



Cisco IOS IBM Networking Commands

adapter

To configure internal adapters, use the **adapter** command in internal LAN interface configuration submode. To remove an internal adapter, use the **no** form of this command.

adapter *adapter-number* [*mac-address*]

no adapter *adapter-number* [*mac-address*]

Syntax Description

<i>adapter-number</i>	Number in the range from 0 to 31 that uniquely identifies the internal adapter (relative adapter number) for all internal LANs of the same type on the Cisco Mainframe Channel Connection (CMCC) adapter. When Cisco Systems Network Architecture (CSNA), this value corresponds to the adaptor number (ADAPNO) parameter defined in the Virtual Telecommunications Access Method (VTAM) Extended Communications Adapter (XCA) Major Node.
<i>mac-address</i>	(Optional) MAC address for this internal adapter. This is a hexadecimal value in the form <i>xxxx.xxxx.xxxx</i> .

Defaults

No default behavior or values

Command Modes

Internal LAN interface configuration

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

This command is valid only on the virtual channel interface. Internal adapters are used to provide LAN gateway MAC addresses for the following CMCC adapter features: CSNA, Cisco Multipath Channel (CMPC), and TN3270 Server.

Up to 18 internal adapters can be configured on a CMCC adapter. Internal adapters are configured on internal LANs. The only limit to the number of internal adapters you can configure on a single internal LAN is the limit of up to 18 total internal adapters per CMCC.

When an internal adapter configuration command is removed or an existing internal adapter is modified, the *mac-address* parameter is not required. When in internal adapter configuration mode, the router prompt appears as follows:

```
router (cfg-adap-type n-m) #
```

In this syntax, *type* is the internal LAN type, *n* is the LAN ID, and *m* is the adapter number.

Examples

The following example shows how to configure internal adapters 3 and 4 (with their corresponding MAC addresses) on the internal Token Ring LAN number 20, and internal adapter 1 on the internal Token Ring LAN number 10:

```
interface channel 1/2
```

```

lan tokenring 20
adapter 3 4000.7500.0003
adapter 4 4000.7500.0004
lan tokenring 10
source-bridge 100 1 2000
adapter 1 4000.7500.1111

```

Related Commands

Command	Description
lan	Configures an internal LAN on a CMCC adapter interface and enters the internal LAN configuration mode.
name	Assigns a name to the internal adapter.
show extended channel lan	Displays the internal LANs and adapters configured on a CMCC adapter.
show extended channel llc2	Displays information about the LLC2 sessions running on the CMCC adapter interfaces.
show extended channel connection-map llc2	Displays the number of active LLC2 connections for each SAP and the mapping of the internal MAC adapter and the SAP to the resource that activated the SAP.
source-bridge	Configures an interface for SRB.

allocate lu

To assign logical units (LUs) to a pool, use the **allocate lu** command in listen-point physical unit (PU) configuration submode. To remove LUs assigned to a pool, use the **no** form of this command.

allocate lu *lu-address* **pool** *poolname* **clusters** *count*

no allocate lu *lu-address* **pool** *poolname* **clusters** *count*

Syntax Description

<i>lu-address</i>	Starting number of the LOCADDR to which a cluster of LUs are to be allocated.
pool <i>poolname</i>	Pool name to which you want to allocate LUs. The pool name cannot exceed eight characters in length.
clusters <i>count</i>	Range of LUs in a cluster that are allocated to the specified pool. For example, if the lu keyword specifies the beginning of the LOCADDR number, the cluster keyword specifies the number of clusters to be included in the pool.

Defaults

No LUs are assigned to a pool.

Command Modes

Listen-point PU configuration

Command History

Release	Modification
11.2(18)BC	This command was introduced.
12.0(5)T	This command was integrated into Cisco IOS Release 12.0(5)T.

Usage Guidelines

The following guidelines apply to the **allocate lu** command:

- The LUs assigned to a pool constitute a cluster. When multiple pools are configured, the LU ranges for different pools on the same PU must not overlap.
- A maximum of 255 LOCADDRs can be allocated to a pool. Configurations with invalid LOCADDRs are deleted. Overlapping LU ranges between different pools are invalid.
- The LOCADDR ranges must not overlap for multiple allocation statements and with existing ranges specified for client nailing statements.
- When LUs are allocated while LUs are in use, existing clients are allowed to complete their sessions unaffected.

Examples

In the following example, the starting LOCADDR is 10. Each cluster has 5 LOCADDRs, therefore 25 LOCADDRs (10 through 34) are allocated to the pool name LOT1.

```
interface channel 0/2
  tn3270-server
  pool LOT1 cluster layout 4s1p
```

```
listen-point 10.20.30.40
pu PU1
  allocate lu 10 pool LOT1 clusters 5
```

As a result of this configuration, the following LOCADDRs are created in each cluster:

- Cluster 1
 - LOCADDR 10—Screen
 - LOCADDR 11—Screen
 - LOCADDR 12—Screen
 - LOCADDR 13—Screen
 - LOCADDR 14—Printer
- Cluster 2
 - LOCADDR 15—Screen
 - LOCADDR 16—Screen
 - LOCADDR 17—Screen
 - LOCADDR 18—Screen
 - LOCADDR 19—Printer

All of the LUs in these clusters are allocated to pool LOT1.

Related Commands

Command	Description
pool	Defines pool names for the TN3270 server and specifies the number of screens and printers in each logical cluster.
pu (TN3270)	Creates a PU entity that has its own direct link to a host and enters PU configuration mode.
pu dlur (listen-point)	Creates a PU entity that has no direct link to a host and enters listen-point PU configuration mode.
tn3270-server	Starts the TN3270 server on a CMCC adapter and enters TN3270 server configuration mode.

alps a1-map a2-map

To specify the A1 and A2 logical agent-set control unit (ASCU) identification information, use the **alps a1-map a2-map** command in Airline Product Set (ALPS) ASCU configuration submode. To remove the specification of the A1 and A2 logical ASCU identification information, use the **no** form of this command.

alps a1-map *a1-value* **a2-map** *a2-value*

no alps a1-map *a1-value* **a2-map** *a2-value*

Syntax Description	<i>a1-value</i>	A1 logical ASCU identification:
		<ul style="list-style-type: none"> airline link control (ALC) range—Hexadecimal number in the range from 0 to 0xFF. Unisys Terminal System (UTS) range—Hexadecimal number in the range from 0 to 0xFF.
	<i>a2-value</i>	A2 logical ASCU identification:
		<ul style="list-style-type: none"> ALC range—Hexadecimal number in the range from 0 to 0xFF. UTS range—Hexadecimal number in the range from 0 to 0xFF.

Defaults No A1 and A2 logical ASCU identification information is specified.

Command Modes ALPS ASCU submode

Command History	Release	Modification
	11.3(6)T	This command was introduced.
	12.0(2)T	The range values were modified.
	12.0(5)T	The range values were modified.

Examples The following example specifies the A1 identification as 0x4C and the A2 identification as 0x20:

```
alps a1-map 4C a2-map 20
```

Related Commands	Command	Description
	encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps alias

To specify that an airline link control (ALC) agent-set control unit (ASCU) is to operate in nonpolling mode, and to specify the parent ASCU interchange address to which this ASCU is aliased, use the **alps alias** command in Airline Product Set (ALPS) ASCU configuration submode. To return the ASCU to polled mode, use the **no** form of this command.

alps alias *alias-interchange-address*

no alps alias *alias-interchange-address*

Syntax Description

<i>alias-interchange-address</i>	Specifies the interchange address of the polled (alias) ASCU with which to associate this non-polled ASCU. Valid range is between 41 and 7E, except 43, 44, 50 to 53, and 60.
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Defaults

If you do not specify the **alps alias** command, the ASCU functions in normal polled mode. You must specify the **alps alias** command to enable non-polled handling.

Command Modes

ALPS ASCU configuration

Command History

Release	Modification
12.1(3)T	This command was introduced.

Usage Guidelines

This command applies only to ALC ASCUs.

By default, an ALC ASCU cannot send data to a remote router until it is polled by that router. However, you can use this command to configure *non-polled* ALC ASCUs.

A non-polled ASCU must be associated with another, polled ASCU, known as the alias ASCU. When a remote router polls the alias ASCU, the router accepts data from that ASCU and from all non-polled ASCUs associated with that ASCU. The non-polled ASCUs present the same characteristics to the host as the alias ASCU, so the current ASCU configuration is maintained.

This command does not impact the ALC send path or the circuit management code.

Examples

The following example sets the ALC ASCU with interchange address 4B to operate in nonpolling mode and sets 42 as the alias interchange address:

```
alps ascu 4B
alps alias 42
```

Related Commands

Command	Description
alps ascu	Specifies a physical ASCU identity.
show alps ascu	Displays the status of the ALPS ASCU.

alps ascu

To specify a physical agent-set control unit (ASCU) identity, use the **alps ascu** command in Airline Product Set (ALPS) ASCU configuration submode. To remove the ASCU from the interface and delete any messages queued for transmission to the ASCU or the network, use the **no** form of this command.

alps ascu *id*

no alps ascu *id*

Syntax Description

id ASCU identification. Valid range is from 41 to 7E, except 43, 44, 50 to 53, and 60. The Unisys Terminal System (UTS) valid range is from 21 to 4F.

Defaults

No physical ASCU identity is specified.

Command Modes

Interface configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.
12.0(2)T	This command was modified for UTS support.
12.1(2)T	The valid range values were modified.

Usage Guidelines

If an ASCU already exists on the interface, the **alps ascu** command initiates the ALPS ASCU configuration submode for that ASCU. If the ASCU does not exist, an ASCU is created and the ALPS ASCU configuration submode is initiated.

Examples

The following example specifies the interchange address as 4B:

```
alps ascu 4B
```

Related Commands

Command	Description
encapsulation uts	Specifies that the P1024C UTS protocol is used on the serial interface.
encapsulation alc	Specifies that the P1024B airline link control (ALC) protocol is used on the serial interface.

alps auto-reset

To automatically reset a nonresponsive airline link control (ALC) agent-set control unit (ASCU) in the DOWN state, use the **alps auto-reset** command in Airline Product Set (ALPS) ASCU configuration submode. To disable the automatic reset, use the **no** form of this command.

alps auto-reset

no alps auto-reset

Syntax Description This command has no arguments or keywords.

Defaults Automatic ASCU reset is disabled by default.

Command Modes ALPS ASCU configuration submode

Command History	Release	Modification
	12.1(2)T	This command was introduced.

Usage Guidelines This command applies only to ALC ASCUs.

