------|--|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The value specified in the <b>appn port</b> command. |
|-----------------|--|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | The bit rate is compared to the class of service requirements when selecting routes. This can be specified on the link station command to identify the bit rate for this link station only. This value overrides the value specified on the port command. Effective capacity is used by the node to determine the least cost route for APPN intermediate sessions. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example defines the effective capacity: |
|-----------------|---|

```
appn link-station FRLINK44
port FR0
fr-dest-address 44
effective-capacity 4000000
complete
```

|                         |                                       |   |
|-------------------------|---------------------------------------|---|
| <b>Related Commands</b> | <b>Command</b>                        | <b>Description</b>  |
|                         | <b>appn link-station</b>              | Assigns the name of an adjacent link station.   |
|                         | <b>effective-capacity (APPN port)</b> | Specifies the effective capacity of a link.   |
|                         | <b>show appn link-station</b>         | Displays information about the APPN link stations active on or defined to the local node. |

## effective-capacity (APPN port)

Use the **effective-capacity** APPN port configuration command to specify the effective capacity of a link. Use the **no** form of this command to return to the default.

**effective-capacity** *capacity*

**no effective-capacity**

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>capacity</i> | Number of bits per second in the range 0 to 100000000.<br>The default is media dependent. |
|---------------------------|-----------------|---|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The default is media dependent:<br>Ethernet—10,000,000 bps<br>FDDI—100,000,000 bps<br>Frame Relay—56,000 bps<br>QLLC—56,000 bps<br>RSRB—56,000 bps<br>SDLC—56,000 bps<br>Token Ring—16,000,000 bps |
|-----------------|--|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | Specifying this command at the port level identifies the capacity for all link stations accessed through this port. Specifying this command on the link station command overrides the port value. This command also specifies the value for dynamically created transmission groups. The cost is used in route selection for a particular class of service. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example defines the effective capacity: |
|-----------------|---|

```
appn port FR0 serial 1/1
  effective-capacity 2000000
complete
```

## ■ effective-capacity (APPN port)

| Related Commands | Command                                       | Description  |
|------------------|---|--|
|                  | <b>appn port</b>                              | Defines an APPN port and relates it to a previously defined interface. |
|                  | <b>effective-capacity (APPN link station)</b> | Specifies the bit rate for the connection.                             |
|                  | <b>show appn port</b>                         | Displays information about the APPN ports active on the local node.    |

# fr-dest-address

Use the **fr-dest-address** APPN link station configuration command to specify the address of the partner node for Frame Relay links. Use the **no** form of this command to return to the default.

**fr-dest-address** *dltci* [*sap*]

**no fr-dest-address**

| Syntax Description |  |  |
|--------------------|--|--|
| <i>dltci</i>       |  | Number in the range 16 to 1007 that represents the DLCI, or virtual circuit, for a Frame Relay connection.             |
| <i>sap</i>         |  | (Optional) 1-byte hexadecimal number in the range 04 to EC, and divisible by 4. The default value is 04 (hexadecimal). |

**Defaults**

No default DLCI is provided.  
The default SAP value is 04 (hexadecimal).

**Command Modes**

APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines**

The command should be specified only if the APPN port used by the link station is a Frame Relay port.

**Examples**

The following example specifies DLCI 100:

```
appn link-station FRLNK100
port FR0
fr-dest-address 100
complete
```

| Related Commands | Command                       | Description   |
|------------------|-------------------------------|---|
|                  | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                  | <b>lan-dest-address</b>       | Specifies the MAC address of the partner node.  |
|                  | <b>sdltc-dest-address</b>     | Specifies the local address of the partner node for nonswitched SDLC.                     |
|                  | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## hpr (APPN control point)

Use the **hpr** APPN control point configuration command to specify that HPR is supported in this router. Use the **no** form of this command to disable HPR in this router.

**hpr**

**no hpr**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** HPR is not enabled.

---

**Command Modes** APPN control point configuration

---

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.3    | This command was introduced. |

---



---

**Examples** The following example enables HPR support for this router:

```
hpr
```

---

| Related Commands | Command               | Description  |
|------------------|-----------------------|--|
|                  | <b>show appn node</b> | Displays information about the local APPN control point. |
|                  | <b>show appn rtp</b>  | Displays information about the RTP connections.          |

---

## hpr (APPN link station)

Use the **hpr** APPN link station configuration command to specify that HPR is supported over the indicated link station. Use the **no** form of this command to disable HPR over the link station.

**hpr**

**no hpr**

---

**Syntax Description**

This command has no arguments or keywords.

---

**Defaults**

If the **hpr** command is not specified at the link station, then the default is the value configured for the corresponding port definition.

---

**Command Modes**

APPN link station configuration

---

**Command History**

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

---

**Examples**

The following example disables HPR support on the link station:

```
no hpr
```

---

**Related Commands**

| Command                         | Description   |
|---------------------------------|---|
| <b>hpr (APPN control point)</b> | Specifies that HPR is supported in this router.   |
| <b>hpr (APPN port)</b>          | Specifies that HPR is supported over the indicated port.                                  |
| <b>show appn link-station</b>   | Displays information about the APPN link stations active on or defined to the local node. |

## hpr (APPN port)

Use the **hpr** APPN port configuration command to specify that HPR is supported over the indicated port. Use the **no** form of this command to disable HPR over the link station.

**hpr**

**no hpr**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** If this command is not specified for a port, the default is the value configured for the control point definition.

---

**Command Modes** APPN port configuration

---

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.3    | This command was introduced. |

---



---

**Examples** The following example disables HPR support on port:

```
no hpr
```

---

| Related Commands | Command                         | Description   |
|------------------|---------------------------------|---|
|                  | <b>hpr (APPN control point)</b> | Specifies that HPR is supported in this router.   |
|                  | <b>hpr (APPN port)</b>          | Specifies that HPR is supported over the indicated port.                                  |
|                  | <b>show appn link-station</b>   | Displays information about the APPN link stations active on or defined to the local node. |

---

# hpr max-sessions

Use the **hpr max-sessions** APPN control point configuration command to specify the maximum number of sessions allowed over an RTP connection. Use the **no** form of this command to cancel the specification.

**hpr max-sessions** *num-sessions*

**no hpr max-sessions**

|                           |                     |   |
|---------------------------|---------------------|---|
| <b>Syntax Description</b> | <i>num-sessions</i> | Maximum number of sessions allowed over an RTP connection. The valid range is 1 to 65535. The default is 65535. |
|---------------------------|---------------------|---|

**Defaults** The default maximum number of sessions allowed is 65535.

**Command Modes** APPN control point configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.3           | This command was introduced. |

**Examples** The following example sets the maximum number of sessions allowed over an RTP session to 32:

```
hpr max-sessions 32
```

| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>                                       |
|-------------------------|-----------------------|--|
|                         | <b>show appn node</b> | Displays information about the local APPN control point. |
|                         | <b>show appn rtp</b>  | Displays information about the RTP connections.          |

# hpr retries

Use the **hpr retries** APPN control point configuration command to specify the number of times to retry sending a packet before initiating a path switch of the RTP connection. Use the **no** form of this command to cancel the specification.

**hpr retries** *low-retries medium-retries high-retries network-retries*

**no hpr retries**

## Syntax Description

|                        |   |
|------------------------|---|
| <i>low-retries</i>     | Number of times to retry sending a low-priority packet before initiating a path switch. Valid values are 0 to 10. The default is 6.     |
| <i>medium-retries</i>  | Number of times to retry sending a medium-priority packet before initiating a path switch. Valid values are 0 to 10. The default is 6.  |
| <i>high-retries</i>    | Number of times to retry sending a high-priority packet before initiating a path switch. Valid values are 0 to 10. The default is 6.    |
| <i>network-retries</i> | Number of times to retry sending a network-priority packet before initiating a path switch. Valid values are 0 to 10. The default is 6. |

## Defaults

The default for all four retry values is 6.

## Command Modes

APPN control point configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

## Examples

The following example sets the HPR retry values:

```
hpr retries 10 6 4 2
```

## Related Commands

| Command                    | Description   |
|----------------------------|---|
| <b>hpr timers liveness</b> | Specifies how many seconds to wait for a packet to be received before initiating a path switch. |
| <b>show appn node</b>      | Displays information about the local APPN control point.  |
| <b>show appn rtp</b>       | Displays information about the RTP connections.   |

# hpr sap

Use the **hpr sap** APPN port configuration command to specify the SAP for automatic network routing frames. Use the **no** form of this command to cancel the SAP specification and revert to the default SAP.

**hpr sap** *sap*

**no hpr sap**

## Syntax Description

|            |   |
|------------|---|
| <i>sap</i> | SAP value, in hexadecimal, used for automatic network routing frames. Valid hexadecimal values are even numbers in the range 0x02 to 0xFE. The default SAP value is 0xc8. |
|------------|---|

## Defaults

The default SAP value is 0xc8.

## Command Modes

APPN port configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

## Usage Guidelines

The SAP value is configured on the port and is used by all link stations that use that port.

## Examples

The following example specifies a SAP value of 0x02:

```
hpr sap 0x02
```

## Related Commands

| Command               | Description   |
|-----------------------|---|
| <b>show appn port</b> | Displays information about the APPN ports active on the local node. |
| <b>show appn rtp</b>  | Displays information about the RTP connections.                     |

## hpr timers liveness

Use the **hpr timers liveness** APPN control point configuration command to specify how many seconds to wait for a packet to be received before initiating a path switch. Use the **no** form of this command to cancel the timers.

**hpr timers liveness** *low-time medium-time high-time network-time*

**no hpr timers liveness**

### Syntax Description

|                     |   |
|---------------------|---|
| <i>low-time</i>     | Time, in seconds, for a node to wait to send an HPR status request when no low-priority data traffic is present. The valid range is 1 to 180 seconds. The default time is 45 seconds.     |
| <i>medium-time</i>  | Time, in seconds, for a node to wait to send an HPR status request when no medium-priority data traffic is present. The valid range is 1 to 180 seconds. The default time is 45 seconds.  |
| <i>high-time</i>    | Time, in seconds, for a node to wait to send an HPR status request when no high-priority data traffic is present. The valid range is 1 to 180 seconds. The default time is 45 seconds.    |
| <i>network-time</i> | Time, in seconds, for a node to wait to send an HPR status request when no network-priority data traffic is present. The valid range is 1 to 180 seconds. The default time is 45 seconds. |

### Defaults

The default for each of the four time values is 45 seconds.

### Command Modes

APPN control point configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

### Examples

The following example sets the HPR liveness timers:

```
hpr timers liveness 180 120 60 30
```

### Related Commands

| Command               | Description  |
|-----------------------|--|
| <b>hpr retries</b>    | Specifies the number of times to retry sending a packet before initiating a path switch of the RTP connection. |
| <b>show appn node</b> | Displays information about the local APPN control point.   |
| <b>show appn rtp</b>  | Displays information about the RTP connections.  |

## hpr timers path-switch

Use the **hpr timers path-switch** APPN control point configuration command to specify the amount of time allowed to attempt a path switch for an RTP connection. Use the **no** form of this command to cancel the specification.

**hpr timers path-switch** *low-time medium-time high-time network-time*

**no hpr timers**

### Syntax Description

|                     |  |
|---------------------|--|
| <i>low-time</i>     | Time, in seconds, allowed to perform a path switch for a low-priority RTP connection. The valid range is 0 to 7200 seconds. The default is 480 seconds.    |
| <i>medium-time</i>  | Time, in seconds, allowed to perform a path switch for a medium-priority RTP connection. The valid range is 0 to 7200 seconds. The default is 240 seconds. |
| <i>high-time</i>    | Time, in seconds, allowed to perform a path switch for a high-priority RTP connection. The valid range is 0 to 7200 seconds. The default is 120 seconds.   |
| <i>network-time</i> | Time, in seconds, allowed to perform a path switch for a network-priority RTP connection. The valid range is 0 to 7200 seconds. The default is 60 seconds. |

### Defaults

The default time allowed to attempt a low-priority RTP connection is 480 seconds.

The default time allowed to attempt a medium-priority RTP connection is 240 seconds.

The default time allowed to attempt a high-priority RTP connection is 120 seconds.

The default time allowed to attempt a network-priority connection is 60 seconds.

### Command Modes

APPN control point configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

### Examples

The following example sets the HPR path switch timers:

```
hpr timers path-switch 1200 600 300 120
```

# interrupt-switched

Use the **interrupt-switched** APPN control point configuration command to specify that ISR should be processed at the interrupt level. Use the **no** form of this command to cancel the specification.

**interrupt-switched**

**no interrupt-switched**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** Disabled

---

**Command Modes** APPN control point

---

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

---



---

**Usage Guidelines** This command improves the performance of ISR routing. The command can be used only if segment size is the same on all nodes in the message path. Re-segmenting cannot be accomplished at the interrupt level. In addition, this command should only be used when routing between interfaces with similar speeds. This is because no pacing is done in the node when **interrupt-switched** is specified.

---

**Examples** The following example specifies that ISR should be processed at the interrupt level:

```
appn control-point CISCO.APPN1
  interrupt-switched
complete
```

---

| Command                               | Description   |
|---------------------------------------|---|
| <b>appn control-point</b>             | Specifies the fully qualified control point name for the node.                                      |
| <b>show appn intermediate-session</b> | Displays information about the SNA sessions that are currently being routed through the local node. |

---

# lan-dest-address

Use the **lan-dest-address** APPN link station configuration command to specify the MAC address of the partner node. Use the **no** form of this command to return to the default.

**lan-dest-address** *lan-addr* [*sap*]

**no lan-dest-address**

| Syntax Description |  |  |
|--------------------|--|--|
| <i>lan-addr</i>    |  | 12-byte hexadecimal number in the form <i>xxxx.xxxx.xxxx</i> .   |
| <i>sap</i>         |  | (Optional) 1-byte hexadecimal number in the range 04 to EC, and divisible by 4. The default SAP value is 04 (hexadecimal). |

**Defaults**

No default *lan-addr* is specified.  
The default SAP value is 04 (hexadecimal).

**Command Modes**

APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines**

This command is required for interface types Token Ring, Ethernet, or FDDI. It is not allowed for other interface types.

**Examples**

The following example sets the MAC address and SAP for a link to a partner node:

```
appn link-station LINK0001
port ETHER1
lan-dest-address 1234.cfe0.9745 08
complete
```

| Related Commands | Command                       | Description   |
|------------------|-------------------------------|---|
|                  | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                  | <b>fr-dest-address</b>        | Specifies the address of the partner node for Frame Relay links.                          |
|                  | <b>sdlc-dest-address</b>      | Specifies the local address of the partner node for nonswitched SDLC.                     |
|                  | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## limited-resource (APPN link station)

Use the **limited-resource** APPN link station configuration command to specify that the connection be taken down when no sessions are using it. Use the **no** form of this command to specify that the connection will remain active when no sessions are using it.

**limited-resource**

**no limited-resource**

**Syntax Description** This command has no arguments or keywords.

**Defaults** The value specified in the **appn port** command.

**Command Modes** APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines** This command identifies a link that has a higher cost or is a switched connection and should not remain active if no resource is using the link. The **limited-resource** command issued at the APPN link station level overrides the same command issued at the APPN port level.

