



# AO/DI Commands

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This chapter describes the commands specific to configuring an ISDN D channel to transport X.25 traffic using Always On/Dynamic ISDN (AO/DI).

Refer to the “Configuring X.25 on ISDN” chapter of the *Dial Solutions Configuration Guide* and “X.25 on ISDN Commands” in the *Dial Solutions Command Reference* for additional information about configuring X.25 over ISDN.

## ppp bap number

To specify a local telephone number that peers can dial to establish a multilink bundle, use the **ppp bap number** interface configuration command. To remove a previously configured number, use the **no** form of this command.

```
ppp bap number { default phone-number | secondary phone-number | prefix prefix-number }  
no ppp bap number { default phone-number | secondary phone-number |  
  prefix prefix-number }  
  
ppp bap number { format national | subscriber }  
no ppp bap number { format national | subscriber }
```

### Syntax Description

<b>default</b> <i>phone-number</i>	Primary (base) phone number for the interface and the number that can be used for incoming dial calls.
<b>secondary</b> <i>phone-number</i>	Telephone number for the second B channel. Applies only to BRI interfaces that have a different number for each B channel or to dialer interfaces that are BRIs.
<b>prefix</b> <i>prefix-number</i>	Prefix number for the PPP BAP phone number.
<b>format national</b>   <b>subscriber</b>	Format for the primary phone number to be dialed should be either national or subscriber where the number of digits assigned to the number is as follows: <ul style="list-style-type: none"><li>• 10-digit number for a national format.</li><li>• 7-digit number for a subscriber format.</li></ul>

### Default

No base number is provided.

### Command Mode

Interface configuration

### Usage Guidelines

The **ppp bap number** command first appeared in Cisco IOS Release 11.3. The **prefix** and **format** keywords first appeared in Cisco IOS Release 11.3 T.

Use this command to supply a local default number to be exchanged between peers in order to establish a multilink bundle.

Use the **prefix** keyword on the AO/DI client side to specify what will precede any number dialed to a multilink peer. This command is used by the client side for dialing instructions when communicating with the server. For example, the client issues a call request to the server whereby the server issues a call response which includes the dialing number the client should use and the format this number should be in (national or subscriber). The client then dials the number supplied by the server, preceded by any prefix information contained in the **ppp bap number prefix** command. Figure 5 shows an overview about the information exchange between the client and the server.

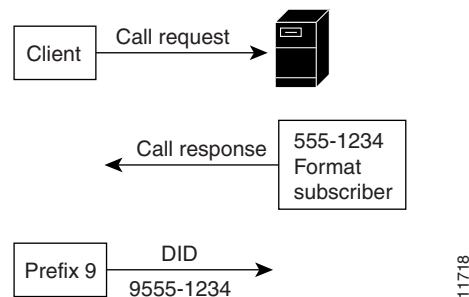
Use the **format** keyword on the AO/DI server side to specify how many digits should be returned by BAP. BAP will return the numbers based on either a national or subscriber format. The value that is returned is preceded by the prefix before dialing occurs. For example, if the **format national** keywords are configured, then the national format (which is equivalent to 10 digits) is returned by BAP (during BAP negotiation) from the server.

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**Note** The **ppp bap number prefix** and **ppp bap number format** keyword options cannot be combined to a single-string command line; they must be entered in two separate command strings.

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**Figure 5 Client and Server Response Sequence**



Use the **format** keyword its used on the server side to specify how many digits should be returned by BAP. BAP will return the numbers based on either a national or subscriber format. The value that is returned is preceded by the prefix before dialing. For example, if the **format national** keywords are configured, then the national format (which is equivalent to 10 digits) is returned by BAP (during BACP negotiation), from the server to the client.

This command is applicable on both the dialer interface and the individual physical interfaces.

## Examples

In the following example, the AO/DI client uses a **ppp bap prefix** value of 9, which indicates that the dialed number of 5551234 will be preceded by a 9. The number that is actually dialed is 95551234. The AO/DI server uses a subscriber format, which indicates that when the client asks the server for the numbers to dial, BAP will return 7-digits.

### Client router

```
interface dialer1
 ppp bap number prefix 9
```

### Server Router

```
interface dialer1
 ppp bap number format subscriber
 ppp bap number default 5555678
```

In the following example, the AO/DI client uses a **ppp bap prefix** value of 1, which indicates that the dialed number of 5551234 will be preceded by a 1. The number that is actually dialed is 19195555678 because the server is using a national format, and BAP therefore, returns 10-digits.