Examples The following example shows how to configure automatic reset for all nonresponsive ASCUs in the DOWN state:

```
alps auto-reset
```

Related Commands	Command	Description
	alps ascu	Specifies a physical ASCU identity.
	encapsulation alc	Specifies that the P1024B ALC protocol is used on the serial interface.

alps circuit

To specify an Airline Product Set (ALPS) circuit at the remote customer premises equipment (CPE) across a TCP/IP connection, use the **alps circuit** command in ALPS circuit configuration submode. To remove the circuit definition from the configuration, send a close message on the ALPS circuit, and delete any queued messages for the circuit, use the **no** form of this command.

alps circuit *name*

no alps circuit *name*

Syntax Description	<i>name</i>	Name given to identify an ALPS circuit.
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Defaults No default behavior or values.

Command Modes Global configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines Entering this command causes a circuit control block to be created. The command also initiates the ALPS circuit configuration submode. If the circuit already exists, the only action is the initiation of the ALPS circuit configuration submode.

Note that this command is used to statically create an ALPS circuit at the remote CPE. ALPS X.25 circuits (at the central CPE) are always dynamically created and are never created using this command.

Examples The following example specifies the name of the ALPS circuit at the remote CPE as CKT1:

```
alps circuit CKT1
```

Related Commands	Command	Description
	show alps circuits	Displays the status of the ALPS circuits.

alps connection-type permanent

To specify that this circuit should be established when the circuit is enabled, use the **alps connection-type permanent** command in Airline Product Set (ALPS) circuit configuration submode. To remove the permanent activation behavior and return the behavior to the default dynamic activation, use the **no** form of this command.

alps connection-type permanent [*retry-timer*]

no alps connection-type permanent [*retry-timer*]

Syntax Description	<i>retry-timer</i>	(Optional) Specifies the maximum interval between consecutive attempts to establish a circuit in the event of a failure. The default for the retry timer is 30 seconds and the range is from 1 to 180 seconds.
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Defaults	The default is 30 seconds.
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Command Modes	ALPS circuit submode
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Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples

The following example specifies that the circuit is established when enabled and that the customer premises equipment (CPE) will retry the connection every 30 seconds in the event of a failure:

```
alps connection-type permanent 30
```

Related Commands	Command	Description
	show alps circuits	Displays the status of the ALPS circuits.

alps default-circuit

To specify the Airline Product Set (ALPS) circuit that this agent-set control unit (ASCU) uses, use the **alps default-circuit** command in ALPS ASCU submode. To remove the default circuit specification, use the **no** form of this command.

alps default-circuit *name*

no alps default-circuit *name*

Syntax Description

<i>name</i>	Name given to identify an ALPS circuit on the remote customer premises equipment (CPE).
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Defaults

No default behavior or values.

Command Modes

ALPS ASCU submode

Command History

Release	Modification
11.3(6)T	This command was introduced.

Examples

The following example shows how to specify that ALPS circuit to be used is CKT1:

```
alps default-circuit CKT1
```

Related Commands

Command	Description
show alps circuits	Displays the status of the ALPS circuits.

alps enable-alarms ascu

To enable alarms for the Airline Product Set (ALPS) agent-set control unit (ASCU)s, use the **alps enable-alarms ascu** command in global configuration mode at the remote customer premises equipment (CPE). To disable alarms for the ALPS ASCUs, use the **no** form of this command.

alps enable-alarms ascu [*interface id*]

no alps enable-alarms ascu

Syntax Description

interface id (Optional) ASCU identifier. Enable alarms for the specified ASCU.

Defaults

If no interface and interchange address combination is specified, then alarms (Syslog messages and SNMP traps) are enabled for all ALPS ASCUs.

Command Modes

Global configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.

Usage Guidelines

If an interface and interchange address combination is specified, then the alarms are enabled only for the ASCU matching that combination. Up to eight **alps enable-alarms ascu** commands can be entered to allow a set of ALPS ASCUs to be monitored. ALPS ASCU alarms are generated only at the remote CPE.

Examples

The following example enables alarms for ALPS ASCU 42 on serial interface 1:

```
alps enable-alarms ascu Serial1 42
```

Related Commands

Command	Description
encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps enable-alarms circuit

To enable alarms for the Airline Product Set (ALPS) circuits, use the **alps enable-alarms circuit** command in global configuration mode. To remove the circuit definition from the configuration, use the **no** form of this command.

alps enable-alarms circuit [*name*]

no alps enable-alarms circuit [*name*]

Syntax Description

<i>name</i>	(Optional) Name given to identify an ALPS circuit on the remote customer premises equipment (CPE).
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Defaults

No default behavior or values.

Command Modes

Global configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.

Usage Guidelines

If a valid circuit name is specified, then the alarms are enabled only for the circuit matching the name. Up to eight **alps enable-alarms circuit** commands can be entered to allow a subset of ALPS circuits to be monitored. ALPS circuit alarms are generated at both the remote airline link control (ALC) CPE and the central (X.25) CPE.

Examples

The following example enables alarms for the ALPS circuit named CKT1:

```
alps enable alarms circuit CKT1
```

Related Commands

Command	Description
show alps circuits	Displays the status of the ALPS circuits.

alps enable-alarms peer

To enable alarms for the Airline Product Set (ALPS) peers, use the **alps enable-alarms peer** command in global configuration mode. To remove the circuit definition from the configuration, send a close message on the ALPS circuit, and delete any queued messages for the circuit, use the **no** form of this command.

alps enable-alarms peer [*ip-address*]

no alps enable-alarms peer [*ip-address*]

Syntax Description	<i>ip-address</i> (Optional) IP address of the remote peer for which alarms are enabled.
---------------------------	--

Defaults	No default behavior or values.
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Command Modes	Global configuration
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Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines	If an IP address is specified, then the alarms are enabled only for the remote peer matching the IP address. Up to eight alps enable-alarms peer commands can be entered to allow a set of ALPS peers to be monitored. ALPS peer alarms are generated at both the remote and the central customer premises equipment (CPE).
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Examples	The following example enables alarms for the ALPS peer at IP address 172.22.0.91: <pre>alps enable alarms peer 172.22.0.91</pre>
-----------------	---

Related Commands	Command	Description
	show alps peers	Displays the status of the ALPS partner peers.

alps enable-ascu

To move the previously defined agent-set control unit (ASCU) from the inactive poll list to the active poll list, use the **alps enable-ascu** command in Airline Product Set (ALPS) ASCU configuration submode. This move results in the protocol handler polling the ASCU and rendering it ready for handling terminal traffic. To remove the ASCU from the active poll list to the inactive poll list, use the **no** form of this command. This action prevents the ASCU from being polled, rendering it not ready for handling terminal traffic.

alps enable-ascu

no alps enable-ascu

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes ALPS ASCU submode

Release	Modification
11.3(6)T	This command was introduced.

Examples The following example moves the ASCU to the active poll list:

```
alps enable-ascu
```

Command	Description
encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps enable-circuit

To enable the circuit to be activated when data is received from an agent-set control unit (ASCU), use the **alps enable-circuit** command in Airline Product Set (ALPS) circuit configuration submode. To disable the circuit, use the **no** form of this command.

alps enable-circuit

no alps enable-circuit

Syntax Description This command has no arguments or keywords.

Defaults The circuit is disabled by default.

Command Modes ALPS circuit submode

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples The following example specifies the circuit to be activated when data is received from an ASCU:

```
alps enable-circuit
```

Related Commands	Command	Description
	show alps circuits	Displays the status of the ALPS circuits.

alps error-display

To specify where error messages about service availability or network problems are displayed, use the **alps error-display** command in Airline Product Set (ALPS) agent-set control unit (ASCU) configuration submode. To return to the default values, use the **no** form of this command.

alps error-display *number1 number2*

no alps error-display *number1 number2*

Syntax Description

<i>number1</i>	For P1024B airline link control (ALC), specifies the terminal address where these service messages are sent. Valid numbers are hexadecimal numbers in the range from 0x40 to 0x7F. The default address is 0x72. For P1024C Unisys Terminal System (UTS), specifies the screen line number where service messages are displayed. Valid numbers are hexadecimal numbers in the range from 0x00 to 0x7F. The default line number is 0x37.
<i>number2</i>	For P1024B ALC, specifies the screen line number where service messages are displayed. Valid numbers are hexadecimal numbers in the range from 0x40 to 0x7F. The default screen line number is 0x66. For P1024C UTS, specifies the column number where service messages are displayed. Valid numbers are hexadecimal numbers in the range from 0x00 to 0x7F. The default column number is 0x20.

Defaults

The default terminal address for P1024B ALC is 0x72.
The default screen line for P1024B ALC is 0x20.
The default line number for P1024C UTS is 0x37.
The default column number for P1024C UTS is 0x20.

Command Modes

ALPS ASCU submode

Command History

Release	Modification
11.3(6)T	This command was introduced.

Examples

The following example specifies that error messages are displayed at terminal address 6d, on screen line number 78:

```
alps error-display 6d 78
```

Related Commands

Command	Description
encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps host-hld host-link

To enable Airline Product Set (ALPS) on the X.25 interface, use the **alps host-hld host-link** command in interface configuration mode. To disable ALPS on the X.25 interface, use the **no** form of this command.

```
alps host-hld hld host-link number { ax25 [damp-tmr value] | emtox x.121 [pseudo-conv] }
    [life-tmr value] [reply-tmr value]
```

```
no alps host-hld hld host-link number { { ax25 [damp-tmr value] } | { emtox x.121 [pseudo-conv] } }
    [life-tmr value] [reply-tmr value]
```

Syntax Description

<i>hld</i>	Host high-level designator. A hexadecimal number in the range from 1 to 7f7f.
<i>number</i>	Host-link identifier. A number in the range from 1 to 255.
ax25	Specifies airline X.25 implementation of X.25.
damp-tmr <i>value</i>	(Optional) Specifies the AX.25 permanent virtual circuit (PVC) damping timer. The <i>value</i> argument is the length of time that a PVC can be inactive before it is destroyed and the corresponding ALPS circuits are closed. The default is 10 seconds.
emtox	Specifies EMTOX implementation of X.25.
<i>x.121</i>	X.121 address of the EMTOX host (called address on calls to the EMTOX host).
<i>pseudo-conv</i>	(Optional) Specifies the pseudo-conversational format of EMTOX packets.
life-tmr <i>value</i>	(Optional) Specifies the maximum amount of time (in seconds) that a message may be queued for sending to the host X.25 system before it is discarded. The <i>value</i> argument is time (in seconds).
reply-tmr <i>value</i>	(Optional) Specifies the duration of the no-reply timer. If the X.2 line is idle for this duration, and the X.25 transmit window is full, then ALPS sends an X.25 reset message on the virtual circuit to reset the transmit/receive windows. The no-reply timer can be configured for 10 to 600 seconds.