**Examples** The following example specifies that the link be taken down when no sessions are active:

```
appn link-station FRLINK34
port FR1
fr-dest-address 34
limited-resource
complete
```

| Related Commands | Command                             | Description   |
|------------------|-------------------------------------|---|
|                  | <b>appn link-station</b>            | Assigns the name of an adjacent link station.   |
|                  | <b>limited-resource (APPN port)</b> | Specifies that the link be taken down when no sessions are using the link.                |
|                  | <b>show appn link-station</b>       | Displays information about the APPN link stations active on or defined to the local node. |

# limited-resource (APPN port)

Use the **limited-resource** APPN link station configuration command to specify that the link be taken down when no sessions are using the link. Use the **no** form of this command to specify that the link will remain active when no sessions are using the link.

**limited-resource**

**no limited-resource**

## Syntax Description

This command has no arguments or keywords.

## Defaults

The default is no limited resource.

## Command Modes

APPN port configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

This command identifies a link that has a higher cost or is a switched connection and should not remain active if no resource is using the link. This command applies to all link stations accessed through this port. Specifying limited resource at the link station level overrides this command.

## Examples

The following example activates limited resource:

```
appn port FR0 serial 0/2
  limited-resource
complete
```

## Related Commands

| Command                                     | Description  |
|---|--|
| <b>appn port</b>                            | Defines an APPN port and relates it to a previously defined interface.                 |
| <b>limited-resource (APPN link station)</b> | Specifies that the connection be taken down when no sessions are using the connection. |
| <b>show appn port</b>                       | Displays information about the APPN ports active on the local node.                    |

# link-queuing

Use the **link-queuing** APPN link station configuration command to specify queuing options and parameters for the link station. Use the **no** form of this command to cancel the option.

**link-queuing** { **priority** *level* | **custom** *queue-number* }

**no link-queuing**

## Syntax Description

|                                   |  |
|-----------------------------------|--|
| <b>priority</b> <i>level</i>      | Priority level, indicated by one of the following keywords: <b>high</b> , <b>medium</b> , <b>normal</b> , <b>low</b> . |
| <b>custom</b> <i>queue-number</i> | Priority number used to specify custom queuing for the link station. The default is that no number is assigned.        |

## Defaults

No default priority number is assigned.

## Command Modes

APPN link station configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Examples

The following example specifies medium priority level queuing for the link station:

```
link-queuing medium
```

## Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# local-sap

Use the **local-sap** APPN port configuration command to specify the local service access point (SAP) to activate on the interface. Use the **no** form of this command to return to the default.

**local-sap** *sap*

**no local-sap**

## Syntax Description

|            |  |
|------------|--|
| <i>sap</i> | Hexadecimal number in the range 04 to EC, and divisible by 4. The default is 04. |
|------------|--|

## Defaults

The default local SAP is 04 (hexadecimal).

## Command Modes

APPN port configuration

## Command History

| Release | Modification                  |
|---------|-------------------------------|
| 11.0    | This command was introduced.; |

## Examples

The following example specifies the local SAP:

```
appn port TR0 tokenring 0
  local-sap 44
complete
```

## Related Commands

| Command               | Description  |
|-----------------------|--|
| <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
| <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# locate-queuing

Use the **locate-queuing** APPN control point configuration command to enable the locate throttling feature on this control point and prevent multiple broadcast locate searches to the same destination LU. Use the **no** form of this command to disable the locate throttling feature.

**locate-queuing**

**no locate-queuing**

**Syntax Description** This command has no arguments or keywords.

**Defaults** Locate queuing is disabled.

**Command Modes** APPN control point configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.3    | This command was introduced. |

**Usage Guidelines** When the **locate-queuing** command is enabled, it is applied at the network node server only for locate search requests from its end node.

**Examples** The following example enables the locate throttling feature:

```
locate-queuing
```

| Related Commands | Command                    | Description  |
|------------------|----------------------------|--|
|                  | <b>appn control-point</b>  | Specifies the fully qualified control point name for the node.                     |
|                  | <b>negative-caching</b>    | Specifies that the negative caching feature is enabled on this control point.      |
|                  | <b>show appn directory</b> | Displays negative cache entries and the remaining time and threshold-count values. |
|                  | <b>show appn node</b>      | Displays information about the local APPN control point.                           |

# max-cached-entries

Use the **max-cached-entries** APPN control point configuration command to specify the maximum number of cached directory entries. Use the **no** form of this command to return to the default.

**max-cached-entries** *number*

**no max-cached-entries**

|                           |               |  |
|---------------------------|---------------|--|
| <b>Syntax Description</b> | <i>number</i> | Maximum number of cached directory entries. The valid range is 0 to 32767. The default is 255. |
|---------------------------|---------------|--|

|                 |                              |
|-----------------|------------------------------|
| <b>Defaults</b> | 255 cached directory entries |
|-----------------|------------------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command enables you to balance memory usage and performance. A large number requires more memory, but reduces the number of network broadcasts. Cached directory entries are created as nodes learn locations of other network resources. This command affects cached entries only. A value of zero still allows location of node, but broadcasts are required. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example specifies the maximum number of cached directory entries: |
|-----------------|---|

```
appn control-point CISCO.ROUTER
max-cached-entries 100
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>show appn node</b>     | Displays information about the local APPN control point.       |

# max-cached-trees

Use the **max-cached-trees** APPN control point configuration command to specify the maximum number of cached class of service routing trees. Use the **no** form of this command to return to the default.

**max-cached-trees** *number*

**no max-cached-trees**

|                           |               |  |
|---------------------------|---------------|--|
| <b>Syntax Description</b> | <i>number</i> | Maximum number of cached class of service routing trees. The valid range is 0 to 32767. The default is 20. |
|---------------------------|---------------|--|

|                 |                                   |
|-----------------|-----------------------------------|
| <b>Defaults</b> | 20 class of service routing trees |
|-----------------|-----------------------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command allows you to balance memory usage and performance. Each cached tree represents all paths through the network for a class of service. If you specify a lower number, fewer will be caches and longer processing time may be required to calculate the paths through the network and select a route. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example specifies the maximum number of cached topology trees: |
|-----------------|--|

```
appn control-point CISCO.ROUTER
max-cached-trees 5
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>show appn node</b>     | Displays information about the local APPN control point.       |

# maximum-memory

Use the **maximum-memory** APPN control point configuration command to specify the maximum amount of memory available to APPN. Use the **no** form of this command to cancel the specification.

**maximum-memory** *bytes*

**no maximum-memory**

|                           |              |   |
|---------------------------|--------------|---|
| <b>Syntax Description</b> | <i>bytes</i> | Maximum amount of memory (in bytes) available to APPN. The valid range is 3000000 to 64000000 bytes. The default is that APPN has access to all memory. |
|---------------------------|--------------|---|

**Defaults** The default is that APPN has access to all memory.

**Command Modes** APPN control point configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** This command ensures that APPN will not monopolize the memory of the device and that other protocols being routed will have memory available.

**Examples** The following example specifies the maximum amount of memory available to APPN as 16000000 bytes (16 MB):

```
appn control-point CISCO.APPN1
maximum-memory 16000000
complete
```

| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|-------------------------|---------------------------|--|
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |

# max-link-stations

Use the **max-link-stations** APPN port configuration command to specify the maximum number of active link stations allowed on this port. Use the **no** form of this command to return to the default.

**max-link-stations** *number*

**no max-link-stations**

|                           |               |  |
|---------------------------|---------------|--|
| <b>Syntax Description</b> | <i>number</i> | Number in the range 1 to 255. Must be greater than or equal to the sum of <b>reserved-inbound</b> and <b>reserved-outbound</b> . The default is media dependent. |
|---------------------------|---------------|--|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The default is media dependent:<br>Ethernet—255<br>FDDI—255<br>Frame Relay—255<br>QLLC—1<br>RSRB—255<br>SDLC—1<br>Token Ring—255 |
|-----------------|--|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | For leased negotiable lines, the maximum value is 1.<br>For leased primary lines, not multidrop, the maximum value is 1 and inbound is 0.<br>For leased secondary lines and switched lines the maximum value is 1. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example sets the maximum link stations:<br><pre>appn port TR01 tokenring 0/1 max-link-stations 10 complete</pre> |
|-----------------|--|

**Related Commands**

| <b>Command</b>           | <b>Description</b>   |
|--------------------------|--|
| <b>appn port</b>         | Defines an APPN port and relates it to a previously defined interface.   |
| <b>reserved-inbound</b>  | Specifies the number of link stations (out of max-link-stations) to be reserved for inbound links (partner initiates).                           |
| <b>reserved-outbound</b> | Specifies the number of link stations (of max-link-stations) to be reserved for outbound link stations where this node initiates the connection. |
| <b>show appn port</b>    | Displays information about the APPN ports active on the local node.  |

# max-rcv-btu-size

Use the **max-rcv-btu-size** APPN port configuration command to specify the desired maximum receive BTU. Use the **no** form of this command to return to the default.

**max-rcv-btu-size** *size*

**no max-rcv-btu-size**

|                           |             |  |
|---------------------------|-------------|--|
| <b>Syntax Description</b> | <i>size</i> | Maximum receive BTU (in bytes), in the range 99 to 5107.<br>The default is 1024 bytes. |
|---------------------------|-------------|--|

|                 |            |
|-----------------|------------|
| <b>Defaults</b> | 1024 bytes |
|-----------------|------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | The BTU specifies a maximum message size at the physical layer, similar to the MTU in TCP/IP. Do not confuse BTU with MAXRU, which is session related. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example sets the maximum BTU value to 500: |
|-----------------|--|

```
appn port TR11 tokenring1/1
max-rcv-btu-size 500
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# minimum-memory

Use the **minimum-memory** APPN control point configuration command to specify the minimum amount of memory available to APPN. Use the **no** form of the command to cancel the specification.

**minimum-memory** *bytes*

**no minimum-memory**

|                           |              |  |
|---------------------------|--------------|--|
| <b>Syntax Description</b> | <i>bytes</i> | Maximum amount of memory (in bytes) available to APPN. The valid range is 1000000 to 64000000. The default is 1000000 bytes. |
|---------------------------|--------------|--|

|                 |                               |
|-----------------|-------------------------------|
| <b>Defaults</b> | The default is 1000000 bytes. |
|-----------------|-------------------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command ensures that APPN will always have a specified amount of memory. Memory that is dedicated to APPN will not be available for other processing. |
|-------------------------|--|

**Examples** The following example reserves 10000000 bytes (10 MB) of memory for APPN:

```
appn control-point CISCO.APPN1
  minimum-memory 10000000
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>maximum-memory</b>     | Specifies the maximum amount of memory available to APPN.      |

# negative-caching

Use the **negative-caching** APPN control point configuration command to specify that the negative caching feature is enabled on this control point. Use the **no** form of this command to disable the negative caching feature.

**negative-caching** [**time**] *time* [**threshold**] *threshold-value*

**no negative-caching**

## Syntax Description

|   |  |
|---|--|
| <b>time</b> <i>time</i>                 | Length of time, in seconds, that the negative cache entry will remain in the directory database. This timer determines how long a resource is considered unreachable. The range is 0 to 3600 seconds. The default is 60 seconds. |
| <b>threshold</b> <i>threshold-value</i> | Number of locate searches to be rejected. When this threshold expires, the negative cache entry will be removed from the directory database. The range is 0 to 1000 searches. The default is 20 searches.                        |

## Defaults

Negative caching is disabled.  
 The default time is 60 seconds.  
 The default threshold is 20 locate searches.

## Command Modes

APPN control point configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.3    | This command was introduced. |

## Usage Guidelines

When negative caching is enabled, it is applied at the network node server only for locate search requests from its end node.

## Examples

The following example configures the negative caching feature to specify that requests for unreachable resources will be retained in the directory database for 30 seconds or until 10 locate search requests have been made:

```
negative-caching time 30 threshold 10
```

| Related Commands | Command                    | Description   |
|------------------|----------------------------|---|
|                  | <b>appn control-point</b>  | Specifies the fully qualified control point name for the node.  |
|                  | <b>locate-queuing</b>      | Enables the locate throttling feature on this control point and prevents multiple broadcast locate searches to the same destination LU. |
|                  | <b>show appn directory</b> | Displays negative cache entries and the remaining time and threshold-count values.  |
|                  | <b>show appn node</b>      | Displays information about the local APPN control point.  |

# node-row

Use the **node-row** APPN class of service configuration command to specify a node description or node row, and associated weights defined for this class of service. Use the **no** form of this command to delete a previous node row description.

**node-row** *index* **weight** *weight* **congestion** {**yes** | **no**} {**yes** | **no**} **route-additional-resistance** *min*  
*max*

**no node-row** *index*

| Syntax Description                                |  |   |
|---|--|---|
| <i>index</i>                                      |  | Specifies which row is being entered. The valid range is 1 to 8.  |
| <b>weight</b> <i>weight</i>                       |  | Weight assigned to a node, given the characteristics identified in the remainder of the row. The weight of row n must be less than the weight of row n + 1. The valid range is 0 to 255.  |
| <b>congestion</b>                                 |  | Minimum and maximum congestion tolerance for the node row.  |
| <b>yes</b> <b>yes</b>                             |  | Only yes. Only congested transmission groups match this row.  |
| <b>no</b> <b>yes</b>                              |  | Yes or no. Congestion does not affect class of service row.   |
| <b>no</b> <b>no</b>                               |  | Only no. Only noncongested transmission groups match this row. The default is no no.  |
| <b>route-additional-resistance</b> <i>min max</i> |  | Minimum and maximum additional resistance value for the row. The value is compared to the same parameter defined in the CP for each network node and exchanged on the topology database updates. The valid range for minimum and maximum is 0 to 255. The default range for minimum and maximum is 0 0. |

## Defaults

No default node row is specified.

No default weight is specified.

The default congestion tolerance is no no.

The default route additional resistance is 0 0.

## Command Modes

APPN class of service configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

You can define up to eight rows. Each row represents the characteristics of a node that meets the requirements for this class of service and defines a weight for the node that will be used in calculating the cost of a total route.

If the congestion maximum is set to “no,” the congestion minimum must also be set to “no.”

---

**Examples**

The following example defines an APPN class of service with one node row:

```
appn class-of-service #SECURE
node-row 1 weight 5 congestion no no route-additional-resistance 0 255
tg-row 1 weight 30 byte 0 255 time 0 255 capacity 0 255 delay 0 255 security 200 255
user1 0 255 user2 0 255 user3 0 255
complete
```

---

**Related Commands**

| Command                           | Description   |
|-----------------------------------|---|
| <b>appn class-of-service</b>      | Defines an APPN class of service that is not an IBM-supplied default. |
| <b>show appn class-of-service</b> | Displays the APPN classes of service defined to the local node.       |

# null-xid-poll

Use the **null-xid-poll** APPN port configuration command to specify that the null XID should be used to poll the remote node associated with this APPN port. Use the **no** form of the command to cancel the specification.

**null-xid-poll**

**no null-xid-poll**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** XID3 negotiation is used to poll remote devices.

---

**Command Modes** APPN port configuration

---

| Release | Modification                 |
|---------|------------------------------|
| 11.2    | This command was introduced. |

---



---

**Usage Guidelines** The **null-xid-poll** command permits PU 2.0 devices that connect in with XID0 to build a dynamic link station. It is no longer necessary to configure a link definition. When this command is used, the router expects its partner to reveal its identity first by responding with either XID3 or XID0.

This feature works in a mixed environment of PU 2.0 and PU 2.1 devices where the same APPN port is shared by both types of devices. By default, XID3 is used to poll the devices. When a PU 2.0 device responds with XID0, the link is created and established dynamically. PU 2.1 devices are not affected by this change, and go through the XID3 negotiation as usual.