### Client Router

```
interface dialer1
  ppp bap number prefix 1
```

### Server Router

```
interface dialer1
  ppp bap number format national
  ppp bap number default 9195555678
```

## ppp multilink idle-link

To configure the PPP Multilink bundle so that the first link member enters into “receive-only” mode when an additional B channel is added, use the **ppp multilink idle-link** interface configuration command. To remove this functionality, use the **no** form of this command.

```
ppp multilink idle-link  
no ppp multilink idle-link
```

### Syntax Description

This command has no keywords or arguments.

### Default

Multilink idle-link is not set.

### Command Mode

Interface configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.3 T.

Use this command to ensure that the primary link in the AO/DI bundle enters “receive-only” mode as soon as the first additional B channel is added to the bundle. Additional member links are added to the Multilink PPP bundle in order to increase traffic throughput and are disconnected once the traffic load is reduced. During this timeframe, the X.25 SVC remains active. The **dialer load-threshold** value determines the traffic threshold limits for the bundle.

### Example

The following example configures the interface (dialer interface 1) to add additional links to the MLP bundle once the traffic load on the primary link is reached:

```
interface dialer1  
  ppp multilink idle-link
```

## x25 aodi

To enable the AO/DI client on an interface, use the **x25 aodi** interface configuration command. To remove AO/DI client functionality, use the **no** form of this command.

**x25 aodi**  
**no x25 aodi**

### Syntax Description

This command has no arguments or keywords.

### Default

AO/DI client is not enabled.

### Command Mode

Interface configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.3 T.

Use this command to enable the AO/DI client on an interface.

### Example

The following example enables the AO/DI client on the interface running X.25, using the **x25 aodi** command:

```
interface bri0
  isdn x25 dchannel
  isdn x25 static-tei 8
interface bri0:0
  x25 aodi
  x25 address 12135551234
  x25 htc 4
  x25 win 3
  x25 wout 3
  x25 map ppp 12135556789 interface dialer 1
```

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**Note** Configuring the BRI interface with the **isdn x25 dchannel** command creates a configurable interface (bri 0:0) for other necessary X.25 commands. Refer to Cisco IOS Release 12.0 *Dial Solutions Configuration Guide and Command Reference* for additional information about this command.

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## x25 map ppp

To enable a PPP session over the X.25 protocol, use the **x25 map ppp** interface configuration command. To remove a prior mapping, use the **no** form of this command.

```
x25 map ppp x121-address interface cloning-interface no-outgoing
no x25 map ppp x121-address interface cloning-interface no-outgoing
```

### Syntax Description

<b>x121 address</b>	The X.121 address as follows: <ul style="list-style-type: none"> <li>• Client side—The calling number.</li> <li>• Server side—The called number.</li> </ul>
<b>interface cloning-interface</b>	The interface to be used for cloning the configuration.
<b>no-outgoing</b>	Ensures that the X.25 map does not originate calls.

### Default

Disabled

### Command Mode

Interface configuration

### Usage Guidelines

This command first appeared in Cisco IOS Release 11.3 T.

Use **x25 map ppp** command to allow a PPP session to run over X.25.

The **interface** keyword refers to the interface that will be used to clone the configuration.

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**Note** For the **x25 map** command used in standard X.25 implementations, refer to the *Wide-Area Networking Command Reference*.

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### Client Example

The following example enables the AO/DI client on the interface and configures the D channel (BRI interface 0:0) with the x25 map statement in order to allow PPP sessions over X.25 encapsulation with the configured AO/DI server:

```
interface BRI0:0
  x25 address 16193368208
  x25 aodi
  x25 htc 4
  x25 win 3
  x25 wout 3
  x25 map ppp 16193368209 interface dialer 1
```

### Server Example

The following example enables the AO/DI server to receive calls from the AO/DI client and configures the D channel (BRI0:0) with the x25 map statement which allows PPP sessions over X.25 encapsulation with the configured AO/DI client. The **no-outgoing** option is used with the x.25 map command since the AO/DI server is receiving, versus initiating, calls.

```
interface BRI0:0
x25 address 16193368209
  x25 htc 4
  x25 win 3
  x25 wout 3
x25 map ppp 16193368208 interface dialer 1 no-outgoing
```

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**Note** Configuring the BRI interface with the **isdn x25 dchannel** command creates a configurable interface (bri 0:0).

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