Defaults

The default damping timer value is 10 seconds.
The default no-reply timer value is 60 seconds.

Command Modes

Interface configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.

Examples

The following example shows how to enable ALPS on the X.25 interface:

```
alps host-hld 1 host-link 1 emtox
```

alps hostlink

To specify information required to establish an X.25 virtual circuit at the central customer premises equipment (CPE), use the **alps hostlink** command in Airline Product Set (ALPS) circuit configuration submode. To remove the circuit definition from the configuration, send a close message on the ALPS circuit, and delete any queued messages for the circuit, use the **no** form of this command.

```
alps hostlink number {ax25 lcn | emtox x121-address} [winout val1] [winin val2] [ops val3]
[ips val4]
```

```
no alps hostlink number {ax25 lcn | emtox x121-address} [winout val1] [winin val2] [ops val3]
[ips val4]
```

Syntax Description	
<i>number</i>	Interface at the host CPE. Decimal number in the range from 1 to 255.
ax25	Specifies airline X.25 implementation of X.25.
<i>lcn</i>	Local channel number for AX.25 connections.
emtox	Specifies EMTOX implementation of X.25.
<i>x121-address</i>	X.121 address for EMTOX connections. This is the X.121 calling address for X.25 call packets sent from the central CPE to the EMTOX host. This address is the source address in a call to the host.
winout <i>val1</i>	(Optional) Specifies the X.25 send window. The <i>val1</i> argument is a decimal number in the range from 1 to 7.
winin <i>val2</i>	(Optional) Specifies the X.25 receive window. The <i>val2</i> argument is a decimal number in the range from 1 to 7.
ops <i>val3</i>	(Optional) Specifies the maximum output packet size. The <i>val3</i> argument is one of the following numbers: 128, 240, 256, 512, 1024, 2048, or 4096.
ips <i>val4</i>	(Optional) Specifies the maximum input packet size. The <i>val4</i> argument is one of the following numbers: 128, 240, 256, 512, 1024, 2048, or 4096.

Defaults If no values are specified, the default values at the X.25-attached central CPE are used.

Command Modes ALPS circuit submode

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples The following example establishes an X.25 virtual circuit at the central CPE. The configuration specifies airline X.25 implementation. The host CPE interface is 3, the local channel number for airline X.25 connections is 120, and the X.25 send window is 3.

```
alps hostlink 3 ax25 120 winout 3 winin 3
```

Related Commands

Command	Description
alps auto-reset	Automatically resets a nonresponsive ALC ASCU in the DOWN state.
show alps circuits	Displays the status of the ALPS circuits.

alps idle-timer

To specify (for dynamic circuits) the length of time that can elapse before an idle circuit is disabled, use the **alps idle-timer** command in Airline Product Set (ALPS) circuit configuration submode. To return to the default idle-timer value, use the **no** form of this command.

alps idle-timer *timer*

no alps idle-timer *timer*

Syntax Description	<i>timer</i>	Length of time that can elapse before an idle circuit is brought down. The range is from 10 to 600 seconds. The default is 60 seconds.
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Defaults	The default length of time that can elapse before an idle circuit is brought down is 60 seconds.
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Command Modes	ALPS circuit submode
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Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples	The following example specifies that an idle circuit is maintained for 90 seconds before it is disabled: <pre>alps idle-timer 90</pre>
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Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive ALC ASCU in the DOWN state.
	show alps circuits	Displays the status of the ALPS circuits.

alps keepalive

To enable TCP keepalives for Airline Product Set (ALPS) TCP peer connections, use the **alps keepalive** command in global configuration mode. A TCP keepalive request will be sent to the remote peer if the TCP connection to the remote peer is silent for a time period larger than the interval specified. The TCP connection to the ALPS host will be closed when a count equal to the retry count specified is missed consecutively. To disable keepalives for ALPS, use the **no** form of this command.

alps keepalive [*interval time*] [*retry count*]

no alps keepalive [*interval time*] [*retry count*]

Syntax Description	interval time	(Optional) Interval for keepalive requests. The <i>time</i> argument is the keepalive interval, in the range from 10 to 300 seconds. The default is 30 seconds.
	retry count	(Optional) Indicates how many times keepalive requests will be sent before the connection is closed. The <i>count</i> argument is the retry count, in the range from 1 to 10. The default is three retries.

Defaults
The default keepalive interval is 30 seconds.
The default retry count is 3.

Command Modes
Global configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples
The following example specifies that a TCP keepalive request will be sent to the remote peer if the TCP peer connection is idle for 60 seconds. The connection will be closed after three consecutive keepalive requests are sent.

```
alps keepalive interval 60 retry 8
```

Related Commands	Command	Description
	alps local-peer	Specifies the IP address of the local peer.

alps lifetime-timer

To specify how long messages can be queued in the Airline Product Set (ALPS) circuit queue awaiting transmission to the central customer premises equipment (CPE), use the **alps lifetime-timer** command in ALPS circuit configuration submode. To return to the default lifetime-timer value, use the **no** form of this command.

alps lifetime-timer *timer*

no alps lifetime-timer *timer*

Syntax Description	<i>timer</i>	Length of time, in seconds, that a message can be queued. The range is from 1 to 20 seconds. The default is 4 seconds.
---------------------------	--------------	--

Defaults	The default length of time that a message can be queued in the ALPS circuit queue is 4 seconds.
-----------------	---

Command Modes	ALPS circuit submode
----------------------	----------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines	Messages that exceed the timer limit are discarded.
-------------------------	---

Examples	The following example specifies that a message remains in the ALPS circuit queue for no longer than 3 seconds:
-----------------	--

```
alps lifetime-timer 3
```

Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive ALC ASCU in the DOWN state.
	show alps circuits	Displays the status of the ALPS circuits.

alps local-hld remote-hld

To specify the local and remote high-level designator (HLD)s to use for this Airline Product Set (ALPS) circuit, use the **alps local-hld remote-hld** command in ALPS circuit configuration submode. To remove the definition from the configuration, use the **no** form of this command.

alps local-hld *loc-hld* **remote-hld** *rem-hld*

no alps local-hld *loc-hld* **remote-hld** *rem-hld*

Syntax Description

<i>loc-hld</i>	Local HLD to use for ALPS circuit. Hexadecimal number in the range from 1 to FFFF.
<i>rem-hld</i>	Remote HLD to use for ALPS circuit. Hexadecimal number in the range from 1 to FFFF.

Defaults

No default behavior or values.

Command Modes

ALPS circuit submode

Command History

Release	Modification
11.3(6)T	This command was introduced.
12.0(5)T	This command was modified and the remote-hld keyword was not applicable for mapping of airline traffic over IP (MATIP).

Usage Guidelines

The **remote-hld** keyword is not applicable for ALPS with MATIP.

Examples

The following example specifies the local HLD as 4B10:

```
alps local-hld 4B10
```

Related Commands

Command	Description
alps auto-reset	Automatically resets a nonresponsive airline link control (ALC) ASCU in the DOWN state.
show alps circuits	Displays the status of the ALPS circuits.

alps local-peer

To specify the IP address of the local peer, use the **alps local-peer** command in global configuration mode. To remove all subsequent Airline Product Set (ALPS) configuration commands from the router, use the **no** form of this command.

alps local-peer *ip-address* [**promiscuous**]

no alps local-peer *ip-address* [**promiscuous**]

Syntax Description		
	<i>ip-address</i>	IP address of the local peer.
	promiscuous	(Optional) Keyword specified at the central customer premises equipment (CPE) to accept incoming TCP connections from any remote customer premises equipment (CPE).

Defaults No default behavior or values.

Command Modes Global configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples The following example specifies the local peer IP address as 172.22.0.91 and specifies that the CPE accepts incoming TCP connections from any CPE:

```
alps local-peer 172.22.0.91 promiscuous
```

Related Commands	Command	Description
	show alps peers	Displays the status of the ALPS partner peers.

alps matip-close-delay

To specify the interval between the closing and reopening of mapping of airline traffic over IP (MATIP) circuit connections, use the **alps matip-close-delay** command in Airline Product Set (ALPS) circuit configuration submode circuit submode command. To restore the definition to the default value, use the **no** form of this command.

alps matip-close-delay *time*

no alps matip-close-delay *time*

Syntax Description	<i>time</i>	Minimum number of seconds between the closing and reopening of an ALPS MATIP circuit. The range is from 1 to 90 seconds. The default is 10 seconds.
---------------------------	-------------	---

Defaults The default value is 10 seconds.

Command Modes ALPS circuit submode

Command History	Release	Modification
	12.0(5)T	This command was introduced.

Examples The following example specifies a close delay time of 20 seconds:

```
alps matip-close-delay 20
```

Related Commands	Command	Description
	show alps circuits	Displays the status of the ALPS circuits.

alps max-msg-length

To specify maximum input message length, use the **alps max-msg-length** command in Airline Product Set (ALPS) agent-set control unit (ASCU) configuration submode. To return to the default maximum input message length, use the **no** form of this command.

alps max-msg-length *value*

no alps max-msg-length *value*

Syntax Description	<i>value</i>	Maximum input message length. The range is from 1 to 3840. The default is 962 characters.
---------------------------	--------------	---

Defaults	The default maximum input message length is 962 characters.
-----------------	---

Command Modes	ALPS ASCU submode
----------------------	-------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples	The following example specifies that the maximum length of a message is 1000 characters: <pre>alps max-msg-length 1000</pre>
-----------------	---

alps mpx

To specify the multiplexing and the agent-set control unit (ASCU) identification header for this circuit, use the **alps mpx** command in Airline Product Set (ALPS) ASCU configuration submode. To remove the definition from the configuration, use the **no** form of this command.

```
alps mpx {group | single} hdr {a1a2 | none}
```

```
no alps mpx {group | single} hdr {a1a2 | none}
```

Syntax Description

group	Specifies that multiple ASCUs will be multiplexed on the ALPS circuit. This setting is the default.
single	Specifies that only one ASCU will use this circuit.
hdr	Specifies the ASCU identification header for the circuit. The default is a1a2.
a1a2	ASCU identification via A1, A2.
none	No ASCU identification.

Defaults

The default for multiplexing is **group**.

The default header is a1a2.

Command Modes

ALPS circuit submode

Command History

Release	Modification
11.3(6)T	This command was introduced.
12.0(1)	This command was available for general release.

Usage Guidelines

If the **alps mpx group** command is specified, multiple ASCUs will be multiplexed on this ALPS circuit and the **none** option is not applicable. If the **alps mpx single** command is specified, then only one ASCU uses this ALPS circuit. If **alps mpx single hdr none** command is specified, the A1 and A2 ASCU identification information is not added to the front of data frames sent across this circuit, and it is assumed that it does not exist in frames received on this circuit. The exclusion of ASCU identification should be specified only when the EMTOX protocol is used.