Some care must be exercised when configuring **null-xid-poll**: If two Cisco APPN network node routers connect across ports configured with **null-xid-poll**, the APPN connection will fail because both routers expect the other to respond first using either XID0 or XID3. Similar behavior may occur when a port configured with **null-xid-poll** attempts communication with a front-end processor configured for XID polling. You only need to configure **null-xid-poll** when dealing with a PU 2.0 device that does not respond gracefully to the XID3 poll.

---

**Examples** The following example specifies that null XID should be used to poll the remote nodes associated with the APPN port FDDI0:

```
appn port FDDI0 fddi 0
null-xid-poll
complete
```

**Related Commands**

| <b>Command</b>   | <b>Description</b>   |
|------------------|--|
| <b>appn port</b> | Defines an APPN port and relates it to a previously defined interface. |

# owning-cp

Use the **owning-cp** APPN partner LU location configuration command to specify the name of the CP that owns the partner LU. Use the **no** form of this command to delete the definition.

**owning-cp** *netid.cpname*

**no owning-cp**

## Syntax Description

*netid.cpname*

Fully qualified network name. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:

- A–Z, a–z
- 0–9
- \$ # @

The first character of either string must not be a number.

## Defaults

No default name is assigned.

## Command Modes

APPN partner LU location configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

The *netid.cpname* argument must be unique in the network and must match the name specified as control point on the specific node.

## Examples

The following example sets the owning CP name:

```
appn partner-lu-location CISCO.LU000012
owning-cp CISCO.CP000001
complete
```

## Related Commands

| Command                         | Description  |
|---------------------------------|--|
| <b>appn partner-lu-location</b> | Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services. |
| <b>show appn directory</b>      | Displays negative cache entries and the remaining time and threshold-count values.   |

## port (APPN connection network)

Use the **port** APPN connection network configuration command to specify the ports that have visibility to the connection network. Use the **no port** form of this command to delete the definition.

**port** *portname*

**no port** *portname*

### Syntax Description

|                 |   |
|-----------------|---|
| <i>portname</i> | Type A name. A Type A character string contains 1 to 8 of the following characters: <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul> |
|-----------------|---|

### Defaults

No default port name is assigned.

### Command Modes

APPN connection network configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

Up to five ports can be specified by repeating the command. Port names must be previously defined by the **appn port** command.

### Examples

The following example specifies an APPN connection network with one port:

```
appn connection-network CISCO.CN1
port TR0
complete
```

### Related Commands

| Command                             | Description  |
|-------------------------------------|--|
| <b>appn connection-network</b>      | Specifies the fully qualified network name for the connection network. |
| <b>appn port</b>                    | Defines an APPN port and relates it to a previously defined interface. |
| <b>show appn connection-network</b> | Displays the APPN connection networks defined to the local node.       |

## port (APPN link station)

Use the **port** APPN link station configuration command to specify the port that can be used to access the link station. Use the **no port** form of this command to delete the definition.

**port** *portname*

**no port**

### Syntax Description

|                 |  |
|-----------------|--|
| <i>portname</i> | Type A name. (Required when defining a new link station; optional on subsequent changes to the link station.)<br>A Type A character contains 1 to 8 of the following characters: |
|                 | <ul style="list-style-type: none"> <li>• A–Z, a–z</li> <li>• 0–9</li> <li>• \$ # @</li> </ul>  |

### Defaults

No default port is specified.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

The *portname* argument must be a value defined in a previous **appn port** command. The **port** command is required to define an APPN link station.

### Examples

The following example defines the port:

```
appn link-station FDDILINK
port FDDIO
lan-dest-address 0200.0000.cfbf
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>appn port</b>              | Defines an APPN port and relates it to a previously defined interface.                    |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# ppp-dest-address

Use the **ppp-dest-address** APPN link station configuration command to specify the remote SAP of a node across a PPP interface. Use the **no** form of this command to return to the default.

**ppp-dest-address** *sap*

**no ppp-dest-address**

|                           |            |   |
|---------------------------|------------|---|
| <b>Syntax Description</b> | <i>sap</i> | Service access point of the remote node. The default is 04 hexadecimal. |
|---------------------------|------------|---|

|                 |                                    |
|-----------------|------------------------------------|
| <b>Defaults</b> | The default SAP is 04 hexadecimal. |
|-----------------|------------------------------------|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.1           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The command should be specified only if the APPN port used by the link station is a PPP port. |
|-------------------------|---|

|                         |                               |   |
|-------------------------|-------------------------------|---|
| <b>Related Commands</b> | <b>Command</b>                | <b>Description</b>  |
|                         | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                         | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## propagation-delay (APPN link station)

Use the **propagation-delay** APPN link station configuration command to specify the amount of inherent delay of the connection. Use the **no** form of this command to return to the default.

**propagation-delay** { **minimum** | **lan** | **telephone** | **packet-switched** | **satellite** | **maximum** }

**no propagation-delay**

### Syntax Description

|                        |  |
|------------------------|--|
| <b>minimum</b>         | No delay.                                    |
| <b>lan</b>             | Less than 480 microseconds delay.            |
| <b>telephone</b>       | Between 480 and 49152 microseconds delay.    |
| <b>packet-switched</b> | Between 49152 and 245760 microseconds delay. |
| <b>satellite</b>       | Greater than 245760 microseconds delay.      |
| <b>maximum</b>         | Maximum delay allowed.                       |

### Defaults

The value specified in the **appn port** command.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

The inherent delay is used in route selection by comparing this value to the value requested for a particular class of service. This value supersedes any value specified on the **appn port** command. Propagation delay is used by the node to determine the least cost route for APPN intermediate sessions.

### Examples

The following example specifies a delay of less than 480 microseconds:

```
appn link-station FRLINK12
port FR1
propagation-delay lan
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## propagation-delay (APPN port)

Use the **propagation-delay** APPN port configuration command to specify the propagation delay of the link. Use the **no** form of this command to return to the default.

**propagation-delay** { **minimum** | **lan** | **telephone** | **packet-switched** | **satellite** | **maximum** }

**no propagation-delay**

### Syntax Description

|                        |  |
|------------------------|--|
| <b>minimum</b>         | No delay.                                    |
| <b>lan</b>             | Less than 480 microseconds delay.            |
| <b>telephone</b>       | Between 480 and 49152 microseconds delay.    |
| <b>packet-switched</b> | Between 49152 and 245760 microseconds delay. |
| <b>satellite</b>       | Greater than 245760 microseconds delay.      |
| <b>maximum</b>         | Maximum delay allowed.                       |

### Defaults

The default is media dependent:

Ethernet—**lan**

FDDI—**lan**

Frame Relay—**packet-switched**

QLLC—**packet-switched**

RSRB—**packet-switched**

SDLC—**telephone**

Token Ring—**lan**

### Command Modes

APPN port configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This command applies to all link stations accessed through this port. Specifying propagation delay at the link station level overrides this command. The value of propagation delay is used by the node to determine the least cost route for APPN intermediate sessions.

### Examples

The following example specifies a delay of less than 480 microseconds:

```
appn port FR1 Serial1/1
propagation-delay lan
complete
```

## ■ propagation-delay (APPN port)

| Related Commands | Command               | Description  |
|------------------|-----------------------|--|
|                  | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                  | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# pu-type-20

Use the **pu-type-20** APPN link station configuration command to indicate that the downstream PU whose dependent LU request is propagated through the link is a PU type 2.0. Use the **no** form of this command or omit this command to indicate that the downstream PU is a type 2.1.

**pu-type-20**

**no pu-type-20**

## Syntax Description

This command has no arguments or keywords.

## Defaults

The downstream PU is defined as a PU type 2.1.

## Command Modes

APPN link station configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

This command is normally used in conjunction with the **dlur-dspu-name** link-station configuration command.

## Examples

The following example indicates that the downstream PU is a PU type 2.0:

```
appn link-station LINK0001
port TR0
lan-dest-address 1000.4521.9812
pu-type-20
dlur-dspu-name PU009812
complete
```

## Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>dlur-dspu-name</b>         | Specifies the name of the downstream PU connected by this link.                           |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# reserved-inbound

Use the **reserved-inbound** APPN port configuration command to specify the number of link stations (out of **max-link-stations**) to be reserved for inbound links (partner initiates). Use the **no** form of this command to return to the default.

**reserved-inbound** *number*

**no reserved-inbound**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Number in the range 0 to 255. The default is 0. |
|---------------------------|---------------|---|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | No link stations are reserved for inbound links. |
|-----------------|--|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The total of <b>reserved-inbound</b> plus <b>reserved-outbound</b> must be less than or equal to the maximum number of link station allowed on the port. This value is configured using the <b>max-link-stations</b> command. |
|-------------------------|---|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example sets the number of link stations reserved for inbound links to 50: |
|-----------------|--|

```
appn port TR0 tokenring 0
reserved-inbound 50
complete
```

|                         |                          |  |
|-------------------------|--------------------------|--|
| <b>Related Commands</b> | <b>Command</b>           | <b>Description</b>   |
|                         | <b>appn port</b>         | Defines an APPN port and relates it to a previously defined interface.   |
|                         | <b>max-link-stations</b> | Specifies the maximum number of active link stations allowed on this port.   |
|                         | <b>reserved-outbound</b> | Specifies the number of link stations (of max-link-stations) to be reserved for outbound link stations where this node initiates the connection. |
|                         | <b>show appn port</b>    | Displays information about the APPN ports active on the local node.  |

# reserved-outbound

Used the **reserved-outbound** APPN port configuration command to specify the number of link stations (of **max-link-stations**) to be reserved for outbound link stations where this node initiates the connection. Use the **no** form of this command to return to the default.

**reserved-outbound** *number*

**no reserved-outbound**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Number in the range 0 to 255. The default is 0. |
|---------------------------|---------------|---|

**Defaults** No link stations are reserved for outbound links.

**Command Modes** APPN port configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** The total of **reserved-inbound** plus **reserved-outbound** must be less than or equal to the maximum number of link station allowed on the port. This value is configured using the **max-link-stations** command.

**Examples** The following example sets the number of link stations reserved for outbound links to 50:

```
appn port TR1 tokenring 1
reserved-outbound 50
complete
```

| <b>Related Commands</b> | <b>Command</b>           | <b>Description</b>   |
|-------------------------|--------------------------|--|
|                         | <b>appn port</b>         | Defines an APPN port and relates it to a previously defined interface.   |
|                         | <b>max-link-stations</b> | Specifies the maximum number of active link stations allowed on this port.   |
|                         | <b>reserved-inbound</b>  | Specifies the number of link stations (out of max-link-stations) to be reserved for inbound links (partner initiates). |
|                         | <b>show appn port</b>    | Displays information about the APPN ports active on the local node.  |

## retry-limit (APPN link station)

Use the **retry-limit** APPN link station configuration command to specify the number of times a link station attempts reactivation after failure. Use the **no** form of this command to specify the default.

**retry-limit** { *retries* | **infinite** [*interval*] }

**no retry-limit**

| Syntax Description |   |
|--------------------|---|
| <i>retries</i>     | Number of reactivation attempts. The valid range is 0 to 255 (0 equals infinite retries). The default is 5.                                     |
| <b>infinite</b>    | Infinite retries.   |
| <i>interval</i>    | (Optional) Amount of time allowed between reactivation attempts (in seconds). The valid range is 0 to 32767 seconds. The default is 30 seconds. |

### Defaults

The default number of retries is 5.

The default amount of time is 30 seconds.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This value supersedes any value specified in the **appn port** command.

### Examples

The following example specifies 25 retries for APPN link station LINK12:

```
appn link-station LINK12
port FDDI1
lan-dest-address 4000.0211.4567
retry-limit 25
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## retry-limit (APPN port)

Use the **retry-limit** APPN port configuration command to specify how many times a line will attempt reactivation after failure. Use the **no** form of this command to delete the previous definition.

```
retry-limit { retries | infinite } [interval]
```

```
no retry-limit
```

| Syntax Description |  |   |
|--------------------|--|---|
| <i>retries</i>     |  | Number of reactivation attempts. The valid range is 0 to 255 (0 equals infinite retries). The default is 5. |
| <b>infinite</b>    |  | Infinite retries.   |
| <i>interval</i>    |  | (Optional) Amount of time allowed between reactivation attempts (in seconds). The default is 30 seconds.    |

| Defaults |   |
|----------|---|
|          | The default number of retries is 5.       |
|          | The default amount of time is 30 seconds. |

| Command Modes |                         |
|---------------|-------------------------|
|               | APPN port configuration |

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

| Usage Guidelines |  |
|------------------|--|
|                  | This command applies to all link stations accessed through this port. Specifying a retry limit at the link station level overrides this command. |

| Examples |   |
|----------|---|
|          | The following example specifies 25 retries: |

```
appn port ETHER0 ethernet 0
  retry-limit 25
complete
```

| Related Commands | Command               | Description  |
|------------------|-----------------------|--|
|                  | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                  | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

## role (APPN link station)

Use the **role** APPN link station configuration command to specify the link station role used in XID negotiations. Use the **no** form of this command to return to the default.

**role** { **negotiable** | **primary** | **secondary** }

**no role**

### Syntax Description

|                   |  |
|-------------------|--|
| <b>negotiable</b> | The link station can be the primary or secondary end of the link station connection. |
| <b>primary</b>    | The link station is the primary end of the link station connection.                  |
| <b>secondary</b>  | The link station is the secondary end of the link station connection.                |

### Defaults

The value specified in the **appn port** command.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This command overrides the value specified on the port definition.

### Examples

The following example sets the role to primary:

```
appn link-station LINK44
port ETHER1
lan-dest-address 0200.98ab.de23
role primary
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## role (APPN port)

Use the **role** APPN port configuration command to specify the link station role used in XID negotiations for all link stations defined through this port. Use the **no** form of this command to return to the default.

**role** { **negotiable** | **primary** | **secondary** }

**no role**

### Syntax Description

|                   |  |
|-------------------|--|
| <b>negotiable</b> | The link station can be the primary or secondary end of the link station connection. |
| <b>primary</b>    | The link station is the primary end of the link station connection.                  |
| <b>secondary</b>  | The link station is the secondary end of the link station connection.                |

### Defaults

The default role is **negotiable**.

### Command Modes

APPN port configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This command applies to all link stations accessed through this port. Specifying a role at the link station overrides this command.

### Examples

The following example sets the role to primary:

```
appn port FDDIO fddi 0
role primary
complete
```

### Related Commands

| Command               | Description  |
|-----------------------|--|
| <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
| <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# route-additional-resistance

Use the **route-additional-resistance** APPN control point configuration command to specify an arbitrary value for the local node. Use the **no** form of this command to return to the default.

**route-additional-resistance** *number*

**no route-additional-resistance**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Arbitrary value in the range of 0 to 255. The default is 128. |
|---------------------------|---------------|---|

|                 |                                      |
|-----------------|--------------------------------------|
| <b>Defaults</b> | The default resistance value is 128. |
|-----------------|--------------------------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | The route additional resistance value is included in topology updates and is used by network nodes to select a least-cost path associated with a particular class of service. You use this command to assign an arbitrary value and to indicate preference or nonpreference for particular nodes in route paths. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example specifies a route additional resistance value of 200: |
|-----------------|---|

```
appn control-point CISCO.ROUTER
route-additional-resistance 200
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>show appn node</b>     | Displays information about the local APPN control point.       |

# rsrb-virtual-station

Use the **rsrb-virtual-station** APPN port configuration command to configure APPN for remote source-route bridging. Use the **no** form of this command to delete the configuration.

**rsrb-virtual-station** *mac-address local-ring bridge-number target-ring*

**no rsrb-virtual-station**

| Syntax Description |                      |   |
|--------------------|----------------------|---|
|                    | <i>mac-address</i>   | Virtual MAC address on which APPN resides.  |
|                    | <i>local-ring</i>    | Virtual ring number on which the APPN station resides. The valid range is 1 to 255.                           |
|                    | <i>bridge-number</i> | Bridge number connecting the local virtual ring and the RSRB target virtual ring. The valid range is 1 to 15. |
|                    | <i>target-ring</i>   | Target ring through which the local ring bridges data. The valid range is 1 to 255.                           |

**Defaults** No defaults are defined.

**Command Modes** APPN port configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Examples** The following example defines an APPN port that uses RSRB as a transport protocol:

```
appn port rsrb
rsrb-virtual-station 1234.1234.1234 50 1 60
complete
```

| Related Commands | Command               | Description  |
|------------------|-----------------------|--|
|                  | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                  | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# safe-store-cycle

Use the **safe-store-cycle** APPN control point configuration command to specify the number of cache instances to be saved. Use the **no** form of this command to delete the previous definition.

**safe-store-cycle** *number*

**no safe-store-cycle**

|                           |               |  |
|---------------------------|---------------|--|
| <b>Syntax Description</b> | <i>number</i> | Number of cache instances to be saved. The valid range is 1 to 99. The default is 2. |
|---------------------------|---------------|--|

|                 |                   |
|-----------------|-------------------|
| <b>Defaults</b> | The default is 2. |
|-----------------|-------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | <p>The file naming convention used for the cache instances is</p> <pre>control-point-name.dnn</pre> <p>where <i>nn</i> is a number in the range from 00 to the cycle number specified. The files that will be generated in the example are:</p> <pre>APPN1.d00 APPN1.d01 APPN1.d02 APPN1.d03</pre> |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | <p>The following example specifies that three cache instances will be saved:</p> <pre>appn control-point CISCO.APPN1 safe-store-host ip-address 171.69.44.1 directory appnsafe safe-store-cycle 3 complete</pre> |
|-----------------|--|

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |

# safe-store-host

Use the **safe-store-host** APPN control point configuration command to specify the IP host address and the file path for safe store. Use the **no** form of this command to delete the previous definition.

**safe-store-host ip-address** *address* **directory** *path*

**no safe-store-host**

## Syntax Description

|                                  |                           |
|----------------------------------|---------------------------|
| <b>ip-address</b> <i>address</i> | Host IP address.          |
| <b>directory</b> <i>path</i>     | File path for safe store. |

## Defaults

No defaults are assigned.

## Command Modes

APPN control point configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

Some TFTP hosts might require you to create the file entries in advance. Refer to the **safe-store-cycle** command reference entry for the file naming convention.

## Examples

The following example specifies that the IP host address and the file path where the database will be stored:

```
appn control-point CISCO.APPN1
  safe-store-host ip-address 171.69.44.1 directory appnsafe
  safe-store-cycle 3
complete
```

## Related Commands

| Command                   | Description  |
|---------------------------|--|
| <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |

# safe-store-interval

Use the **safe-store-interval** APPN control point configuration command to specify how often the directory database is stored to permanent media. Use the **no** form of this command to delete the previous definition.

**safe-store-interval** *interval*

**no safe-store-interval**

|                           |                 |   |
|---------------------------|-----------------|---|
| <b>Syntax Description</b> | <i>interval</i> | Interval in minutes between storage of the directory database to permanent media. The valid range is 0 to 32767 minutes. The default is 20 minutes. |
|---------------------------|-----------------|---|

|                 |            |
|-----------------|------------|
| <b>Defaults</b> | 20 minutes |
|-----------------|------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | This command allows you to balance processor usage with potential performance savings. A longer interval reduces the processor cycles used to save data, but potentially reduces the validity of the data due to less frequent updates. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example specifies that the database will be stored to permanent media every 30 minutes: |
|-----------------|---|

```
appn control-point CISCO.APPN1
  safe-store-host ip-address 171.69.44.1 directory appnsafe
  safe-store-interval 30
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |

# sdlc-dest-address

Use the **sdlc-dest-address** APPN link station configuration command to specify the local address of the partner node for nonswitched SDLC. Use the **no** form of this command to return to the default.

**sdlc-dest-address** *address*

**no sdlc-dest-address** *address*

|                           |                |  |
|---------------------------|----------------|--|
| <b>Syntax Description</b> | <i>address</i> | 2-digit hexadecimal number in the range of 00 to FE. |
|---------------------------|----------------|--|

|                 |                                 |
|-----------------|---------------------------------|
| <b>Defaults</b> | No default address is assigned. |
|-----------------|---------------------------------|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | This command is optional if the interface type is switched SDLC. It is not allowed for other interface types. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example assigns address F1: |
|-----------------|---|

```
appn link-station LINK12
port SDLC1
sdlc-dest-address f1
complete
```

|                         |                               |   |
|-------------------------|-------------------------------|---|
| <b>Related Commands</b> | <b>Command</b>                | <b>Description</b>  |
|                         | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                         | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# sdlc-sec-addr

Use the **sdlc-sec-addr** command to configure APPN for SDLC. Use the **no** form of this command to delete the configuration.

**sdlc-sec-addr** *sdlc-address*

**no sdlc-sec-addr**

|                           |                     |   |
|---------------------------|---------------------|---|
| <b>Syntax Description</b> | <i>sdlc-address</i> | SDLC secondary address. The valid range is 00 to FE (hexadecimal). The default is 00. |
|---------------------------|---------------------|---|

|                 |                            |
|-----------------|----------------------------|
| <b>Defaults</b> | The default address is 00. |
|-----------------|----------------------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

**Examples** The following example defines a port with a local SDLC address of 2.

```
appn port serial 1
  sdlc-sec-addr 2
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

## security (APPN link station)

Use the **security** APPN link station configuration command to specify the security level of the connection. Use the **no** form of this command to delete the previous definition.

**security** *security-level*

**no security**

|                           |                       |   |
|---------------------------|-----------------------|---|
| <b>Syntax Description</b> | <i>security-level</i> | <p>One of the following keywords:</p> <ul style="list-style-type: none"> <li>• <b>nonsecure</b></li> <li>• <b>public-switched</b></li> <li>• <b>underground-cable</b></li> <li>• <b>secure-conduit</b></li> <li>• <b>guarded-conduit</b></li> <li>• <b>encrypted</b></li> <li>• <b>guarded-radiation.</b></li> </ul> <p>The default is the value specified in the <b>appn port</b> command.</p> |
|---------------------------|-----------------------|---|

**Defaults** The default value specified in the **appn port** command.

**Command Modes** APPN link station configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** The security level is used in route selection.

**Examples** The following example sets the security level to encrypted:

```
appn link-station LINK12
  security encrypted
complete
```

| <b>Related Commands</b> | <b>Command</b>                | <b>Description</b>  |
|-------------------------|-------------------------------|---|
|                         | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                         | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## security (APPN port)

Use the **security** APPN port configuration command to specify security level of the connection. Use the **no** form of this command to delete the previous definition.

**security** *security-level*

**no security**

|                           |                       |  |
|---------------------------|-----------------------|--|
| <b>Syntax Description</b> | <i>security-level</i> | <p>One of the following keywords:</p> <ul style="list-style-type: none"> <li>• <b>nonsecure</b></li> <li>• <b>public-switched</b></li> <li>• <b>underground-cable</b></li> <li>• <b>secure-conduit</b></li> <li>• <b>guarded-conduit</b></li> <li>• <b>encrypted</b></li> <li>• <b>guarded-radiation.</b></li> </ul> <p>The default is <b>nonsecure</b>.</p> |
|---------------------------|-----------------------|--|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The default security is <b>nonsecure</b> . |
|-----------------|--|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

| <b>Command History</b> | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.0</td> <td>This command was introduced.</td> </tr> </tbody> </table> | Release | Modification | 11.0 | This command was introduced. |
|------------------------|--|---------|--------------|------|------------------------------|
| Release                | Modification   |         |              |      |                              |
| 11.0                   | This command was introduced.   |         |              |      |                              |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | The command applies to all link stations accessed through this port. Specifying security at the link station level overrides this command. |
|-------------------------|--|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following command sets the security level to encrypted: |
|-----------------|---|

```
appn port TR0 tokenring 0
  security encrypted
complete
```

| <b>Related Commands</b> | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>appn port</b></td> <td>Defines an APPN port and relates it to a previously defined interface.</td> </tr> <tr> <td><b>show appn port</b></td> <td>Displays information about the APPN ports active on the local node.</td> </tr> </tbody> </table> | Command | Description | <b>appn port</b> | Defines an APPN port and relates it to a previously defined interface. | <b>show appn port</b> | Displays information about the APPN ports active on the local node. |
|-------------------------|--|---------|-------------|------------------|--|-----------------------|---|
| Command                 | Description  |         |             |                  |  |                       |   |
| <b>appn port</b>        | Defines an APPN port and relates it to a previously defined interface.   |         |             |                  |  |                       |   |
| <b>show appn port</b>   | Displays information about the APPN ports active on the local node.  |         |             |                  |  |                       |   |

# service-any

Use the **service-any** APPN port configuration command to specify that this port will create dynamic transmission groups for outbound or inbound links. Use the **no** form of this command to specify that the link station must be defined through configuration commands.

**service-any**

**no service-any**

**Syntax Description** This command has no arguments or keywords.

**Defaults** The default state is **service-any**.

**Command Modes** APPN port configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** Specifying **no service-any** serves as a security mechanism to control who may or may not connect to the local node.

**Examples** The following example deactivates service any:

```
appn port FDDI0 fddi0
no service-any
complete
```

| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|-------------------------|-----------------------|--|
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# serving-nn

Use the **serving-nn** APPN partner LU location configuration command to specify the name of the network node server servicing the partner LU. Use the **no** form of this command to return to the default.

**serving-nn** *netid.cpname*

**no serving-nn**

|                           |                     |   |
|---------------------------|---------------------|---|
| <b>Syntax Description</b> | <i>netid.cpname</i> | Fully qualified network name. A fully qualified name is a string of 1 to 8 characters, a period, and another string of 1 to 8 characters. The following characters are acceptable:<br>A–Z, a–z<br>0–9<br>\$ # @<br>The first character of either string must not be a number. The default is the CP name of the local network node. |
|---------------------------|---------------------|---|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The CP name of the local network node. |
|-----------------|--|

|                      |  |
|----------------------|--|
| <b>Command Modes</b> | APPN partner LU location configuration |
|----------------------|--|

| <b>Command History</b> | <table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.0</td> <td>This command was introduced.</td> </tr> </tbody> </table> | Release | Modification | 11.0 | This command was introduced. |
|------------------------|--|---------|--------------|------|------------------------------|
| Release                | Modification   |         |              |      |                              |
| 11.0                   | This command was introduced.   |         |              |      |                              |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The <b>serving-nn</b> may be specified as null if the LU name is specified as null. This specification indicates a wildcard definition for all LUs. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example specifies the name of the network node server for the partner LU CISCO.APPN1: |
|-----------------|---|

```
appn partner-lu-location CISCO.LU000012
  serving-nn CISCO.APPN1
complete
```

| <b>Related Commands</b>         | <table border="1"> <thead> <tr> <th>Command</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>appn partner-lu-location</b></td> <td>Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services.</td> </tr> <tr> <td><b>show appn directory</b></td> <td>Displays negative cache entries and the remaining time and threshold-count values.</td> </tr> </tbody> </table> | Command | Description | <b>appn partner-lu-location</b> | Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services. | <b>show appn directory</b> | Displays negative cache entries and the remaining time and threshold-count values. |
|---------------------------------|---|---------|-------------|---------------------------------|--|----------------------------|--|
| Command                         | Description   |         |             |                                 |  |                            |  |
| <b>appn partner-lu-location</b> | Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services.  |         |             |                                 |  |                            |  |
| <b>show appn directory</b>      | Displays negative cache entries and the remaining time and threshold-count values.  |         |             |                                 |  |                            |  |

# show appn class-of-service

Use the **show appn class-of-service** EXEC command to display the APPN classes of service defined to the local node.

**show appn class-of-service [brief | detail]**

| Syntax Description | brief  | (Optional) Short display of APPN classes of service. |
|--------------------|--------|--|
|                    | detail | (Optional) Long display of APPN classes of service.  |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is sample output from the **show appn class-of-service** command:

```
Router# show appn class-of-service

Number of class of service definitions      7
APPN Classes of Service
-----
  Name      Trans. Pri.  Node Rows  TG Rows
-----
1> #CONNECT Medium          8          8
2> CPSVCMG  Network       8          8
3> SNASVCMG Network       8          8
4> #INTER   High          8          8
5> #INTERSC High          8          8
6> #BATCH   Low           8          8
7> #BATCHSC Low           8          8
```

The following is sample output from the **show appn class-of-service detail** command. This example shows just one part of one table. There could be up to 8 node rows and 8 TGs and multiple tables. This shows, however, the correspondence between the configuration commands and **show** commands.

```
Router# show appn class-of-service detail

Number of class of service definitions      8
1> Class of service name                    #connect
  Transmission priority                     Medium
  Number of node rows                       8
  Number of TG rows                         8
1.1> Node row weight                       5
  Congestion min                            no
  Congestion max                            no
  Route additional resistance min           0
  Route additional resistance max           31
.
1.1>TG row weight                          30
```

## show appn class-of-service

```

Cost per connect time min          0
Cost per connect time max         0
Cost per byte min                 0
Cost per byte max                 0
Security min                      Nonsecure
Security max                      Maximum security
Propagation delay min             0 microseconds (minimum)
Propagation delay max             384 microseconds (local area network)
Effective capacity min            4 megabits per second
Effective capacity max            604 gigabits per second
User defined parameter 1 min      0
User defined parameter 1 max      255
User defined parameter 2 min      0
User defined parameter 2 max      255
User defined parameter 3 min      0
User defined parameter 3 max      255

```

Table 44 describes significant fields shown in the display.

**Table 44** show appn class-of-service detail Field Descriptions

| Field                           | Description   |
|---------------------------------|---|
| Class of service name           | Administratively assigned name for this COS.  |
| Transmission priority           | Relative priority this COS will receive when transmitting out of this node.   |
| Number of node rows             | Number of node rows associated with this COS.   |
| Node of TG rows                 | Number of TG rows associated with this COS.   |
| Node row weight                 | Weight assigned to this node given the characteristics identified in the remainder of this row.   |
| Congestion min                  | If set to "yes," this node row will be chosen only if the node is congested. If set to "no," this node row may be chosen if the node is congested. If the congestion maximum is set to "no," the congestion minimum must also be set to "no." |
| Congestion max                  | If set to "yes," this node row may be chosen if the node is congested. If set to "no," this node row will never be chosen for this COS.   |
| Route additional resistance min | Minimum route additional resistance for this node row.  |
| Route additional resistance max | Maximum route additional resistance for this node row.  |
| TG row weight                   | Weight associated with this TG given the characteristics identified in the remainder of this row.   |
| Cost per connect time min       | Minimum acceptable value for cost per connect time for this TG row.   |
| Cost per connect time max       | Maximum acceptable value for cost per connect time for this TG row.   |
| Cost per byte min               | Minimum acceptable value for cost per byte for this TG row.   |
| Cost per byte max               | Maximum acceptable value for cost per byte for this TG row.   |
| Security min                    | Minimum acceptable value for security for this TG row.  |
| Security max                    | Maximum acceptable value for security for this TG row.  |

**Table 44** *show appn class-of-service detail Field Descriptions (continued)*

| Field                        | Description   |
|------------------------------|---|
| Propagation delay min        | Minimum acceptable value for propagation delay for this TG row.   |
| Propagation delay max        | Maximum acceptable value for propagation delay for this TG row.   |
| Effective capacity min       | Minimum acceptable value for effective capacity for this TG row.  |
| Effective capacity max       | Maximum acceptable value for effective capacity for this TG row.  |
| User defined parameter 1 min | Minimum value for a network-unique TG characteristic—parameter 1. |
| User defined parameter 1 max | Maximum value for a network-unique TG characteristic—parameter 1. |
| User defined parameter 2 min | Minimum value for a network-unique TG characteristic—parameter 2. |
| User defined parameter 2 max | Maximum value for a network-unique TG characteristic—parameter 2. |
| User defined parameter 3 min | Minimum value for a network-unique TG characteristic—parameter 3. |
| User defined parameter 3 max | Maximum value for a network-unique TG characteristic—parameter 3. |

**Related Commands**

| Command                      | Description   |
|------------------------------|---|
| <b>appn class-of-service</b> | Defines an APPN class of service that is not an IBM-supplied default. |
| <b>class-of-service</b>      | Specifies the class of service that maps to a particular mode name.   |

# show appn connection-network

Use the **show appn connection-network** EXEC command to display the APPN connection networks defined to the local node.

**show appn connection-network [brief | detail]**

| Syntax Description | brief  | (Optional) Short display of APPN connection networks. |
|--------------------|--------|---|
|                    | detail | (Optional) Long display of APPN connection networks.  |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is sample output from the **show appn connection-network brief** command:

```
Router# show appn connection-network brief

Connection network definitions                2
  APPN Connection Networks
  Resource Name    Attached Ports    First Port Name
  -----
1> NETA.CN        2                TR0
                  ABCDEFGH
2> NETADDDD.WWWEEEE 1                TR0
```

The following is sample output from the **show appn connection-network detail** command:

```
Router# show appn connection-network detail

Connection network definitions                1

1>Connection network name                    NETA.CONNECT
  Effective capacity                        15974400 bits per second
  Cost per connect time                     0
  Cost per byte                             0
  Propagation delay                         384 microseconds (local area network)
  User defined parameter 1                  128
  User defined parameter 2                  128
  User defined parameter 3                  128
  Security                                  Nonsecure
  Attached ports                             1

1.1>Port name                               TR0
```

Table 45 describes significant fields shown in the display

**Table 45** *show appn connection-network detail Field Descriptions*

| Field                    | Description   |
|--------------------------|---|
| Connection network name  | Fully qualified name of the connection network.             |
| Effective capacity       | Bit rate for the connection network.                        |
| Cost per connect time    | Relative cost of this connection network's TG.              |
| Cost per byte            | Cost-per-byte of transmitting a byte over this TG.          |
| Propagation delay        | Inherent delay of the connection network                    |
| User defined parameter 1 | Value for a network-unique TG characteristic — parameter 1. |
| User defined parameter 2 | Value for a network-unique TG characteristic — parameter 2. |
| User defined parameter 3 | Value for a network-unique TG characteristic — parameter 3. |
| Security                 | Security level for this connection network.                 |
| Attached ports           | Number of ports associated with the connection network.     |
| Port Name                | Port supporting this connection network.                    |

#### Related Commands

| Command                        | Description  |
|--------------------------------|--|
| <b>appn connection-network</b> | Specifies the fully qualified network name for the connection network. |

# show appn directory

Use the **show appn directory** EXEC command to display negative cache entries and the remaining time and threshold-count values.

**show appn directory**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Examples** The following is sample output from the **show appn directory** command:

```
Router1# show appn directory

Total directory entries                4
  APPN Directory Entries
  Resource Name      Owning CP Name      NN Server      Entry Type
  -----
1> NETA.ROUTER1      NETA.ROUTER1      NETA.ROUTER1   Home
2> NETA.EN1          NETA.EN1          NETA.ROUTER1   Register
3> NETA.EN2          NETA.EN2          NETA.ROUTER2   NCache
4> NETA.EN3          NETA.EN3          NETA.ROUTER2   NCache
```

The following is sample output from the **show appn directory detail** command:

```
Router2# show appn directory detail

Total directory entries                4

1>LU name                NETA.ROUTER1
  Owning CP name          NETA.ROUTER1
  Network node CP name    NETA.ROUTER1
  LU entry type           Home
  Register Resource       No
2>LU name                NETA.EN1
  Owning CP name          NETA.EN1
  Network node CP name    NETA.ROUTER1
  LU entry type           Register
  Register Resource       No
3>LU name                NETA.EN2
  Owning CP name          NETA.EN2
  Network node CP name    NETA.ROUTER2
  LU entry type           NCache
  Register Resource       No
  NCache time Remaining   2
  NCache count Remaining  5
```

```

4>LU name                                NETA.EN3
   Owing CP name
   Network node CP name
   LU entry type                          NCache
   Register Resource                       No
   NCache time Remaining                   0
   NCache count Remaining                  10

```

In these examples, two negative cache entry type entries are found in the directory database table. Notice that the NETA.EN2 resource was entered as a cache entry previously, so its Owing CP Name and NN Server information are known. On the other hand, NETA.EN3 was not found on the APPN network during a previous locate search, so the corresponding information for that resource is empty.

---

**Related Commands**

| <b>Command</b>                       | <b>Description</b>   |
|--------------------------------------|--|
| <b>appn partner-lu-location</b>      | Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services. |
| <b>central-resource-registration</b> | Enables the central resource registration function.  |

# show appn dlur-lu

Use the **show appn dlur-lu** EXEC command to display all active SSCP dependent LUs known to DLUR.

**show appn dlur-lu** [*pu pu-name*] [**brief** | **detail**]

| Syntax Description       |  |  |
|--------------------------|--|--|
| <b>pu</b> <i>pu-name</i> |  | 8-character Type-A string of a specific PU.              |
| <b>brief</b>             |  | (Optional) Short display of the APPN directory database. |
| <b>detail</b>            |  | (Optional) Long display of the APPN directory database.  |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is sample output from the **show appn dlur-lu** command:

```
Router# show appn dlur-lu

APPN DLUR-LU:
  LU Name      PU Name      DLUS Name    PLU Name
  -----
1> SJDRLU11    BEAGLE       NETA.CPAC    NETA.TSO0005
```

The following is sample output from the **show appn dlur-lu detail** command:

```
Router# show appn dlur-lu detail

LU name                SJDRLU11
PU name                 BEAGLE
Dependent LU Server Name NETA.CPAC
LU location             Remote
NAU address             2
PLU name                NETA.TSO0005
```

Table 46 describes the fields in this output.

**Table 46** *show appn dlur-lu* Field Descriptions

| Field       | Description   |
|-------------|---|
| LU name     | Logical unit name of the active SSCP dependent LUs supported by DLUR.               |
| PU name     | Physical unit name of the active SSCP dependent LU.                                 |
| DLUS name   | Fully qualified name of the DLUS providing SSCP services for the SSCP dependent LU. |
| LU location | Always identifies the LUs as remote LUs.  |

**Table 46** *show appn dlur-lu Field Descriptions (continued)*

| Field       | Description  |
|-------------|--|
| NAU address | Network addressable unit of the LU.  |
| PLU name    | When the SSCP dependent LU has an active session, the name of the primary LU name will be displayed. |

**Related Commands**

| Command                                 | Description   |
|---|---|
| <b>backup-dlus (APPN control point)</b> | Specifies the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. |
| <b>dlur (appn)</b>                      | Specifies that the DLUR function is supported on this CP.   |
| <b>dlus (APPN control point)</b>        | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs.   |
| <b>show appn dlur-pu</b>                | Displays all active SSCP dependent PUs known to DLUR.   |
| <b>show appn dlus</b>                   | Displays all LUs known to DLUR.   |

# show appn dlur-pu

Use the **show appn dlur-pu** EXEC command to display all active SSCP dependent PUs known to DLUR.

**show appn dlur-pu** [**dlus** *dlus-name*] [**brief** | **detail**]

| Syntax Description           |   |
|------------------------------|---|
| <b>dlus</b> <i>dlus-name</i> | (Optional) 17-character Type-A string of a specific DLUS. |
| <b>brief</b>                 | (Optional) Short display of the APPN directory database.  |
| <b>detail</b>                | (Optional) Long display of the APPN directory database.   |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is sample output from the **show appn dlur-pu** command:

```
Router# show appn dlur-pu

APPN DLUR-PU:
  PU Name   Active DLUS   Defined DLUS   Backup DLUS
  -----
1> BEAGLE   NETA.CPAC
```

The following is sample output from the **show appn dlur-pu detail** command:

```
Router# show appn dlur-pu detail

PU name                               BEAGLE
Defined DLUS name
Backup DLUS name
Physical unit (PU) Node ID             05D00010
PU location                             Downstream
Active DLUS name                       NETA.CPAC
ANS support                             Continue
PCID                                    D6DB11281AF90044
Fully qualified CP name                 NETA.WONDER
```

Table 47 describes the fields in this output.

**Table 47** *show appn dlur-pu detail Field Descriptions*

| Field             | Description  |
|-------------------|--|
| PU name           | Physical unit name of active SSCP dependent PUs.   |
| Defined DLUS name | DLUS name specified with the <b>dlus</b> (APPN link station) configuration command.        |
| Backup DLUS name  | DLUS name specified with the <b>backup-dlus</b> (APPN link station) configuration command. |

**Table 47** *show appn dlur-pu detail Field Descriptions (continued)*

| Field                   | Description   |
|-------------------------|---|
| PU Node ID              | IDBLK and IDNUM of the PU.  |
| PU Location             | Always identifies the PU as downstream.   |
| Active DLUS name        | Fully qualified name of the DLUS providing SSCP services for the PU.  |
| ANS support             | Identifies whether DLUR will keep active LU-LU sessions (Continue) when the connection to the DLUS is lost or whether DLUR will tear down active LU-LU sessions (Stop). |
| PCID                    | Procedure correlation identifier used to distinguish encapsulated traffic associated with this PU.  |
| Fully qualified CP name | Fully qualified CP name of the CP which generated the PCID above.   |

**Related Commands**

| Command                                 | Description   |
|---|---|
| <b>backup-dlus (APPN control point)</b> | Specifies the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. |
| <b>dlur (appn)</b>                      | Specifies that the DLUR function is supported on this CP.   |
| <b>dlus (APPN control point)</b>        | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs.   |
| <b>show appn dlur-lu</b>                | Displays all active SSCP dependent LUs known to DLUR.   |
| <b>show appn dlus</b>                   | Displays all LUs known to DLUR.   |

# show appn dlus

Use the **show appn dlus** EXEC command to display all LUs known to DLUR.

**show appn dlus [brief | detail]**

| Syntax Description | brief  | (Optional) Short display of the APPN directory database. |
|--------------------|--------|--|
|                    | detail | (Optional) Long display of the APPN directory database.  |

| Command Modes | EXEC |
|---------------|------|
|---------------|------|

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is output from the **show appn dlus** command:

```
Router# show appn dlus

APPN DLUS:
  DLUS Name   State   # Active PUs
  -----
1> NETA.CPAC  ACTIVE           1
```

The following is sample output from the **show appn dlus detail** command:

```
Router# show appn dlus detail

Dependent LU Server Name           NETA.CPAC
Is this default DLUS?               Yes
Is this default backup DLUS?        No
Pipe State                           Active
Number of active PUs                 1
Pipe statistics
# of REQACTPU requests sent          1
# of REQACTPU responses received     1
# of ACTPU requests received         1
# of ACTPU responses sent            1
# of REQDACTPU requests sent         0
# of REQDACTPU responses received   0
# of DACTPU requests received        0
# of DACTPU responses sent           0
# of ACTLU requests received         1
# of ACTLU responses sent            1
# of DACTLU requests received        0
# of DACTLU responses sent           0
# of SSCP_PU MUs received            0
# of SSCP_PU MUs sent                0
# of SSCP_LU MUs received            4
# of SSCP_LU MUs sent                5
```

Table 48 describes the displays in this output

**Table 48** *show appn dlus detail Field Descriptions*

| Field                 | Description   |
|-----------------------|---|
| DLUS name             | Fully qualified DLUS name.  |
| default DLUS          | Identifies the DLUS as the node default DLUS.   |
| default backup DLUS   | Identifies the DLUS as the node backup default DLUS.  |
| Pipe State            | Identifies the state of the DLUS-DLUR connection.   |
| Number of active PUs  | Total number of active PUs.   |
| REQACTPU sent/rcvd    | Number of REQACTPU requests sent to the DLUS and the number of REQACTPU responses received from DLUS.       |
| ACTPU rcvd/sent       | Number of ACTPU responses sent to the DLUs and the number of ACTPU requests received from the DLUS.         |
| REQDACTPU rcvd/sent   | Number of REQDACTPU requests sent to the DLUS and the number of REQDACTPU responses received from the DLUS. |
| DACTPU sent/rcvd      | Number of DACTPU responses sent to the DLUS and the number of DACTPU requests received from the DLUS.       |
| ACTLU rcvd/sent       | Number of ACTLU responses sent to the DLUS and the number of ACTLU requests received from the DLUS.         |
| DACTLU rcvd/sent      | Number of DACTLU responses sent to the DLUS and the number of DACTLU requests received from the DLUS.       |
| SSCP PU MUs rcvd/sent | Number of SSCP PU MUs sent and received from the DLUS.  |
| SSCP LU MUs rcvd/sent | Number of SSCP LU MUs sent and received from the DLUS.  |

**Related Commands**

| Command                                 | Description   |
|---|---|
| <b>backup-dlus (APPN control point)</b> | Specifies the name of the default backup DLUS, which performs SSCP services for downstream PUs if the default DLUS is unable to provide the services. |
| <b>dlur (appn)</b>                      | Specifies that the DLUR function is supported on this CP.   |
| <b>dlus (APPN control point)</b>        | Specifies the name of the default DLUS that provides SSCP services to the downstream PUs.   |

# show appn intermediate-session

Use the **show appn intermediate-session EXEC** command to display information about the SNA sessions that are currently being routed through the local node.

**show appn intermediate-session** [*pcid pcid*] [*name lu-name*] [**brief** | **detail**]

| Syntax Description         |   |  |
|----------------------------|---|--|
| <b>pcid</b> <i>pcid</i>    | (Optional) Filter by procedure correlation identifier (PCID). PCID is a 16-byte hexadecimal number. |  |
| <b>name</b> <i>lu-name</i> | (Optional) Filter by fully qualified LU name.   |  |
| <b>brief</b>               | (Optional) Short display of APPN intermediate session information.                                  |  |
| <b>detail</b>              | (Optional) Long display of APPN intermediate session information.                                   |  |

**Command Modes** EXEC

| Command History | Release | Modification   |
|-----------------|---------|--|
|                 | 11.0    | This command was introduced.   |
|                 | 11.1    | These keywords and arguments were added: <ul style="list-style-type: none"> <li>• <b>pcid</b> <i>pcid</i></li> <li>• <b>name</b> <i>lu-name</i></li> </ul> |

## Examples

The following is sample output from the **show appn intermediate-session** command:

```
Router# show appn intermediate-session

Number of intermediate sessions          1
APPN Intermediate Sessions
  PCID (hex)      Primary LU Name      Secondary LU Name      Mode      COS
  -----
1> C6D328B0922EE4FF  NETA.MARGE          NETA.APU              #INTER    #INTER
```

The following is sample output from the **show appn intermediate-session detail** command:

```
Router# show appn intermediate-session detail

Number of intermediate sessions          2

1>Procedure correlator ID (PCID) X'SS3321E8934CF101'
Primary LU name NETA.LISA
Secondary LU name NETA.BART
Mode name #INTER
Class of service name #INTER
Primary side adjacent CP name           NETA.PATTY
Secondary side adjacent CP name         CISCO.MARGE
Primary side link name                   PATTY
```

```

Secondary side link name           MARGE
PCID generator CP name            NETA.PATTY

2>Procedure correlator ID (PCID) X'DD3321E8944CF101'
Primary LU Name NETA.LISA
Secondary LU Name NETA.BART
Mode name SNASVCMG
Class of service name SNASVCMG
Primary side adjacent CP name      NETA.PATTY
Secondary side adjacent CP name    CISCO.MARGE
Primary side link name             PATTY
Secondary side link name           MARGE
PCID generator CP name            NETA.PATTY

```

Table 49 describes the fields shown in this display

**Table 49** *show appn intermediate-session detail Field Descriptions*

| Field                           | Description  |
|---------------------------------|--|
| Procedure correlator ID (PCID)  | PCID for this session.   |
| Primary LU name                 | Primary LU name for this session.                              |
| Secondary LU name               | Secondary LU name for this session.                            |
| Mode name                       | Mode used by this session.                                     |
| Class of service name           | Class of service used by this session.                         |
| Primary side adjacent CP name   | Fully qualified name of the adjacent CP on the primary side.   |
| Secondary side adjacent CP name | Fully qualified name of the adjacent CP on the secondary side. |
| Primary side link name          | Link name used on the primary side.                            |
| Secondary side link name        | Link name used on the secondary side.                          |
| PCID generator CP name          | Fully qualified CP name that generated the PCID.               |
| Session interrupt switched      | Specifies is this session is processed at interrupt-level.     |

#### Related Commands

| Command                             | Description  |
|-------------------------------------|--|
| <b>show appn connection-network</b> | Displays the APPN connection networks defined to the local node. |

# show appn link-station

Use the **show appn link-station** EXEC command to display information about the APPN link stations active on or defined to the local node.

**show appn link-station** [**name** *link-station-name*] [**port** *port-name*] [**brief** | **detail**]

| Syntax Description | name <i>link-station-name</i> | (Optional) Filter by link station name.                                      |
|--------------------|-------------------------------|--|
|                    | port <i>port-name</i>         | (Optional) Filter by port name.  |
|                    | brief                         | (Optional) Short display of active APPN links. Brief is the default display. |
|                    | detail                        | (Optional) Long display of active APPN links with more information.          |

**Command Modes** EXEC

| Command History | Release | Modification  |
|-----------------|---------|---|
|                 | 11.0    | This command was introduced.  |
|                 | 11.1    | These keywords and arguments <b>name</b> <i>link-station-name</i> , <b>port</b> <i>port-name</i> were introduced. |

## Examples

The following is sample output from the **show appn link-station brief** command:

```
Router# show appn link-station brief

Number of active links 1
APPN Logical Links
  Link Name  State      Port Name  Adjacent CP Name  Node Type
  -----  -
1> ROSEBUD  Active     TOK0       NETA.APU          Learn
2> HOST     Inactive   FDDI0
3> DOWNSTR  Inactive   RSRB
4> CANE     Inactive   FDDI0          Learn
```

The following is sample output from the **show appn link-station detail** command:

```
Router# show appn link-station detail

Number of links          1

1>Link name              ROSEBUD
  Port name              TOK0
  Interface name         TokenRing0
  Destination DLC address (remote SAP) 1111.2222.3333 (04)
  Link state              Active
  Deactivating link      No
  Max send frame data (BTU) size 0
```

```

Adjacent node CP name          NETA.APU
Adjacent node type             Learn
CP-CP session support         Yes
Link station role              Negotiable
Line type                      Shared access transport facility
Transmission group number     0
Effective capacity             100000000 bits per second
Cost per connect time         0
Cost per byte                  0
Propagation delay              384 microseconds (local area network)
User defined parameter 1      128
User defined parameter 2      128
User defined parameter 3      128
Security                       Nonsecure
HPR supported                  Yes
HPR RTP support level         (CF|RTP|Base)
HPR local SAP                  0xC8
HPR remote SAP                 0xC8
HPR ERP used                   No
HPR ANR label                  0x8003
Queuing Type                   Default
Primary DLUS Name
Backup DLUS Name
Downstream PU Name
Retry link station             No

```

Table 50 describes significant fields shown in the display.

**Table 50** *show appn link-station Field Descriptions*

| Field                                | Description  |
|--------------------------------------|--|
| Link name                            | Name of the link station.                                  |
| Port name                            | Port this link station is using.                           |
| Interface name                       | Interface used by this link.                               |
| Destination DLC address (remote SAP) | Data Link Control address of the partner node and its SAP. |
| Link state                           | State of the link.   |
| Deactivating link                    | Indicates if the link is deactivating.                     |
| Max send frame data (BTU) size       | Maximum BTU size this link can support.                    |
| Adjacent node CP name                | Name of the partner node for the link station.             |
| Adjacent node type                   | Node type of the partner node of this link.                |
| CP-CP session support                | Specifies whether CP-CP sessions can be supported.         |
| Link station role                    | Specifies the role the link uses in XID negotiation.       |
| Line type                            | Specifies the line type.                                   |
| Transmission group number            | Transmission group assigned to this link.                  |
| Effective capacity                   | Bit rate of this link.                                     |
| Cost per connect time                | Relative cost of this link.                                |
| Cost per byte                        | Cost per byte of transmitting over this link.              |
| Propagation delay                    | Specifies the inherent delay of the link.                  |

**Table 50** *show appn link-station Field Descriptions (continued)*

| Field                    | Description   |
|--------------------------|---|
| User defined parameter 1 | Value for a network-unique transmission group characteristic—parameter 1.   |
| User defined parameter 2 | Value for a network-unique transmission group characteristic—parameter 2.   |
| User defined parameter 3 | Value for a network-unique transmission group characteristic—parameter 3.   |
| Security                 | Security level of the link.   |
| HPR supported            | Indicates whether or not HPR is supported over the link station.  |
| HPR RTP support level    | Specifies the level of HPR support:<br>CF—Control flows over RTP tower is supported.<br>RTP—RTP tower is supported.<br>Base—Only base HPR is supported. |
| HPR local SAP            | Value for the local SAP used by HPR traffic.  |
| HPR remote SAP           | Value for the remote SAP used by HPR traffic.   |
| HPR ERP used             | Indicates whether or not the link level error recovery protocol is used.  |
| HPR NCE label            | ANR string that represents the network connection end point   |
| Queuing Type             | Indicates if a special queuing algorithm has been configured for this link station. Can be default, priority, custom, or fair.                          |
| Primary DLUS Name        | If the DLUR feature is configured, this specifies the control point name of the corresponding DLUS.   |
| Backup DLUS Name         | If the DLUR feature is configured, this specifies the control point name of the corresponding backup DLUS.  |
| Downstream PU Name       | If this link is to a PU 2.0 type device, this field specifies the PU name of the remote node.   |
| Retry link station       | Indicates if the retry feature has been configured for this link and specifies the number of retries and the retry interval in seconds.                 |

**Related Commands**

| Command                  | Description                                   |
|--------------------------|---|
| <b>appn link-station</b> | Assigns the name of an adjacent link station. |

# show appn mode

Use the **show appn mode** EXEC command to display information about the APPN modes defined to the local node.

**show appn mode**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Examples** The following is sample output from the **show appn mode** command:

```
Router# show appn mode

Number of modes                8
  APPN Modes
  Name      Associated COS
  -----  -
1>          #CONNECT
2> #BATCH   #BATCH
3> #BATCHSC #BATCHSC
4> #INTER   #INTER
5> #INTERSC #INTERSC
6> CPSVCMG  CPSVCMG
7> SNASVCMG SNASVCMG
8> CPSVRMGR SNASVCMG
```

Table 51 describes significant fields shown in the display.

**Table 51** *show appn mode Field Descriptions*

| Field          | Description       |
|----------------|-------------------|
| Name           | Mode name.        |
| Associated COS | Class of service. |

| Related Commands | Command          | Description  |
|------------------|------------------|--|
|                  | <b>appn mode</b> | Specifies a new mode or changes an IBM-defined mode and identifies the class of service associated with the mode name. |

# show appn node

Use the **show appn node EXEC** command to display information about the local APPN control point.

**show appn node**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Examples** The following is sample output from the **show appn node** command:

```
Router# show appn node

Network name                NETA
Control point (CP) name    BARNEY
Node ID (for XID)          X'07700000'
Route additional resistance  128
Maximum directory cache entries 255
Current directory cache entries 0
Directory save interval    2
Maximum sessions per RTP connection 65535
hpr timers liveness (low/med/hi/net) 1/1/1/1
Maximum RTP retries (low/med/hi/net) 6/6/6/6
Path switch timer (low/med/hi/net) 480/240/120/60
Locate-queue Enabled       Yes
Total locate-q found count 2
Negative-caching Enabled   Yes
Total negative-cache match count 30
```

Table 52 describes significant fields shown in the display

**Table 52** *show appn node Field Descriptions*

| Field                           | Description   |
|---------------------------------|---|
| Network name                    | Network name for this node.   |
| Control point (CP) name         | Control point name for this node.   |
| Node ID (for XID)               | 8-digit hexadecimal node ID value for this node.                                |
| Route additional resistance     | Arbitrary value associated with the cost of sessions passing through this node. |
| Maximum directory cache entries | Maximum number of cached directory entries.                                     |
| Current directory cache entries | Current number of cached directory entries                                      |

**Table 52** *show appn node Field Descriptions (continued)*

| Field                               | Description   |
|-------------------------------------|---|
| Directory save interval             | Time (in minutes) between directory save stores.  |
| Maximum sessions per HPR connection | Indicates the value configured for <b>hpr max-sessions</b> .  |
| HPR timers liveness                 | Indicates the values configured for <b>hpr timers liveness</b> . The four values are for low-, medium-, high-, and network-priority packets.    |
| Maximum HPR retries                 | Indicates the values configured for <b>hpr retries</b> . The four values are for low-, medium-, high-, and network-priority packets.            |
| Path switch timer                   | Indicates the values configured for <b>hpr timers path-switch</b> . The four values are for low-, medium-, high-, and network-priority packets. |
| Locate-queue Enabled                | Indicates whether or not the locate queuing feature has been enabled.   |
| Negative-caching Enabled            | Indicates whether or not the directory negative caching feature has been enabled.   |

**Related Commands**

| Command                   | Description  |
|---------------------------|--|
| <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |

# show appn port

Use the **show appn port** EXEC command to display information about the APPN ports active on the local node.

**show appn port** [**port** *port-name*] [**brief** | **detail**]

| Syntax Description           |  |  |
|------------------------------|--|--|
| <b>port</b> <i>port-name</i> | (Optional) Filter by port name.                    |  |
| <b>brief</b>                 | (Optional) Short display of APPN port definitions. |  |
| <b>detail</b>                | (Optional) Long display of APPN port definitions.  |  |

**Command Modes** EXEC

| Command History | Release | Modification   |
|-----------------|---------|--|
|                 | 11.0    | This command was introduced.   |
|                 | 11.1    | The <b>port</b> keyword was introduced                                       |
|                 | 11.2    | The output display changed to incorporate information about the HPR feature. |

## Examples

The following is sample output from the **show appn port** command:

```
Router# show appn port
```

```
Number of ports                2
APPN Ports
  Name      State      SAP      HPR-SAP      Interface
  -----
1> TOK0     Active    x04      xC8           TokenRing0
2> TOK1     Active    x04      xC8           TokenRing1
```

The following is sample output from the **show appn port detail** command:

```
Number of ports                2

1>Port name                    TOK0
  Interface name                TokenRing0
  Port State                    Active
  SAP                           X'04'
  Link station role             Negotiable
  Limited resource              No
  Max frame send data (BTU) size 2000
  Maximum receive BTU size      2000
  Effective capacity            16000000 bits per second
  Cost per connect time         0
  Cost per byte                  0
  Propagation delay             384 microseconds (local area network)
  User defined parameter 1      128
  User defined parameter 2      128
  User defined parameter 3      128
  Security                      Nonsecure
```

```

Total available link stations          65535
Number reserved for inbound link stations  0
Number reserved for outbound link stations  0
HPR supported                          Yes
HPR SAP                                X'C8'
Allow dynamic link stations (service any)  Yes
Retry link stations                     No

```

Table 53 describes significant fields shown in the display.

**Table 53** *show appn port detail Field Descriptions*

| Field                                      | Description   |
|--|---|
| Port name                                  | Name of this port.  |
| Interface name                             | Interface used by this port.  |
| Port State                                 | Current state of this port.   |
| SAP  | Default service access point for links on this port.                                      |
| Link station role                          | Specifies the role link stations used in XID negotiation.                                 |
| Limited resource                           | Specifies if links on this port should be taken down when no sessions are using the link. |
| Max send frame data (BTU) size             | The largest size allowed for basic transmission units sent through this port.             |
| Maximum receive BTU size                   | The largest size allowed for basic transmission units received through this port.         |
| Effective capacity                         | Bit rate of this port.  |
| Cost per connect time                      | Relative cost of the links on this port.  |
| Cost per byte                              | Cost per byte of transmitting a byte over the links on this port.                         |
| Propagation delay                          | Specifies the inherent delay of the port.   |
| User defined parameter 1                   | Value for a network-unique transmission group characteristic—parameter 1.                 |
| User defined parameter 2                   | Value for a network-unique transmission group characteristic—parameter 2.                 |
| User defined parameter 3                   | Value for a network-unique transmission group characteristic—parameter 3.                 |
| Security                                   | Security level of this port.  |
| Total available link stations              | The maximum number of link stations supported for this port.                              |
| Number reserved for inbound link stations  | Of the total available link stations, the number reserved for inbound connections.        |
| Number reserved for outbound link stations | Of the total available link stations, the number reserved for outbound connections.       |
| HPR supported                              | Indicates whether or not HPR is supported over the port.                                  |
| HPR SAP                                    | Service access point for HPR frames on this port.   |

**Table 53** *show appn port detail Field Descriptions (continued)*

| <b>Field</b>                              | <b>Description</b>   |
|---|--|
| Allow dynamic link stations (service any) | Indicates if this port will accept incoming connections from remote nodes without requiring a link-station definition at the local node. |
| Retry link stations                       | Specifies the number of times and the time between retries that the node will retry links that have failed before giving up.             |

**Related Commands**

| <b>Command</b>   | <b>Description</b>   |
|------------------|--|
| <b>appn port</b> | Defines an APPN port and relates it to a previously defined interface. |

# show appn rtp

Use the **show appn rtp** EXEC command to display information about the RTP connections.

**show appn rtp [brief | detail]**

| Syntax Description | brief  | (Optional) Short display of APPN RTP connections. |
|--------------------|--------|---|
|                    | detail | (Optional) Long display of APPN RTP connections.  |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.2    | This command was introduced. |

## Examples

The following is sample output from the **show appn rtp** command:

```
Router# show appn rtp

TCID                Partner Node      COS
-----            -
0000000012345678  NETA.LISA         #BATCH
```

The following is sample output from the **show appn rtp detail** command:

```
Router# show appn rtp detail

Number of RTP connections                1
Local TCID                              X'8000000000EBF6E8'
Local CP name                            NETA.APPN2
Remote NCEID                             X'8280'
Remote TCID                              X'8000000000000000'
Remote CP name                            NETA.FRANS
Class of service name                    SNASVCMG
Liveness timer                           60 seconds
Short request timer                      1 milliseconds
Path switch timer                        60 seconds
Total bytes sent                          153
Total bytes received                      0
Minimum send rate                         0
Current send rate                         2208 Kilobits/second
Maximum send rate                         9830 Kilobits/second
Round trip delay time                     4000 microseconds
ANR string                               X'C60080008280FF00'
Route                                     NETA.APPN2      <-tg21->
                                           NETA.FRANS
```

Table 54 describes significant fields shown in the display.

**Table 54** *show appn rtp detail Field Descriptions*

| Field                 | Description  |
|-----------------------|--|
| Local TCID            | Connection ID that uniquely identifies this connection. It is a 16-digit hexadecimal number  |
| Local CP name         | Control point name of the local node.  |
| Remote NCEID          | ANR label that represents the network connection end point at the remote node.   |
| Remote TCID           | Unique connection ID that the remote node uses to identify this connection.  |
| Remote CP name        | Control point name of the remote node.   |
| Class of service name | Name of the class of service used for packets flowing over this connection.  |
| Liveness timer        | Value configured for HPR timers liveness.  |
| Short request timer   | Calculated value for the timer used to wait for acknowledgment of HPR status request packets.  |
| Path switch timer     | Value configured for HPR timers path switch.   |
| Total bytes sent      | Running count of the amount of data sent over this connection.   |
| Total bytes received  | Running count of the amount of data received over this connection.   |
| Minimum send rate     | Minimum send rate allowed for this connection.   |
| Current send rate     | Calculated value for the current optimal send rate for this connection.  |
| Maximum send rate     | Maximum send rate allowed for this connection.   |
| Round trip delay time | Measured round-trip delay for an HPR status request packet.  |
| ANR string            | HPR routing string put in the NHDR of each packet sent over this connection.   |
| Route                 | Control point name and transmissions group number representing each hop through intermediate nodes for the route taken by packets sent or received over this connection. |

#### Related Commands

| Command                       | Description  |
|-------------------------------|--|
| <b>hpr max-sessions</b>       | Specifies the maximum number of sessions allowed over an RTP connection.                                       |
| <b>hpr retries</b>            | Specifies the number of times to retry sending a packet before initiating a path switch of the RTP connection. |
| <b>hpr timers liveness</b>    | Specifies how many seconds to wait for a packet to be received before initiating a path switch.                |
| <b>hpr timers path-switch</b> | Specifies the amount of time allowed to attempt a path switch for an RTP connection.                           |

# show appn session

Use the **show appn session** EXEC command to display information about the SNA LU 6.2 sessions, such as CP-CP sessions, that originate from the local node.

**show appn session** [**pcid** *pcid*] [**name** *lu-name*] [**brief** | **detail**]

| Syntax Description         |  |
|----------------------------|--|
| <b>pcid</b> <i>pcid</i>    | (Optional) Filter by procedure correlator identifier (PCID). PCID is a 16-byte hexadecimal number. |
| <b>name</b> <i>lu-name</i> | (Optional) Filter by fully qualified LU name.  |
| <b>brief</b>               | (Optional) Short display of APPN session information.  |
| <b>detail</b>              | (Optional) Long display of APPN session information.   |

**Command Modes** EXEC

| Command History | Release | Modification   |
|-----------------|---------|--|
|                 | 11.0    | This command was introduced.   |
|                 | 11.1    | These keywords and arguments <b>pcid</b> <i>pcid</i> , <b>name</b> <i>lu-name</i> were introduced. |

## Examples

The following is sample output from the **show appn session** command:

```
Router# show appn session

Number of sessions                               4
  APPN Endpoint Sessions
  PCID (hex)      Local LU Name      Partner LU Name      Mode      COS
  -----
1> C6D328B0912EE4FF  NETA.BART      NETA.MARGE      CPSVCMG  CPSVCMG
2> F1DBABC818AB53AC  NETA.BART      NETA.APU        CPSVCMG  CPSVCMG
3> F37F3BE237DE7242  NETA.BART      NETA.MARGE      CPSVCMG  CPSVCMG
4> C21BFDC300ED68DB  NETA.BARNEY    NETA.LISA        #INTER   #INTER
```

The following is sample output from the **show appn session detail** command:

```
Router# show appn session detail

Number of sessions                               4

4>LU name                                         NETA.BARNEY
  Partner LU name                                NETA.LISA
  Mode name                                       #INTER
  Class of service name                          #INTER
  Link name                                       *OverHPR
  HPR RTP PCID                                   X'8877665544332211'
  Send maximum RU size                           1920
  Receive maximum RU size                        1920
  Send pacing window                             2
```

## show appn session

```

Receive pacing window          8
Pacing type                    Adaptive
Outbound destination address (DAF)
Outbound origin address (OAF)
OAF-DAF assignor indicator (ODAI)
FID5 Session ID                X'8123456712345678
Procedure correlator ID (PCID) X'C21BFDC300ED68DB'
PCID generator CP name         NETA.BARNEY
Session ID                     X'0000000000093B198'
Conversation group ID          133

```

Table 55 describes significant fields shown in the display.

**Table 55** show appn session detail Field Descriptions

| Field                              | Description  |
|------------------------------------|--|
| LU name                            | Fully qualified name of the local LU.  |
| Partner LU name                    | Fully qualified name of the partner LU.  |
| Mode name                          | Mode used by this session.   |
| Class of service name              | Class of service used by this session.   |
| Link name                          | Link this session traverses.   |
| HPR RTP PCID                       | Procedure correlator identifier.   |
| Send maximum RU size               | Maximum RU size that can be sent on this session.  |
| Receive maximum RU size            | Maximum RU size that can be received on this session.  |
| Send pacing window                 | Current send pacing window size.   |
| Receive pacing window              | Current receive pacing window size.  |
| Pacing type                        | Type of pacing used by this session.   |
| Outbound destination address (DAF) | Session routing destination address.   |
| Outbound origin address (OAF)      | Session routing origin address.  |
| OAF-DAF assignor indicator (ODAI)  | Defines which session partner chose the addresses (DAF and OAF) for a session. Together with the DAF and OAF values, the ODAI forms the local form session identifier (LFSID). The DAF and OAF values used in the transmission header (TH) in one direction are reversed in the other direction. |
| FID5 Session ID                    | If this session is activated using HPR instead of the OAF, DAF, ODAI session identifier, the session is identified by this 8-byte hexadecimal value.   |
| Procedure correlator ID (PCID)     | PCID used by this session.   |
| PCID generator CP name             | Fully qualified CP name which generated this PCID.   |
| Session ID                         | Local session ID.  |
| Conversation group ID              | Conversation group ID for this session.  |

# show appn topology

Use the **show appn topology** EXEC command to display the contents of the APPN topology database.

**show appn topology** [*name cp-name*] [*brief* | *detail*]

| Syntax Description         |  |
|----------------------------|--|
| <b>name</b> <i>cp-name</i> | (Optional) Filter by fully qualified CP name.          |
| <b>brief</b>               | (Optional) Short display of APPN topology information. |
| <b>detail</b>              | (Optional) Long display of APPN topology information.  |

**Command Modes** EXEC

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

## Examples

The following is sample output from the **show appn topology** command:

```
Number of network nodes                3
APPN Topology Entries
Resource Name      Type          TG#  Dest. Node      TG Type  TG Status
-----
1> NETA.BARNEY     Network Node
  1>                0  NETA.CN         Intermed Active
  2>                0  NETA.CN1        Intermed Active
  3>                21 NETA.R2CP0389   Intermed Active
  4>                21 NETA.BART        Intermed Active
```

The following is a sample output from the **show appn topology detail** command:

```
Router# show appn topology detail

Number of network nodes                6

1>Network node CP name                  NETA.MAGGIE
Node type                               Network Node
Route additional resistance              128
Congested?                              No
Quiescing?                              No
ISR depleted?                           No
Time left in topology                   15
Current FRSN                             29
Resource Sequence Number                 4
Last FRSN sent                           0
Last FRSN received                       0
Node HPR Level                           RTP
Number of TGs                             2

1.1>TG partner CP name                  NETA.BARNEY
Transmission group number               21
TG partner node type                     Real
```

## ■ show appn topology

```

Tg Type                Endpoint
TG Status              Active
Quiescing?            No
Topology               Network
Effective capacity     16 megabits per second
Cost per connect time  0
Cost per byte          0
Propagation delay      384 microseconds (local area network)
User defined parameter 1 128
User defined parameter 2 128
User defined parameter 3 128
Security               Nonsecure
Time left in topology  15
Current FRSN           29
Resource Sequence Number 4
HPR enabled            Yes
HPR RTP level          RTP

```

Table 56 describes significant fields shown in the display.

**Table 56** *show appn topology Field Descriptions*

| Field                       | Description  |
|-----------------------------|--|
| Network node CP name        | Fully qualified name of the resource.  |
| Node type                   | Resource type of this node.  |
| Route additional resistance | Arbitrary number associated with the cost of using this node.                    |
| Congested?                  | Specifies whether or not the node is capable of processing requests.             |
| Quiescing?                  | Specifies whether or not the node is stopping.                                   |
| ISR depleted?               | Specifies whether or not the node is capable processing additional ISR requests. |
| Number of TGs               | Number of transmission groups associated with the network node.                  |
| TG partner CP name          | Partner node's fully qualified name.   |
| Transmission group number   | Transmission group number.   |
| TG partner node type        | Resource type for the partner of this transmission group.                        |
| TG Type                     | Type of transmission group: intermediate or endpoint.                            |
| TG Status                   | Status of the transmission group.  |
| Quiescing?                  | Specifies whether or not the transmission group is in the process of stopping.   |
| Topology                    | Topology type: local or network.   |
| Effective capacity          | Bit rate of the transmission group.  |
| Cost per connect time       | Relative cost of the transmission group.   |
| Cost per byte               | Cost per byte of transmitting over the transmission group.                       |
| Propagation delay           | Specifies the inherent delay of the transmission group.                          |
| User defined parameter 1    | Value for a network-unique transmission group characteristic—parameter 1.        |

**Table 56** *show appn topology Field Descriptions (continued)*

| <b>Field</b>             | <b>Description</b>  |
|--------------------------|---|
| User defined parameter 2 | Value for a network-unique transmission group characteristic—parameter 2.   |
| User defined parameter 3 | Value for a network-unique transmission group characteristic—parameter 3.   |
| Security                 | Security level of the transmission group.   |
| Time left in topology    | The number of days that APPN will wait before removing this node from the topology database.  |
| Current FRSN             | The current flow-reduction sequence number for this resource. This value is used to reduce topology exchange between two NNs if they temporarily lose contact.  |
| Resource Sequence Number | The current resource sequence number for this resource. This number is used by APPN to prevent loops when exchanging topology information.  |
| HPR enabled              | Specifies if this node or transmission group support HPR.   |
| HPR RTP level            | Specifies the level of HPR support for this node or transmission group:<br>Base—HPR base support only.<br>RTP—Supports the HPR RTP feature tower.<br>CF—Supports the HPR control flows feature tower. |

# smds-dest-address

Use the **smds-dest-address** APPN link station configuration command to specify the SMDS address of the partner node. Use the **no** form of this command to return to the default.

**smds-dest-address** *smds-addr* [*sap*]

**no smds-dest-address**

## Syntax Description

|                  |  |
|------------------|--|
| <i>smds-addr</i> | 8-byte hexadecimal number in the form HD.DD.DD.HH.                   |
| <i>sap</i>       | 1-byte hexadecimal number in the range 04 to EC, and divisible by 4. |

## Defaults

No default *smds-addr* is specified.

The default SAP is 04 (hexadecimal).

## Command Modes

APPN link station configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.1    | This command was introduced. |

## Usage Guidelines

This command is required for interface types Token Ring, Ethernet, or FDDI. It is not allowed for other interface types.

## Examples

The following example sets the MAC address and SAP for a link to a partner node:

```
appn link-station LINK0001
port ETHER1
smds-dest-address 11.22.33.44 08
complete
```

## Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>fr-dest-address</b>        | Specifies the address of the partner node for Frame Relay links.                          |
| <b>sdlc-dest-address</b>      | Specifies the local address of the partner node for nonswitched SDLC.                     |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |
| <b>smds address</b>           | Specifies the SMDS individual address for a particular interface.                         |

# tg-number

Use the **tg-number** APPN link station configuration command to specify the transmission group number for the connection. Use the **no** form of this command to delete the previous definition.

**tg-number** *number*

**no tg-number**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Number in the range 0 to 255. The default is 0. |
|---------------------------|---------------|---|

|                 |                                 |
|-----------------|---------------------------------|
| <b>Defaults</b> | Transmission group number is 0. |
|-----------------|---------------------------------|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | If zero, the transmission group number is negotiable. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example sets the transmission group number to 10: |
|-----------------|---|

```
appn link-station LINK4
port ETHER1
lan-dest-address 0200.6f8e.1a3b
tg-number 10
complete
```

|                         |                               |   |
|-------------------------|-------------------------------|---|
| <b>Related Commands</b> | <b>Command</b>                | <b>Description</b>  |
|                         | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                         | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## tg-row

Use the **tg-row** APPN class of service configuration command to specify a transmission group description, or transmission group row, and associated weight for the row. Use the **no** form of this command to delete the previous definition.

```
tg-row index weight weight byte min max time min max capacity min max delay min max security
min max user1 min max user2 min max user3 min max
```

```
no tg-row index
```

| Syntax                         | Description   |
|--------------------------------|---|
| <b>index</b> <i>index</i>      | Specifies which row is being entered. The valid range is 1 to 8.  |
| <b>weight</b> <i>weight</i>    | Weight assigned to a transmission group, given the characteristics defined in the remainder of the row.                                       |
| <b>byte</b> <i>min max</i>     | Minimum and maximum cost-per-byte values, compared with the <b>cost-per-byte</b> command on the port or link station command.                 |
| <b>time</b> <i>min max</i>     | Minimum and maximum cost-per-connect-time values, compared with the <b>cost-per-connect-time</b> command on the port or link station command. |
| <b>capacity</b> <i>min max</i> | Minimum and maximum capacity values, compared with the <b>effective-capacity</b> command on the port or link station command.                 |
| <b>delay</b> <i>min max</i>    | Two values compared with the <b>propagation-delay</b> command.  |
| <b>security</b> <i>min max</i> | Value compared with the security command. The minimum and maximum are specified with one the defined values, in ascending order:              |
| <b>user1</b> <i>min max</i>    | Number in the range 1 to 255.   |
| <b>user2</b> <i>min max</i>    | Number in the range 1 to 255.   |
| <b>user3</b> <i>min max</i>    | Number in the range 1 to 255.   |

**Defaults** There is no default provided. A minimum of one transmission group row must be provided or the configuration will fail.

**Command Modes** APPN class of service configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines**

The characteristics of transmission groups in the topology database are compared to the characteristics in each row. A weight is assigned which determines a low-cost route for a session. You can define from one to eight transmission group rows.

**Examples**

The following example defines an APPN class of service with one transmission group row:

```
appn class-of-service #SECURE
node-row 1 weight 5 congestion no no route-additional-resistance 0 255
tg-row 1 weight 30 byte 0 255 time 0 255 capacity 0 255 delay 0 255 security 200 255
user1 0 255 user2 0 255 user3 0 255
complete
```

**Related Commands**

| Command                           | Description   |
|-----------------------------------|---|
| <b>appn class-of-service</b>      | Defines an APPN class of service that is not an IBM-supplied default. |
| <b>show appn class-of-service</b> | Displays the APPN classes of service defined to the local node.       |

# transmission-priority

Use the **transmission-priority** APPN class of service configuration command to specify the transmission priority for the class of service. Use the **no** form of this command to delete the previous definition.

**transmission priority** *priority*

**no transmission priority**

## Syntax Description

*priority* One of the following keywords:

- **network**
- **high**
- **medium**
- **low**

## Defaults

The default priority is **medium**.

## Command Modes

APPN class of service configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

The value **network** is reserved for control traffic and cannot be specified for LU-LU sessions. High, medium, and low reflect the priority that traffic for an individual application should receive when congestion begins to build and queues form.

## Examples

The following example defines an APPN class of service with a transmission priority of high:

```
appn class-of-service #SECURE
  transmission-priority high
  node-row 1 weight 5 congestion no no route-additional-resistance 0 255
  tg-row 1 weight 30 byte 0 255 time 0 255 capacity 0 255 delay 0 255 security 200 255
  user1 0 255 user2 0 255 user3 0 255
complete
```

## Related Commands

| Command                           | Description   |
|-----------------------------------|---|
| <b>appn class-of-service</b>      | Defines an APPN class of service that is not an IBM-supplied default. |
| <b>show appn class-of-service</b> | Displays the APPN classes of service defined to the local node.       |

## user-defined-1 (APPN link station)

Use the **user-defined-1** APPN link station configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-1** *value*

**no user-defined-1**

### Syntax Description

|              |  |
|--------------|--|
| <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is the value specified in the <b>appn port</b> command. |
|--------------|--|

### Defaults

The value specified in the **appn port** command.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This command can be used to specify a user defined characteristic of this link. The value of a network unique transmission group characteristic is used in route selection.

### Examples

The following example defines an APPN link station with a **user-defined-1** value of 200:

```
appn link-station LINK17
port TOKEN1
lan-dest-address 1000.4455.abcd
user-defined-1 200
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## user-defined-1 (APPN port)

Use the **user-defined-1** APPN port configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-1** *value*

**no user-defined-1**

|                           |              |  |
|---------------------------|--------------|--|
| <b>Syntax Description</b> | <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is 128. |
|---------------------------|--------------|--|

|                 |                     |
|-----------------|---------------------|
| <b>Defaults</b> | The default is 128. |
|-----------------|---------------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command is specified for defined transmission groups (with the <b>appn link-station</b> command) if the command has not been specified at that level. This command also specifies the value for dynamically created transmission groups. The cost is used in route selection for a particular class of service. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example defines a port with a <b>user-defined-1</b> value of 50: |
|-----------------|--|

```
appn port ETHER1
  user-defined-1 50
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

## user-defined-2 (APPN link station)

Use the **user-defined-2** APPN link station configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-2** *value*

**no user-defined-2**

|                           |              |  |
|---------------------------|--------------|--|
| <b>Syntax Description</b> | <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is the value specified in the <b>appn port</b> command. |
|---------------------------|--------------|--|

|                 |  |
|-----------------|--|
| <b>Defaults</b> | The value specified in the <b>appn port</b> command. |
|-----------------|--|

|                      |                                 |
|----------------------|---------------------------------|
| <b>Command Modes</b> | APPN link station configuration |
|----------------------|---------------------------------|

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | This command can be used to specify a user defined characteristic of this link. The value of a network unique transmission group characteristic is used in route selection. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example defines an APPN link station with a <b>user-defined-2</b> value of 200: |
|-----------------|---|

```
appn link-station LINK17
port TOKEN1
lan-dest-address 1000.4455.abcd
user-defined-2 200
complete
```

| <b>Related Commands</b>       | <b>Command</b>  | <b>Description</b>                            |
|-------------------------------|---|---|
|                               | <b>appn link-station</b>  | Assigns the name of an adjacent link station. |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |   |

## user-defined-2 (APPN port)

Use the **user-defined-2** APPN port configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-2** *value*

**no user-defined-2**

|                           |              |  |
|---------------------------|--------------|--|
| <b>Syntax Description</b> | <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is 128. |
|---------------------------|--------------|--|

|                 |                     |
|-----------------|---------------------|
| <b>Defaults</b> | The default is 128. |
|-----------------|---------------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command is specified for defined transmission groups (with the <b>appn link-station</b> command) if the command has not been specified at that level. This command also specifies the value for dynamically created transmission groups. The cost is used in route selection for a particular class of service. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example defines a port with a <b>user-defined-2</b> value of 50: |
|-----------------|--|

```
appn port ETHER1
  user-defined-2 50
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

## user-defined-3 (APPN link station)

Use the **user-defined-3** APPN link station configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-3** *value*

**no user-defined-3**

### Syntax Description

|              |  |
|--------------|--|
| <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is the value specified in the <b>appn port</b> command. |
|--------------|--|

### Defaults

The value specified in the **appn port** command.

### Command Modes

APPN link station configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

This command can be used to specify a user defined characteristic of this link. The value of a network unique transmission group characteristic is used in route selection.

### Examples

The following example defines an APPN link station with a **user-defined-3** value of 200:

```
appn link-station LINK17
port TOKEN1
lan-dest-address 1000.4455.abcd
user-defined-3 200
complete
```

### Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## user-defined-3 (APPN port)

Use the **user-defined-3** APPN port configuration command to specify the relative value for a network-unique transmission group characteristic. Use the **no** form of this command to return to the default.

**user-defined-3** *value*

**no user-defined-3**

|                           |              |  |
|---------------------------|--------------|--|
| <b>Syntax Description</b> | <i>value</i> | Number in the range 0 to 255 used to specify the relative value. The default is 128. |
|---------------------------|--------------|--|

|                 |                     |
|-----------------|---------------------|
| <b>Defaults</b> | The default is 128. |
|-----------------|---------------------|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | APPN port configuration |
|----------------------|-------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |  |
|-------------------------|--|
| <b>Usage Guidelines</b> | This command is specified for defined transmission groups (with the <b>appn link-station</b> command) if the command has not been specified at that level. This command also specifies the value for dynamically created transmission groups. The cost is used in route selection for a particular class of service. |
|-------------------------|--|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example defines a port with a <b>user-defined-3</b> value of 50: |
|-----------------|--|

```
appn port ETHER1
  user-defined-3 50
complete
```

|                         |                       |  |
|-------------------------|-----------------------|--|
| <b>Related Commands</b> | <b>Command</b>        | <b>Description</b>   |
|                         | <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
|                         | <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# vdlc

Use the **vdlc** APPN port configuration command to identify which ring group the APPN VDLC port uses and, optionally, which virtual MAC address is used as the local MAC address identifying this APPN port. Use the **no** form of this command to delete the configuration.

```
vdlc ring-group [vmac vdlc-mac-address]
```

```
no vdlc ring-group [vmac vdlc-mac-address]
```

## Syntax Description

|                                     |   |
|-------------------------------------|---|
| <i>ring-group</i>                   | Ring group number matching the number you specified with the <b>source-bridge ring-group</b> command. The valid range is 1 to 4095. |
| <b>vmac</b> <i>vdlc-mac-address</i> | (Optional) Virtual MAC address used as the local MAC address identifying this APPN port.  |

## Defaults

No defaults are defined.

## Command Modes

APPN port configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.2    | This command was introduced. |

## Usage Guidelines

Use the **appn port vdlc** command to define a VDLC port before using the **vdlc** command.

The virtual MAC address must be defined in either the **source-bridge ring-group** command or in the **vdlc** command. If a virtual MAC address is defined in the **source-bridge ring-group** command, providing a virtual MAC address in the **vdlc** command is optional.

To avoid an address conflict on the virtual MAC address, use a locally-administered address in the form 4000.xxxx.xxxx.

## Examples

The following example defines an APPN port that uses VDLC. The **vdlc** subcommand specifies both the ring group (100) and the virtual MAC address (4000.3745.0000) to be used as the local MAC address identifying this port.

```
appn port VDLCPORT vdlc
vdlc 100 vmac 4000.3745.0000
complete
```

The following example defines an APPN port that uses VDLC. The MAC address to be used as the local MAC address identifying this virtual port is the MAC address specified in the **source-bridge ring-group** command. The **vdlc** subcommand only specifies the ring group.

```

source-bridge ring-group 100 4000.3745.0000
dlsw local-peer peer-id 172.18.3.111
dlsw remote-peer 0 tcp 172.18.3.125
!
interface ethernet 0
 ip address 172.18.3.111 255.255.255.0
 loopback
 media-type 10BaseT
!
interface TokenRing 0
 no ip address
 ring-speed 16
!
appn control-point NETA.BART
 complete
!
appn port VDLC vdlc
 vdlc 100
 complete
!
appn port TR0 TokenRing 0
 complete

```

**Related Commands**

| Command               | Description  |
|-----------------------|--|
| <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
| <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# verify-adjacent-node-type

Use the **verify-adjacent-node-type** APPN link station configuration command to specify that the adjacent node type must be verified as a requirement of link activation. Use the **no** form of this command to return to the default.

```
verify-adjacent-node-type { learn | len | nn }
```

```
no verify-adjacent-node-type
```

## Syntax Description

|              |  |
|--------------|--|
| <b>learn</b> | Any adjacent node type is accepted.      |
| <b>len</b>   | Only LEN adjacent node type is accepted. |
| <b>nn</b>    | Only NN adjacent node type is accepted.  |

## Defaults

The default node type is **learn**.

## Command Modes

APPN link station configuration

## Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

## Usage Guidelines

If the adjacent node type is LEN, the **cp-cp-sessions-supported** command must specify **no**.

If the adjacent node type is LEN, the **adjacent-cp-name** must be specified.

There is no verification for type EN.

## Examples

The following example specifies that any adjacent node type is accepted:

```
appn link-station NN4
port ETHER1
lan-dest-address 0200.5672.3212
verify-adjacent-node-type nn
complete
```

## Related Commands

| Command                       | Description   |
|-------------------------------|---|
| <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
| <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

# wildcard

Use the **wildcard** APPN partner LU location configuration command to specify this entry as a “wildcard.” Use the **no** form of this command to return to the default of no “wildcard”.

**wildcard**

**no wildcard**

---

**Syntax Description** This command has no arguments or keywords.

---

**Defaults** The default is **no wildcard**.

---

**Command Modes** APPN partner LU location configuration

---

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

---



---

**Usage Guidelines** A wildcard entry serves any LU whose name matches the configured name up to the length of the configured name. Without an LU name and wildcard specified, the entry services all LUs.

---

**Examples** The following example defines a wildcard that represents any LU that starts with LU2, such as LU21, LU221, LU234, and so on:

```
appn partner-lu-location LU2
  owning-cp CISCO.CP2
  wildcard
complete
```

---

| Related Commands | Command                         | Description  |
|------------------|---------------------------------|--|
|                  | <b>appn partner-lu-location</b> | Specifies an LU that would be the destination LU for an LU-LU session request from an LU using this node for network services. |
|                  | <b>show appn directory</b>      | Displays negative cache entries and the remaining time and threshold-count values.   |

---

# x25-dest-address

Use the **x25-dest-address** APPN link station configuration command to specify the local address of the partner node for QLLC. Use the **no** form of this command to delete the specification.

```
x25-dest-address [pvc | svc] address
```

```
no x25-dest-address
```

| Syntax Description |   |
|--------------------|---|
| <b>pvc</b>         | (Optional) Uses X.25 permanent virtual circuit. |
| <b>svc</b>         | (Optional) Uses X.25 switched virtual circuit.  |
| <i>address</i>     | X.25 destination link station address.          |

**Defaults** No default address is specified.

**Command Modes** APPN link station configuration

| Command History | Release | Modification                 |
|-----------------|---------|------------------------------|
|                 | 11.0    | This command was introduced. |

**Usage Guidelines** The *address* argument must be a valid X.121 address. This address must match that assigned by the X.25 network service provider.

**Examples** The following example configures the X.25 destination address:

```
appn link-station QLLC
port QLLC1
x25-dest-address 170090
complete
```

| Related Commands | Command                       | Description   |
|------------------|-------------------------------|---|
|                  | <b>appn link-station</b>      | Assigns the name of an adjacent link station.   |
|                  | <b>show appn link-station</b> | Displays information about the APPN link stations active on or defined to the local node. |

## x25-subaddress

Use the **x25-subaddress** APPN port configuration command to configure APPN over QLLC. Use the **no** form of this command to delete the configuration.

**x25-subaddress** [**pvc** | **svc**] *address*

**no x25-subaddress**

### Syntax Description

|                |   |
|----------------|---|
| <b>pvc</b>     | (Optional) Uses X.25 permanent virtual circuit. |
| <b>svc</b>     | (Optional) Uses X.25 switched virtual circuit.  |
| <i>address</i> | X.25 subaddress from which data is received.    |

### Defaults

No default address is assigned.

### Command Modes

APPN port configuration

### Command History

| Release | Modification                 |
|---------|------------------------------|
| 11.0    | This command was introduced. |

### Usage Guidelines

The *address* argument must be a valid X.121 address. This address must match that assigned by the X.25 network service provider.

### Examples

The following example configures the X.25 subaddress from which data is received:

```
appn port QLLC1 Serial0/1
x25-subaddress svc 0001121
complete
```

### Related Commands

| Command               | Description  |
|-----------------------|--|
| <b>appn port</b>      | Defines an APPN port and relates it to a previously defined interface. |
| <b>show appn port</b> | Displays information about the APPN ports active on the local node.    |

# xid-block-number

Use the **xid-block-number** APPN control point configuration command to specify the first three digits of the node identifier for the local node. Use the **no** form of this command to return to the default.

**xid-block-number** *number*

**no xid-block-number**

|                           |               |   |
|---------------------------|---------------|---|
| <b>Syntax Description</b> | <i>number</i> | Three-digit hexadecimal number in the range 000 to FFF. The default is 077. |
|---------------------------|---------------|---|

**Defaults** The default is 077 (hexadecimal).

**Command Modes** APPN control point configuration

| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|------------------------|----------------|------------------------------|
|                        | 11.0           | This command was introduced. |

**Usage Guidelines** A unique ID is required for links to older versions of VTAM.

**Examples** The following example specifies XID block number 456:

```
appn control-point CISCO.ROUTER
xid-block-number 456
complete
```

| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|-------------------------|---------------------------|--|
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>show appn node</b>     | Displays information about the local APPN control point.       |

# xid-id-number

Use the **xid-id-number** APPN control point configuration command to specify the last five digits of the node ID for the local node. Use the **no** form of this command to delete the previous definition.

**xid-id-number** *number*

**no xid-id-number**

|                           |               |  |
|---------------------------|---------------|--|
| <b>Syntax Description</b> | <i>number</i> | Five-digit hexadecimal number in the range 00000 to FFFFF. |
|---------------------------|---------------|--|

|                 |                                     |
|-----------------|-------------------------------------|
| <b>Defaults</b> | The default is 00000 (hexadecimal). |
|-----------------|-------------------------------------|

|                      |                                  |
|----------------------|----------------------------------|
| <b>Command Modes</b> | APPN control point configuration |
|----------------------|----------------------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 11.0           | This command was introduced. |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The XID ID and block numbers are included in XID exchanges and alert information, and are required for communicating with older versions of VTAM. |
|-------------------------|---|

|                 |  |
|-----------------|--|
| <b>Examples</b> | The following example specifies XID ID number 0cab7: |
|-----------------|--|

```
appn control-point CISCO.ROUTER
xid-id-number 0cab7
complete
```

|                         |                           |  |
|-------------------------|---------------------------|--|
| <b>Related Commands</b> | <b>Command</b>            | <b>Description</b>   |
|                         | <b>appn control-point</b> | Specifies the fully qualified control point name for the node. |
|                         | <b>show appn node</b>     | Displays information about the local APPN control point.       |