Examples

The following example shows how to specify the multiplexing and the ASCU identification header:

```
alps mpx group hdr a1a2
```

alps n1

To specify the threshold of consecutive errors logged before an agent-set control unit (ASCU) is declared down, use the **alps n1** command in interface configuration mode. To reassert the default number of consecutive errors before declaring an ASCU down, use the **no** form of this command.

alps n1 *errors*

no alps n1 *errors*

Syntax Description

<i>errors</i>	Error count limit. The valid range is from 1 to 30 errors. The default for airline link control (ALC) is 30 errors. The default for Unisys Terminal System (UTS) is 10 errors.
---------------	--

Defaults

The default ALC error count is 30 errors.

The default UTS error count is 10 errors.

Command Modes

Interface configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.
12.0(2)T	The error ranges were modified.

Usage Guidelines

The error count limit is a threshold value. If the ASCU state is UP and the error count threshold is exceeded, the ASCU state changes to DOWN and it is moved to the inactive poll. If alarms are enabled for the ASCU, a Syslog message is displayed and an Simple Network Management Protocol (SNMP) notification is sent to the SNMP network management station.

Examples

The following example specifies that an ASCU is declared down when the error count exceeds one:

```
alps n1 1
```

Related Commands

Command	Description
alps ascu	Specifies a physical ASCU identity.
encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps n2

To specify the number of polls that must be correctly replied to before an agent-set control unit (ASCU) is declared up, use the **alps n2** command in interface configuration mode. To reassert the default number of polls that must be correctly replied to before an ASCU is declared up, use the **no** form of this command.

alps n2 *polls*

no alps n2 *polls*

Syntax Description	<i>polls</i>	Number of polls that must be correctly replied to. The valid range is from 1 to 30 polls. The default is 1 poll.
---------------------------	--------------	--

Defaults The default number of polls that must be correctly replied to is one.

Command Modes Interface configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines If the ASCU state is DOWN and the reply threshold is exceeded, the ASCU state changes to UP and the ASCU is moved to the active poll list. If alarms are enabled for the ASCU, a Syslog message is displayed and an Simple Network Management Protocol (SNMP) notification is sent to the SNMP management station.

Examples The following example specifies that two polls must be correctly replied to before the ASCU is declared up:

```
alps n2 2
```

Related Commands	Command	Description
	alps ascu	Specifies a physical ASCU identity.
	encapsulation uts	Specifies that the P1024C Universal Terminal Support (UTS) protocol will be used on the serial interface.

alps n3

To specify the maximum number of retransmissions of an unacknowledged output data message to an agent-set control unit (ASCU), use the **alps n3** command in interface configuration mode. To reassert the default, use the **no** form of this command.

alps n3 *value*

no alps n3 *value*

Syntax Description

<i>value</i>	Maximum number of times an unacknowledged output data message can be re-sent. When the number is exceeded, the output data message is dropped. The valid range is from 1 to 10 resends. The default is 3 resends.
--------------	---

Defaults

The default number of resends is three.

Command Modes

Interface configuration

Command History

Release	Modification
12.0(2)T	This command was introduced.

Usage Guidelines

This command is valid only on 1026C interfaces.

Examples

The following example specifies that 6 is the maximum number of resends of an unacknowledged output data message to an ASCU:

```
alps n3 6
```

Related Commands

Command	Description
alps ascu	Specifies a physical ASCU identity.
show alps ascu	Displays the status of the ALPS ASCU.

alps poll-pause

To set the minimum interval, in milliseconds, between two polls to the same agent-set control unit (ASCU), use the **alps poll-pause** command in interface configuration mode. To the default interval, use the **no** form of this command to revert.

alps poll-pause *milliseconds*

no alps poll-pause

Syntax Description	<i>milliseconds</i>	Minimum interval between polls, in milliseconds (ms). The valid range is from 10 to 1000 ms. The default interval is 50 ms.
---------------------------	---------------------	---

Defaults	The default minimum interval is 50 ms.
-----------------	--

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples	The following example sets a 200-ms minimum interval between polls: <pre>alps poll-pause 200</pre>
-----------------	---

Related Commands	Command	Description
	alps ascu	Specifies a physical ASCU identity.

alps primary-peer

To specify the primary TCP peer and, optionally, a backup TCP peer for an Airline Product Set (ALPS) circuit, use the **alps primary-peer** command in ALPS circuit configuration submode. To remove the definition from the configuration, use the **no** form of this command.

```
alps primary-peer ip-address [backup-peer ip-address]
```

```
no alps primary-peer ip-address [backup-peer ip-address]
```

Syntax Description		
	<i>ip-address</i>	IP address specified in the alps remote-peer command.
	backup-peer	(Optional) Backup TCP peer for the ALPS circuit.
	<i>ip-address</i>	(Optional) IP address specified in the alps remote-peer command.

Defaults No default behavior or values.

Command Modes ALPS circuit submode

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples The following example specifies a primary peer at IP address 172.22.0.91 and a backup peer at IP address 172.22.0.92:

```
alps primary-peer 172.22.0.91 backup-peer 172.22.0.92
```

Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive airline link control (ALC) ASCU in the DOWN state.
	show alps peers	Displays the status of the ALPS partner peers.

alps remote-peer

To specify the partner IP address for an Airline Product Set (ALPS) circuit, use the **alps remote-peer** command in global configuration mode. To remove the definition from the configuration, use the **no** form of this command.

alps remote-peer *ip-address* [**protocol** {**atp** | **matip-a**}] [**status-interval** *interval*] [**status-retry** *retries*] [**dynamic** [*inact-timer*] [**no-circuit** *no-circ-timer*]] [**tcp-qlen** [*number*]]

no alps remote-peer *ip-address* [**protocol** {*atp* | *matip-a*}] [**status-interval** *interval*] [**status-retry** *retries*] [**dynamic** [*inact-timer*] [**no-circuit** *no-circ-timer*]] [**tcp-qlen** [*number*]]

Syntax Description

<i>ip-address</i>	IP address of the peer.
protocol { atp matip-a }	(Optional) Specifies the type of encapsulation for the connection. The following options are available: <ul style="list-style-type: none"> ALPS Tunneling Protocol encapsulation. This encapsulation is the default. mapping of airline traffic over IP (MATIP) Type A (conversational) encapsulation.
status-interval <i>interval</i>	(Optional) Specifies amount of time, in seconds, between sending of MATIP status messages. The messages verify the integrity of the TCP connection. Number of seconds between status messages. The range is from 0 to 300 seconds. The default value is 0 (off).
status-retry <i>retries</i>	(Optional) Specifies number of times to retry sending a MATIP status message before the peer connection is closed. Number of retries. The range is from 0 to 100 retries. The default value is 2.
dynamic <i>inact-timer</i>	(Optional) Allows the TCP connection to the host peer to be opened only when there is data to be transferred to the host reservation system. Length of inactivity, in seconds, after which the connection is closed. The range is from 0 to 300 seconds. The default is 30 seconds. A value of zero indicates that the timer is disabled.
no-circuit <i>no-circ-timer</i>	(Optional) Specifies amount of time, in seconds, that a peer will stay connected while no circuits are using the peer connection. This parameter is valid only if the dynamic parameter is first configured. Number of seconds before which the timer will expire. The range is from 0 to 3600 seconds. The default is 90 seconds.
tcp-qlen <i>number</i>	(Optional) Specifies the maximum length of a TCP queue for peer connections. Number of packets allowed in the TCP queue. The range is from 26 to 100 packets. The default is 50 packets.

Defaults

The default for the **status-interval** argument is 0 (off).

The default for the **status-retry** argument is 2.

The default for the **dynamic** argument is 30 seconds.

The default for the **no-circuit** argument is 90 seconds.

The default for the **tcp-qlen** argument is 50 packets.

Command Modes Global configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced
	12.0(5)T	The protocol , status-interval , status-retry and the no-circuit keyword options were added.

Usage Guidelines

When the protocol option is configured for MATIP, the peer connection is dynamic.

When the protocol option is configured for ALPS Tunneling Protocol (ATP), the peer connection is permanent.

The **no-circuit** option within the dynamic keyword does not apply to permanent airline link control (ALC)/Universal Terminal Support (UTS) connections.

The **status-interval** and **status-retry** options apply only to the MATIP protocol.

Issuing the **no alps remote-peer** command does the following:

- Closes TCP connection.
- Notifies the partner TCP peer that this connection is closed.

Notifies the ALPS circuits using this TCP peer that the connection is closed.

Examples

The following example specifies a MATIP peer connection at IP address 10.22.0.92. Status messages will be sent every 9 seconds and will be resent twice before the connection is closed. The maximum TCP length is 30:

```
alps remote-peer 10.22.0.92 protocol matip-a status-interval 9 status-retry 2 tcp-qlen 30
```

Related Commands	Command	Description
	alps local-peer	Specifies the IP address of the local peer.
	show alps peers	Displays the status of the ALPS partner peers.

alps retry-option

To configure the customer premises equipment (CPE) to signal the agent-set control unit (ASCU) whenever an error is detected, use the **alps retry-option** command in Airline Product Set (ALPS) ASCU configuration submode. To reassert the default action of no retry, use the **no** form of this command.

alps retry-option {resend | reenter}

no alps retry-option

Syntax Description

resend	Specifies the retry option as resend. This option causes an indicator LED to signal the operator at the ASCU to resend data.
reenter	Specifies the retry option as reenter. This option causes a service message to signal the operator at the ASCU to reenter data.

Defaults

The default retry option is no retry.

Command Modes

ALPS ASCU submode

Command History

Release	Modification
11.3(6)T	This command was introduced.

Usage Guidelines

This command is applicable only for P1024B automatic level control (ALC) interfaces; it is invalid on P1024C Unisys Terminal System (UTS) interfaces.

Examples

The following example specifies that an indicator LED signals the ASCU to resend data:

```
alps retry-option resend
```

Related Commands

Command	Description
alps ascu	Specifies a physical ASCU identity.
encapsulation uts	Specifies that the P1024C UTS protocol will be used on the serial interface.

alps service-msg data-drop

To specify where to retrieve the terminal address to be used when a service message is sent to an agent-set control unit (ASCU) as the result of a dropped data message, use the **alps service-msg data-drop** command in interface configuration mode. To remove the terminal address specification, use the **no** form of this command.

```
alps service-msg data-drop {msg-term | config-term}
```

```
no alps service-msg data-drop {msg-term | config-term}
```

Syntax Description	msg-term	Specifies that the service message will be sent to the terminal address of the dropped message.
	config-term	Specifies that the service message terminal address is the same address configured in the alps-error display command.

Defaults

The **config-term** option is the default.

If this command is not configured and a data message is dropped from a terminal, the resulting service message is sent to the terminal specified in the **alps error-display** command.

Command Modes

Interface configuration

Command History

Release	Modification
12.1(2)T	This command was introduced.

Usage Guidelines

This command applies to serial interfaces configured with airline link control (ALC) encapsulation only.

Examples

The following example specifies that service messages resulting from dropped data messages are sent to the terminal address of the dropped message:

```
alps service-msg data-drop msg-term
```

Related Commands

Command	Description
alps error-display	Specifies where error messages about service availability or network problems are displayed.
encapsulation alc	Specifies that the P1024B ALC protocol is used on the serial interface.

alps service-msg format

To specify the protocol format of service messages sent from the router to an agent-set control unit (ASCU), use the **alps service-msg format** command in interface configuration mode. To remove the protocol format specification, use the **no** form of this command.

alps service-msg format {sita | apollo}

no alps service-msg format {sita | apollo}

Syntax Description

sita	Specifies the sita protocol format.
apollo	Specifies the apollo protocol format.

Defaults

The default protocol format is **sita**.

Command Modes

Interface configuration

Command History

Release	Modification
12.1(2)T	This command was introduced.

Usage Guidelines

This command applies to serial interfaces configured with automatic level control (ALC) encapsulation only.

Examples

The following example specifies the apollo protocol format:

```
alps service-msg format apollo
```

Related Commands

Command	Description
encapsulation alc	Specifies that the P1024B airline link control (ALC) protocol is used on the serial interface.

alps service-msg status-change

To specify that service messages for Airline Product Set (ALPS) circuit status changes be sent to agent-set control unit (ASCU)s on the serial interface, use the **alps service-msg status-change** command in interface configuration mode. To send service messages for ALPS circuit status changes only when airline link control (ALC) data messages are dropped, use the **no** form of this command.

alps service-msg status-change

no alps service-msg status-change

Syntax Description This command has no arguments or keywords.

Defaults The default is on. Unless the **no** form of this command is configured, unsolicited service messages are sent to all ASCUs multiplexed on the mapping of airline traffic over IP (MATIP) session when the following ALPS circuit events occur:

- MATIP session status change
- ASCU status change

Command Modes Interface configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced.

Usage Guidelines This command applies to serial interfaces configured with ALC encapsulation only. If the **no** form of this command is configured, service messages for ALPS circuit status changes are sent only when airline link control (ALC) data messages are dropped.

Examples The following example specifies that unsolicited service messages resulting from ALPS circuit status changes be sent to ASCUs on the serial interface:

```
alps service-msg status-change
```

Related Commands	Command	Description
	encapsulation alc	Specifies that the P1024B ALC protocol is used on the serial interface.

alps service-msg-interval

To specify the interval between consecutive transmissions of service messages from the remote customer premises equipment (CPE) to the agent-set control unit (ASCU), use the **alps service-msg-interval** command in Airline Product Set (ALPS) circuit configuration submode. To remove the definition from the configuration, use the **no** form of this command.

alps service-msg-interval *seconds*

no alps service-msg-interval *seconds*

Syntax Description	<i>seconds</i>	Interval, in seconds, between consecutive sendings of service messages from the remote CPE to the ASCU. The range is from 1 to 20 seconds. The default interval is 4 seconds.
---------------------------	----------------	---

Defaults	The default interval between consecutive sendings of service messages from the remote CPE to the ASCU is 4 seconds.
-----------------	---

Command Modes	ALPS circuit submode
----------------------	----------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines	The “PLEASE RETRY” message is sent only to ASCUs that use circuits with a dynamic connection type.
-------------------------	--

Examples	The following example specifies an interval of 3 seconds between sending service messages from the CPE to the ASCU:
-----------------	---

```
alps service-msg-interval 3
```

Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive ALC ASCU in the DOWN state.
	alps service-msg-list	Defines the service message list to be used for this circuit.

alps service-msg-list number

To define the service message identity and its contents for a service message list, use the **alps service-msg-list number** command in global configuration mode. To remove a service message number from the service message list configuration, use the **no** form of this command.

alps service-msg-list *list number number message*

no alps service-msg-list *list number number message*

Syntax Description

<i>list</i>	Service message list to be used for this circuit. Valid numbers are from 1 to 8.
<i>number</i>	List number. Valid numbers are from 1 to 8.
<i>message</i>	Contents of a service message. Maximum number of characters allowed in a service message is 32.
Note	Configuring the <i>message</i> argument with a value of \$OFF\$ disables this particular service message.

Defaults

The default service message is used if no service message list number is specified.

[Table 1](#) shows the default service message text strings.

Table 1 Service Message Default Text Strings

Message Number	Event	Text String
1	ALPS circuit to host is opened.	CONNECTION UP
2	X.25 virtual circuit at the host is cleared.	DISC BY THE HOST
3	X.25 interface at the host is down.	HOST ISOLATED
4	No response from the host router when trying to establish a connection.	NETWORK PROBLEM
5	Connection to host was disconnected because of inactivity.	READY TO CONNECT
6	Network is congested.	CONGESTION
7	Network congestion has cleared.	PLEASE PROCEED
8	Network operator has disabled the path to the host.	DISC BY NET OPERAT

Command Modes

Global configuration

■ `alps service-msg-list number`

Command History	Release	Modification
	11.3(6)T	This command was introduced.
	12.1(2)T	The \$OFF\$ option was added to the <i>message</i> argument and the maximum service message length was increased to 32.

Usage Guidelines To disable a particular service message, configure the *message* argument with a value of \$OFF\$.

Examples The following example specifies the text of message list 1, message number 2:

```
alps service-msg-list 1 number 2 "Turn off the terminal NOW."
```

The following example disables service message 3 from list 1:

```
alps service-msg-list 1 number 3 $OFF$
```

Related Commands	Command	Description
	<code>alps service-msg list</code>	Defines the service message list to be used for this circuit.

alps service-msg-list

To define the service message list to be used for this circuit, use the **alps service-msg-list** command in Airline Product Set (ALPS) circuit configuration submode. To remove the list from the circuit configuration, thus issuing no service messages until another list is configured, use the **no** form of this command.

alps service-msg-list *list*

no alps service-msg-list *list*

Syntax Description	<i>list</i>	The service message list to be used for this circuit. The valid numbers are from 1 to 8.
---------------------------	-------------	--

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	ALPS circuit submode
----------------------	----------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples	The following example specifies that message list 1 is used for this circuit: <pre>alps service-msg-list 1</pre>
-----------------	---

Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive airline link control (ALC) ASCU in the DOWN state.
	alps service-msg-interval	Specifies the interval between consecutive transmissions of service messages from the remote CPE to the agent-set control unit (ASCU).

alps servlim

To specify the number of polls of the agent-set control unit (ASCU) UP list allowed between two successive polls of the ASCU DOWN list, use the **alps servlim** command in interface configuration mode. To reassert the default number of cycles through the normal (active) poll list allowed before the slow poll list is processed, use the **no** form of this command.

alps servlim *polls*

no alps servlim *polls*

Syntax Description	<i>polls</i>	Number of polls of the ASCU UP list. The valid range is from 1 to 512 polls. The default is 30 polls.
---------------------------	--------------	---

Defaults	The default number of polls of the ASCU UP list allowed between two successive polls of the ASCU DOWN list is 30 polls.
-----------------	---

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Examples The following example specifies that five polls of the ASCU UP list are allowed between two successive polls of the ASCU DOWN list.

```
alps servlim 5
```

Related Commands	Command	Description
	alps n1	Specifies the threshold of consecutive errors logged before an ASCU is declared down.
	alps n2	Specifies the number of polls that must be correctly replied to before an ASCU is declared up.
	alps t1	Specifies the timeout delay between polling and response.
	alps t2	Specifies the timeout delay between receipt of the first character of an IP sequence solicited by a poll and receipt of a GA sequence.

alps t1

To specify the timeout delay between polling and response, use the **alps t1** command in interface configuration mode. To reassert the default poll timeout value of 0.5 seconds, use the **no** form of this command.

alps t1 *delay*

no alps t1 *delay*

Syntax Description

<i>delay</i>	Timeout delay, in seconds, between polling and response. The valid range is from 1 to 20-tenths of a second (0.1 to 2 seconds). The default is 5-tenths of a second (0.5 second).
--------------	---

Defaults

The default timeout delay between polling and response is 5-tenths of a second (0.5 second).

Command Modes

Interface configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.
12.1(2)T	The range for the timeout delay was extended.

Examples

The following example specifies a 0.5-second timeout delay between polling and response:

```
alps t1 5
```

Related Commands

Command	Description
alps n1	Specifies the threshold of consecutive errors logged before an agent-set control unit (ASCU) is declared down.
alps n2	Specifies the number of polls that must be correctly replied to before an ASCU is declared up.
alps servlim	Specifies the number of polls of the ASCU UP list allowed between two successive polls of the ASCU DOWN list.
alps t2	Specifies the timeout delay between receipt of the first character of an IP sequence solicited by a poll and receipt of a Go Ahead (GA) sequence.
encapsulation alc	Specifies that the P1024B airline link control (ALC) protocol is used on the serial interface.
encapsulation uts	Specifies that the P1024C UTS protocol is used on the serial interface.

alps t2

To specify the timeout delay between receipt of the first character of an I/P sequence solicited by a poll and receipt of a Go Ahead (GA) sequence, use the **alps t2** command in interface configuration mode. To reassert the default timeout value of 6 seconds, use the **no** form of this command.

alps t2 *delay*

no alps t2 *delay*

Syntax Description

<i>delay</i>	Timeout delay, in seconds, between receipt of first character of an I/P sequence solicited by a poll and receipt of GA sequence. The valid range is from 1 to 10 seconds. The default is 6 seconds.
--------------	---

Defaults

The default timeout delay between receipt of first character of an I/P sequence solicited by a poll and receipt of GA sequence is 6 seconds.

Command Modes

Interface configuration

Command History

Release	Modification
11.3(6)T	This command was introduced.

Examples

The following example specifies a timeout delay of 8 seconds between receipt of the first character of an I/P sequence solicited by a poll and receipt of a GA sequence:

```
alps t2 8
```

Related Commands

Command	Description
alps n1	Specifies the threshold of consecutive errors logged before an agent-set control unit (ASCU) is declared down.
alps n2	Specifies the number of polls that must be correctly replied to before an ASCU is declared up.
alps servlim	Specifies the number of polls of the ASCU UP list allowed between two successive polls of the ASCU DOWN list.
alps t1	Specifies the timeout delay between polling and response.

alps translate

To map an X.121 address to an IP address of a remote peer, use the **alps translate** command in interface configuration mode. To remove mapping from the configuration, use the **no** form of this command.

alps translate *x.121-address ip-address*

no alps translate *x.121-address ip-address*

Syntax	Description
<i>x.121-address</i>	X.121 address to be mapped to an IP address of a remote peer.
<i>ip-address</i>	IP address of the remote peer.

Defaults No default behavior or values.

Command Modes Interface configuration

Command History	Release	Modification
	11.3(6)T	This command was introduced.

Usage Guidelines The X.121 address is compared to the Called Address on inbound X.25 call packets to determine if the call should be accepted. The X.121 address may have an asterisk (*) at the end to indicate “all X.121 addresses prefixed with the address before the *.”

Examples The following example maps all X.121 addresses prefixed with the address 88845 to the remote peer IP address 172.22.0.90:

```
alps translate 88845* 172.22.0.90
```

Related Commands	Command	Description
	encapsulation x25	Specifies operation of a serial interface as an X.25 device.

alps update-circuit

To update one or more Airline Product Set (ALPS) circuits, use the **alps update-circuit** command in user EXEC or privileged EXEC mode. If a circuit name is specified, then only that circuit will be updated; otherwise, all circuits will be updated.

alps update-circuit [*name*]

Syntax Description	<i>name</i> (Optional) Specifies name of the circuit to update.
---------------------------	---

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	User EXEC Privileged EXEC
----------------------	------------------------------

Command History	Release	Modification
	12.0(5)T	This command was introduced.

Usage Guidelines	<p>If the alps update-circuit command is issued for a circuit that is using the ALPS Tunneling Protocol (ATP) protocol, the circuit will be closed and reopened.</p> <p>If the alps update-circuit command is issued for a circuit that is using the mapping of airline traffic over IP (MATIP) protocol, a configuration update will be sent in the form of a MATIP Session Open command.</p> <p>The alps update-circuit command is effective only for ALPS circuits that are enabled and active (opening or opened state).</p> <p>There is not a no form for this command.</p>
-------------------------	--

Examples	The following example specifies that circuit 1 has been updated:
-----------------	--

```
Router# alps update-circuit CKT-1
```

Related Commands	Command	Description
	alps auto-reset	Automatically resets a nonresponsive airline link control (ALC) agent-set control unit (ASCU) in the DOWN state.
	alps enable-circuit	Enables the circuit to be activated when data is received from an ASCU.
	show alps circuits	Displays the status of the ALPS circuits.

asp address-mask

To configure the address mask on an interface of a supervisory control data acquisition (SCADA) device so that one route statement sends the data to all the remote addresses that match the configured address and the mask, use the **asp address-mask** command in interface configuration mode. To restore the default value, use the **no** form of the command.

asp address-mask *mask*

no asp address-mask *mask*

Syntax Description	<i>mask</i>	Adds a mask implying that the asp address is 'anded'.
---------------------------	-------------	---

Command Default	No default behaviour or values.	
------------------------	---------------------------------	--

Command Modes	Interface configuration	
----------------------	-------------------------	--

Command History	Release	Modification
	12.3(13)T	This command was introduced.

Usage Guidelines	The asp strip-ending-char command is applicable only when the asynchronous-generic protocol is specified on an interface by using a combination of the bstun protocol-group command run in global configuration mode and the bstun group command in the interface configuration mode. The command enables you to strip off the last character of the received packet. The command is mainly employed in real-time process control systems like the SCADA systems.
-------------------------	--

Examples	The following sample output shows that by using the asp strip-ending-char command, you can remove the last character in the buffer:
-----------------	--

```
Router(config)# asp strip-ending-char
Interface Virtual-Template2 is not in async mode
```

asp addr-offset

To configure an asynchronous port to send and receive polled asynchronous traffic through a block serial tunnel (BSTUN) tunnel, use the **asp addr-offset** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

asp addr-offset *address-offset*

no asp addr-offset

Syntax Description	<i>address-offset</i>	Location of the address byte within the polled asynchronous frame being received.
---------------------------	-----------------------	---

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.2 F	This command was introduced.

Usage Guidelines	<p>This command is used to specify the offset from the start of the frame where the address byte is located. This command only applies when the asynchronous-generic protocol has been specified on an interface using a combination of the bstun protocol-group global configuration command and the bstun group interface configuration command.</p>
-------------------------	--

Interfaces configured to run the asynchronous-generic protocol have their baud rate set to 9600 bps, use 8 data bits, no parity, 1 start bit, and 1 stop bit. If different line configurations are required, use the **rxspeed**, **txspeed**, **databits**, **stopbits**, and **parity** line configuration commands to change the line attributes.

The addresses of the alarm panels should be used in the address field of the **bstun route address** interface configuration command.

Examples	The following example specifies that the first byte in the polled asynchronous frame contains the device address:
-----------------	---

```
asp addr-offset 0
```

Related Commands

Command	Description
asp role	Specifies whether the router is acting as the primary end of the polled asynchronous link or as the secondary end of the polled asynchronous link connected to the serial interface, and whether the attached remote device is a security alarm control station.
asp rx-ift	Specifies a time period that, by expiring, signals the end of one frame being received and the start of the next.
bstun protocol-group	Defines a BSTUN group and the protocol it uses.
bstun route	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer.

asp role

To specify whether the router is acting as the primary end of the polled asynchronous link or as the secondary end of the polled asynchronous link connected to the serial interface and whether the attached remote device is a security alarm control station, use the **asp role** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

asp role {primary | secondary}

no asp role {primary | secondary}

Syntax Description

primary	Router is the primary end of the polled asynchronous link connected to the serial interface, and the attached remote devices are alarm panels.
secondary	Router is the secondary end of the polled asynchronous link connected to the serial interface, and the attached remote device is a security alarm control station.

Defaults

No default behavior or values

Command Modes

Interface configuration

Command History

Release	Modification
11.2 F	This command was introduced.

Usage Guidelines

This command enables the interface on which AppleTalk Session Protocol (ASP) is configured. Configure the interface connected to the alarm console as a secondary router and the interface connected to the alarm panel as a primary router.

The addresses of the alarm panels should be used in the address field of the **bstun route address** interface configuration command.

Examples

The following example specifies the router as the primary end of the link:

```
asp role primary
```

Related Commands

Command	Description
bstun route	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer.

asp rx-ift

To specify a time period that, by expiring, signals the end of one frame being received and the start of the next, use the **asp rx-ift** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

asp rx-ift *interframe-timeout*

no asp rx-ift

Syntax Description

<i>interframe-timeout</i>	Number of milliseconds between the end of one frame being received and the start of the next frame. The default timeout value is 40 milliseconds.
---------------------------	---

Defaults

The default timeout value is 40 ms.

Command Modes

Interface configuration

Command History

Release	Modification
11.2 F	This command was introduced.

Usage Guidelines

The interframe timeout is useful when different baud rates are used between the router and the alarm console or alarm panel. For example, you might set an interframe timeout of 6 ms if the polled asynchronous protocol is running at 9600 bps, but set the value to 40 ms if the protocol is running at 300 bps.

This command applies only when the asynchronous-generic protocol has been specified on an interface using a combination of the **bstun protocol-group** global configuration command and the **bstun group** interface configuration command.

Interfaces configured to run the asynchronous-generic protocol have their baud rate set to 9600 bps, use 8 data bits, no parity, 1 start bit, and 1 stop bit. If different line configurations are required, use the **rxspeed**, **txspeed**, **databits**, **stopbits**, and **parity** line configuration commands to change the line attributes.

The addresses of the alarm panels should be used in the address field of the **bstun route address** interface configuration command.

Examples

The following example sets the interframe timeout value to 6 ms because the polled asynchronous protocol is running at 9600 bps:

```
asp rx-ift 6
```

Related Commands	Command	Description
	asp addr-offset	Configures an asynchronous port to send and receive polled asynchronous traffic through a BSTUN tunnel.
	asp role	Specifies whether the router is acting as the primary end of the polled asynchronous link or as the secondary end of the polled asynchronous link connected to the serial interface, and whether the attached remote device is a security alarm control station.
	bstun protocol-group	Defines a BSTUN group and the protocol it uses.
	bstun route	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer.

asp strip-ending-char

To remove the last character from the received packet in the buffer that functions in the supervisory control data acquisition (SCADA) systems, use the **asp strip-ending-char** command in interface configuration mode. To restore the default value, use the **no** form of the command.

asp strip-ending-char

no asp strip-ending-char

Command Default No default behaviour or values.

Command Modes Interface configuration

Command History	Release	Modification
	12.3(13)T	This command was introduced.

Usage Guidelines The **asp strip-ending-char** command is applicable only when the asynchronous-generic protocol is specified on an interface by using a combination of the **bstun protocol-group** command in global configuration mode and the **bstun group** command in interface configuration mode. The command enables you to strip the last character of the received packet. The command is mainly employed in real-time process control systems, like the SCADA systems.

Examples The following sample output shows that by using the **asp strip-ending-char** command, you can remove the last character in the buffer:

```
Router(config)# asp strip-ending-char
```

bsc char-set

To specify the character set used by the Bisync support feature in this serial interface as either EBCDIC or ASCII, use the **bsc char-set** command in interface configuration mode. To cancel the character set specification, use the **no** form of this command.

```
bsc char-set {ascii | ebcdic}
```

```
no bsc char-set {ascii | ebcdic}
```

Syntax Description

ascii	ASCII character set.
ebcdic	EBCDIC character set. This character set is the default.

Defaults

EBCDIC

Command Modes

Interface configuration

Command History

Release	Modification
11.0	This command was introduced.

Examples

The following command specifies that the ASCII character set will be used:

```
bsc char-set ascii
```

bsc contention

To specify an address on a contention interface, use the **bsc contention** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc contention *address*

no bsc contention

Syntax Description	<i>address</i>	Address assigned to contention interface. The range is from 1 to 255. The default is 0x01.
--------------------	----------------	--

Defaults	The default address is 0x01 to accommodate backward compatibility to the previous point-to-point contention implementation.
----------	---

Command Modes	Interface configuration
---------------	-------------------------

Command History	Release	Modification
	11.0	This command was introduced.

Examples	The following command specifies address 20 on the remote device: <code>bsc contention 20</code>
----------	--

Related Commands	Command	Description
	bsc dial-contention	Specifies a router at the central site as a central router with dynamic allocation of serial interfaces.

bsc dial-contention

To specify a router at the central site as a central router with dynamic allocation of serial interfaces, use the **bsc dial-contention** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc dial-contention *timeout*

no bsc dial-contention

Syntax Description	<i>timeout</i>	Amount of time (in seconds) the interface can sit idle before it is returned to the idle interface pool. The range is from 2 to 30 seconds. The default is 5 seconds.
---------------------------	----------------	---

Defaults	5 seconds
-----------------	-----------

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.2 F	This command was introduced.

Usage Guidelines	A timeout value is configurable to ensure that an interface does not get locked out because of a device outage during sending of data.
-------------------------	--

Examples	The following command defines a dial-in interface at the central site with an idle timeout of 10 seconds: <code>bsc dial-contention 10</code>
-----------------	--

Related Commands	Command	Description
	bsc contention	Specifies an address on a contention interface.

bsc host-timeout

To detect deactivation of devices at the host, use the **bsc host-timeout** command in interface configuration mode. To cancel the configuration, use the **no** form of this command.

bsc host-timeout *interval*

no host-timeout *interval*

Syntax Description	<i>interval</i>	Timeout interval within which a poll or select for a control unit must be received. If this interval expires, the remote router is sent a teardown peer signal. The range is from 30 to 3000 deciseconds. The default is 600 deciseconds (60 seconds).
---------------------------	-----------------	--

Defaults	The default interval is 600 deciseconds (60 seconds).
-----------------	---

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.2 F	This command was introduced.

Usage Guidelines	This command is used to detect deactivation of devices at the host. If the host is told to deactivate or not poll a device, time will be required for the signal to propagate the network and get the remote end from polling. The timeout can be used to fine-tune the delay in detecting the host outage. The remote peer will stop polling the control unit that has timed out in the interval one to two times the configured timeout value.
-------------------------	--

Examples	The following example shows how to configure a timeout of 500 deciseconds:
-----------------	--

```
bsc host-timeout 500
```

Related Commands	Command	Description
	bsc secondary	Specifies that the router is acting as the secondary end of the Bisync link connected to the serial interface, and the attached remote device is a Bisync control station.
	bstun group	Specifies the BSTUN group to which the interface belongs.
	bstun protocol-group	Defines a BSTUN group and the protocol it uses.

bsc pause

To specify the interval, to the tenth of a second, between starts of the polling cycle, use the **bsc pause** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc pause *time*

no bsc pause *time*

Syntax Description	<i>time</i>	Interval in tenths of a second. The default value is 3 (that is, 3 tenths of a second, or 300 milliseconds). The maximum time is 1000 tenths of a second (100 seconds).
---------------------------	-------------	---

Defaults	3 tenths of a second (300 milliseconds)
-----------------	---

Command Modes	Interface configuration
----------------------	-------------------------

Command History	<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.				

Examples	<p>The following command sets the interval to 20 tenths of a second (2 seconds):</p> <pre>bsc pause 20</pre>
-----------------	--

bsc poll-timeout

To specify the timeout, in tenths of a second, for a poll or select sequence, use the **bsc poll-timeout** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc poll-timeout *time*

no bsc poll-timeout *time*

Syntax Description	<i>time</i>	Time in tenths of a second. The default value is 30 (that is, 30 tenths of a second, or 3 seconds).
---------------------------	-------------	---

Defaults	30 tenths of a second (3 seconds)
-----------------	-----------------------------------

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.0	This command was introduced.

Examples	The following command sets the interval to 20 tenths of a second (2 seconds): <pre>bsc poll-timeout 20</pre>
-----------------	---

bsc primary

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

bsc primary

no bsc primary

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines The Bisync support feature in the serial interface uses the address of the incoming encapsulation for reply.

Examples The following example specifies the router as the primary role:

```
bsc primary
```

Related Commands	Command	Description
	bstun route	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer.

bsc retries

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

bsc retries *retries*

no bsc retries *retries*

Syntax Description	<i>retries</i>	Number of retries before a device fails. The default is 5.
--------------------	----------------	--

Defaults	Five retries
----------	--------------

Command Modes	Interface configuration
---------------	-------------------------

Command History	Release	Modification
	11.0	This commands was introduced.

Examples	The following command sets the retry count to 10: <code>bsc retries 10</code>
----------	--

bsc secondary

To specify that the router is acting as the secondary end of the Bisync link connected to the serial interface, and the attached remote device is a Bisync control station, use the **bsc secondary** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc secondary

no bsc secondary

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Interface configuration

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines The Bisync support feature in this serial interface uses the address of the poll or selection block in the framing encapsulation. It also generates an end of transmission (EOT) frame preceding each Bisync poll and selection.

Examples The following example specifies the router as the secondary role:

```
bsc secondary
```

Related Commands	Command	Description
	bstun route	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer.

bsc servlim

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

bsc servlim *servlim-count*

no bsc servlim *servlim-count*

Syntax Description	<i>servlim-count</i>	Number of cycles. The range is from 1 to 50. The default is 3.
---------------------------	----------------------	--

Defaults	Three cycles
-----------------	--------------

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.0	This command was introduced.

Examples	The following command sets the number of cycles to 2: <pre>bsc servlim 2</pre>
-----------------	---

bsc spec-poll

To set specific polls, rather than general polls, used on the host-to-router connection, use the **bsc spec-poll** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

bsc spec-poll

no spec-poll

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

Usage Guidelines Use the **bsc spec-poll** command when a router is connected to a host, and only when that host issues specific polls rather than general polls. Tandem hosts that poll ATM cash machines are typically configured to use specific polls rather than general polls.

Configuring a downstream (control-unit/device connected) router to support specific polling has no effect.

Examples The following commands configure serial interface 0 to use specific poll:

```
interface serial 0
description Connection to host.
encapsulation bstun
bstun group 1
bsc secondary
bsc spec-poll
bsc char-set ebcidic
bstun route all tcp 10.10.14.122
```

bstun group

To specify the block serial tunnel (BSTUN) group to which the interface belongs, use the **bstun group** command in interface configuration mode. To remove the interface from the BSTUN group, use the **no** form of this command.

bstun group *group-number*

no bstun group *group-number*

Syntax Description	<i>group-number</i>	BSTUN group to which the interface belongs.
---------------------------	---------------------	---

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	Interface configuration
----------------------	-------------------------

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines	Each BSTUN-enabled interface must be placed in a BSTUN group that was previously defined by the bstun protocol-group command. Packets travel only between BSTUN-enabled interfaces that are in the same group.
-------------------------	---

Examples	The following example specifies that serial interface 1 belongs to the previously defined protocol group 1:
-----------------	---

```
interface serial 1
 encapsulation bstun
 bstun group 1
```

Related Commands	Command	Description
	bstun protocol-group	Defines a BSTUN group and the protocol it uses.
encapsulation bstun	Configures BSTUN on a particular serial interface.	

bstun keepalive-count

To define the number of times to attempt a peer connection before declaring the peer connection to be down, use the **bstun keepalive-count** command in global configuration mode. To cancel the definition, use the **no** form of this command.

bstun keepalive-count *count*

no bstun keepalive-count

Syntax Description	<i>count</i>	Number of connection attempts. The range is from 2 to 10 retries.
---------------------------	--------------	---

Defaults	No default behavior or values	
-----------------	-------------------------------	--

Command Modes	Global configuration	
----------------------	----------------------	--

Command History	Release	Modification
	11.1	This command was introduced.

Usage Guidelines	The following example sets the number of times to retry a connection to a peer to 4:	
	<code>bstun keepalive-count 4</code>	

Related Commands	Command	Description
	bstun remote-peer-keepalive	Enables detection of the loss of a peer.

bstun lisnsap

To configure a service access point (SAP) on which to listen for incoming calls, use the **bstun lisnsap** command in global configuration mode. To cancel the SAP on which to listen, use the **no** form of this command.

bstun lisnsap *sap-value*

no bstun lisnsap

Syntax Description	<i>sap-value</i>	SAP on which to listen for incoming calls. The default is 04.
---------------------------	------------------	---

Defaults	The default SAP value is 04.
-----------------	------------------------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	11.2 F	This command was introduced.

Usage Guidelines	Changes to the bstun lisnsap command configuration will not take effect until after the router has been reloaded.
-------------------------	--

Examples	The following example shows how to configure SAP for listening: <pre>bstun lisnsap</pre>
-----------------	---

Related Commands	Command	Description
	bstun route (Frame Relay)	Defines how frames will be forwarded from a BSTUN interface to a remote BSTUN peer over Frame Relay.
	frame-relay map bstun	Configures BSTUN over Frame Relay for passthrough.
	frame-relay map llc2	Configures BSTUN over Frame Relay when using Bisync local acknowledgment.

bstun peer-map-poll

To map the state of the peer to polling, use the **bstun peer-map-poll** command in global configuration mode. To disable mapping of the peer state to polling and map to the received status messages, use the **no** form of this command.

bstun peer-map-poll

no bstun peer-map-poll

Syntax Description

This command has no arguments or keywords.

Defaults

The received status messages are mapped to polling.

Command Modes

Global configuration

Command History

Release	Modification
12.2(13)T	This command was introduced.

Usage Guidelines

Use the **bstun peer-map-poll** command to map the peer state to polling. If you configure this command, Bisync-to-IP protocol (BIP) activates polling when the BIP tunnel becomes active and stops polling when the tunnel connection is terminated. When the peer state-to-polling is not mapped, BIP waits for the host to issue an "active" status message across the BIP tunnel before polling the Automated Teller Machine (peer) device and polling is stopped when an "inactive" status message is received across the tunnel or the tunnel connection is terminated.

Related Commands

Command	Description
bstun peer-name	Enables the BSTUN function.
bstun reconnect-interval	Set the amount of time for the system to wait before trying to reconnect to a peer.
show bstun	Displays the current status of STUN connections.

bstun peer-name

To enable the block serial tunnel (BSTUN) function, use the **bstun peer-name** command in global configuration mode. To disable the function, use the **no** form of this command.

bstun peer-name *ip-address*

no bstun peer-name *ip-address*

Syntax Description	<i>ip-address</i>	Address by which this BSTUN peer is known to other BSTUN peers that are using the TCP transport.
---------------------------	-------------------	--

Defaults	No default behavior or values
-----------------	-------------------------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines	The IP address defines the address by which this BSTUN peer is known to other BSTUN peers that are using the TCP transport. If this command is unconfigured or the no form of this command is specified, all BSTUN routing commands with IP addresses are deleted. BSTUN routing commands without IP addresses are not affected by this command.
-------------------------	---

Examples	The following example enables the BSTUN function:
-----------------	---

```
bstun peer-name 10.10.254.201
```

Related Commands	Command	Description
	bstun protocol-group	Defines a BSTUN group and the protocol it uses.

bstun protocol-group

To define a block serial tunnel (BSTUN) group and the protocol it uses, use the **bstun protocol-group** command in global configuration mode. To delete the BSTUN group, use the **no** form of this command.

bstun protocol-group *group-number protocol*

no bstun protocol-group *group-number protocol*

Syntax Description

<i>group-number</i>	BSTUN group number. Valid numbers are decimal integers in the range from 1 to 255.
<i>protocol</i>	Block serial protocol, selected from the following: <ul style="list-style-type: none"> • adplex • adt-poll-select • adt-vari-poll • async-generic • bsc • bsc-local-ack • diebold • mdi

Defaults

No default behavior or values

Command Modes

Global configuration

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

Interfaces configured to run the Adplex protocol have their baud rate set to 4800 bps, use even parity, 8 data bits, 1 start bit, and 1 stop bit.

Interfaces configured to run the adt-vari-poll and adt-poll-select protocols have their baud rate set to 600 bps, use even parity, 8 data bits, 1 start bit, and 1.5 stop bits. If different line configurations are required, use the **rxspeed**, **txspeed**, **databits**, **stopbits**, and **parity** line configuration commands to change the line attributes.

Interfaces configured to run the asynchronous-generic protocol have their baud rate set to 9600 bps, use no parity, 8 data bits, 1 start bit, and 1 stop bit. If different line configurations are required, use the **rxspeed**, **txspeed**, **databits**, **stopbits**, and **parity** line configuration commands to change the line attributes.

Interfaces configured to run the mdi protocol have their baud rate set to 600 bps, use even parity, 8 data bits, 1 start bit, and 1.5 stop bits. If different line configurations are required, use the **rxspeed**, **txspeed**, **databits**, **stopbits**, and **parity** line configuration commands to change the line attributes. The mdi protocol allows alarm panels to be sent to the MDI alarm console.

Examples

The following example defines BSTUN group 1, specifies that it uses the Bisync protocol, and indicates that frames will be locally acknowledged:

```
bstun protocol-group 1 bsc-local-ack
```

Related Commands

Command	Description
bstun group	Specifies the BSTUN group to which the interface belongs.

bstun reconnect-interval

To set the amount of time for the system to wait before trying to reconnect to a peer, use the **bstun reconnect-interval** command in global configuration mode. To return to the default setting, use the **no** form of the command.

bstun reconnect-interval *time-value*

no bstun reconnect-interval *time-value*

Syntax Description	<i>time-value</i>	Amount of time (in seconds). The range is from 1 to 600 seconds. The default is 60 seconds.
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Defaults	60 seconds
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Command Modes	Global configuration
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Command History	Release	Modification
	12.2(4)T	This command was introduced.

Usage Guidelines	This command applies only to Block Serial Tunneling (BSTUN) route Bisync-to-IP (BIP) connections that are defined as active.
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Examples	In the following example, the system is configured to wait 300 seconds before trying to reestablish a peer connection:
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```
bstun reconnect-interval 300
```

Related Commands	Command	Description
	bstun route (BIP)	Specifies how frames will be forwarded from a BSTUN interface to a remote host over an IP network.

bstun remote-peer-keepalive

To enable detection of the loss of a peer, use the **bstun remote-peer-keepalive** command in global configuration mode. To disable detection, use the **no** form of this command.

bstun remote-peer-keepalive *seconds*

no bstun remote-peer-keepalive

Syntax Description	<i>seconds</i>	Keepalive interval, in seconds. The range is from 1 to 300 seconds. The default is 30 seconds.
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Defaults	30 seconds
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Command Modes	Global configuration
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Command History	Release	Modification
	11.1	This command was introduced.

Examples In the following example, the remote peer keepalive interval is set to 60 seconds:

```
bstun remote-peer-keepalive 60
```

Related Commands	Command	Description
	bstun keepalive-count	Defines the number of times to attempt a peer connection before declaring the peer connection to be down.

bstun route

To define how frames will be forwarded from a block serial tunnel (BSTUN) interface to a remote BSTUN peer, use the **bstun route** command in interface configuration mode. To cancel the definition, use the **no** form of this command.

```
bstun route {all | address address-number} {tcp ip-address | interface serial number}
```

```
no bstun route {all | address address-number} {tcp ip-address | interface serial number}
```

Syntax Description

all	All BSTUN traffic received on the input interface is propagated, regardless of the address contained in the serial frame.
address	Serial frame that contains a specific address is propagated.
<i>address-number</i>	Poll address, a hexadecimal number from 01 to FF (but not all values are valid). The reply address to be used on the return leg is calculated from the configured poll address.
tcp	TCP encapsulation is used to propagate frames that match the entry.
<i>ip-address</i>	IP address of the remote BSTUN peer.
interface serial	High-level data link control (HLDC) encapsulation is used to propagate the serial frames.
<i>number</i>	Serial line to an appropriately configured router on the other end.

Defaults

No default behavior or values

Command Modes

Interface configuration

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

When the ADplex protocol is specified in the **bstun protocol-group** command, ADplex device addresses are limited to the range from 1 to 127 because ADplex alarm panels invert the device address in the ADplex frame when responding to alarm console commands.

When the adt-poll-select protocol is specified in the **bstun protocol-group** command, routes for specific addresses cannot be specified on the downstream router (connected to the alarm panel) because no address field is provided within frames that are sent back to the alarm console. The only way to route traffic back to the alarm console is to use the **bstun route all** form of the **bstun route** command. This is also true for the diebold protocol and any other protocol supported by the asynchronous-generic protocol group that does not include a device address in the frame.

When the adt-vari-poll protocol is specified in the **bstun protocol-group** command, ADT device addresses are limited to the range from 0 to 255, and address 0 is reserved for use as a broadcast address for adt-vari-poll only. If address 0 is specified in the **bstun route address** form of the **bstun route** command, the address is propagated to all configured BSTUN peers.

It is possible to use both the **all** and the **address** keywords on different **bstun route** commands on the same serial interface. When this is done, the **address** specifications take precedence; if none of these match, then the **all** specification is used to propagate the frame.

Examples

In the following example, all BSTUN traffic received on serial interface 0 is propagated, regardless of the address contained in the serial frame:

```
bstun route all interface serial 0
```

bstun route (BIP)

To specify how frames will be forwarded from a Block Serial Tunneling (BSTUN) interface to a remote host over an IP network, use the **bstun route** command in interface configuration mode. To cancel the specification, use the **no** form of this command.

```
bstun route {address cu-address} {bip ip-address | dns-hostname} {fport port-number} {lport
port-number | passive} [tcp-queue-max] [transparent]
```

```
no bstun route {address cu-address} {bip ip-address} {fport port-number} {lport port-number |
passive} [tcp-queue-max] [transparent]
```

Syntax Description

address	Propagates serial frames that contain a specific address.
<i>cu-address</i>	Control unit poll address for the Bisync end station. This address is a hexadecimal number from 01 to FF.
bip	Specifies that the Bisync-to-IP (BIP) translation form of TCP is to be used for propagating the frames that match the entry.
<i>ip-address</i>	Specifies the IP address of the remote BIP host computer.
<i>dns-hostname</i>	Specifies the domain name server hostname of the remote BIP host computer.
fport	Indicates that a foreign or remote port number is either being listened on or connected from.
<i>port-number</i>	Specifies the foreign port number. The port number range is from 1025 to 65535.
lport	Indicates that a local port is being sourced from this router, and represents a specific control unit.
<i>port-number</i>	Specifies a local port number. The port number range is from 1025 to 65535.
passive	Indicates that an outbound connection will not be attempted. Instead, the system listens on port number 1963 for any connection requests from the host computer.
tcp-queue-max	(Optional) Sets the maximum size of the outbound TCP queue. The default is 100 packets.
transparent	(Optional) Specifies the method of sending text on a defined route. The default is nontransparent bisync text.

Defaults

The default is 100 packets.
The default is nontransparent bisync text.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(4)T	This command was introduced.

Release	Modification
12.3(4)T	The argument <i>dns-hostname</i> was added.
12.4T	This command was integrated into Cisco IOS Release 12.4T.

Usage Guidelines

The remote or foreign IP address and port number are required for all connection types.

The user selects the connection type by either configuring a unique local port or by using the **passive** keyword. If the **passive** keyword is used, the foreign port must be unique and the system does not attempt an outbound connection but instead listens on port number 1963 for any connection requests from the host computer. If the **active** keyword is configured (that is, if a local port is configured), the system attempts an outbound connection but also listens for the connection to be established inbound.

The *cu-address* argument is the control unit poll address for the Bisync end station. This address is a hexadecimal number from 01 to FF. Valid addresses vary depending on the setting of the **bsc char-set** interface configuration command.

The TCP queue length, an optional configuration parameter, defaults to 100 packets.

By default, the method of sending text on a defined route is to use nontransparent Bisync text. To send in transparent Bisync text, specify the optional **transparent** keyword.

Examples

In the following example, BSTUN traffic with the control unit address C5 is routed to and from the host computer specified by the IP address 192.168.60.100:

```
bstun route address C5 bip 192.168.60.100 fport 2000 lport 3005
```

Related Commands

Command	Description
bstun group	Specifies the BSTUN group to which the interface belongs.
bstun peer-name	Enables the BSTUN function.
bstun protocol-group	Defines a BSTUN group and the protocol it uses.

bstun route (Frame Relay)

To define how frames will be forwarded from a Block Serial Tunneling (BSTUN interface to a remote BSTUN peer over Frame Relay, use the **bstun route** command in interface configuration mode. To cancel the definition, use the **no** form of this command.

bstun route { **all** | **address** *cu-address* } **interface serial** *number* [**dcli** *dcli* *rsap*] [**priority** *priority*]

no bstun route { **all** | **address** *cu-address* } **interface serial** *number* [**dcli** *dcli* *rsap*] [**priority** *priority*]

Syntax Description		
all		All BSTUN traffic received on the input interface is propagated, regardless of the address contained in the serial frame.
address		Serial frames that contain a specific address are propagated.
<i>cu-address</i>		Control unit address for the Bisync end station.
interface serial <i>number</i>		Specify a serial interface on which Frame Relay encapsulation is used to propagate serial frames.
dcli <i>dcli</i>		(Optional) Data-link connection identifier to be used on the Frame Relay interface.
<i>rsap</i>		(Optional) Remoteservice access point (SAP), to be used when initiating an Logical Link Control (LLC)2 session. This argument is configurable only if the interface group number supports local acknowledgment.
priority <i>priority</i>		(Optional) Priority port to be used for this LLC2 session. Configurable only if the interface group number supports local acknowledgment.

Defaults No default behavior or values

Command Modes Interface configuration

Command History	Release	Modification
	11.1	This command was introduced.

Examples The following example shows how to configure BSTUN over Frame Relay. All BSTUN traffic is propagated to serial interface 0 regardless of the address contained in the serial frame:

```
bstun route all interface serial 0 dcli 16
```