debounce-time rai

To configure a timer that prevents E1 or STM-1 trunk lines from being torn down in response to brief line outages, use the **debounce-time rai** command in controller configuration mode. To restore the default timer value, use the **no** form of this command.

debounce-time rai *milliseconds*

no debounce-time rai *milliseconds*

Syntax Description

milliseconds	Time, in milliseconds (ms), to wait before tearing down an E1 or STM-1 line after receiving a Receive Alarm Indication (RAI) signal. **AS5800** • E1 lines—Valid values range from 500 to 7000 ms. The value entered must be a multiple of 50. The default value is 500 ms. **AS5850** • E1 lines—Valid values range from 1000 to 7000 ms. The value entered must be a multiple of 50. The default value is 1000 ms. • STM-1 lines—Valid values range from 2000 to 7000 ms. The value entered must be a multiple of 50. The default value is 2000 ms.

Command Default

The default value for the timer is used:

- E1 lines on the AS5800—500 ms
- E1 lines on the AS5850—1000 ms
- STM-1 lines on the AS5850—2000 ms

Command Modes

Controller configuration

Command History

Release	Modification
12.2(2)XB5	This command was introduced on the Cisco AS5800 and the route switch controller (RSC) Cisco AS5850.
12.2(11)T	Support for this command on the Cisco AS5800 and the RSC Cisco AS5850 was integrated into Cisco IOS Release 12.2(11)T.
12.3(7)XI	Support for this command was added for the enhanced RSC (ERSC) Cisco AS5850.
12.3(4)T	Support for the ERSC Cisco AS5850 was integrated into Cisco IOS Release 12.3(4)T.

Usage Guidelines

Use the **debounce-time rai** command to configure a timer that allows Awaiting Info (I) calls to ignore brief trunk outages. When a Receive Alarm Indication (RAI) signal is received, the access server will wait the configured interval before tearing down the line.

Examples

The following example configures an E1 controller to wait for 5250 ms before tearing down an E1 trunk line:

```
Router(config)# controller e1 1/0/0
Router(config-controller)# debounce-time rai 5250
```

Related Commands

Command	Description
controller	Configures a T1, E1, or J1 controller and enters controller configuration mode.

description (interface)

To add a description to an interface configuration, use the **description** command in interface configuration mode. To remove the description, use the **no** form of this command.

description *string*

no description

Syntax Description

string	Comment or a description to help you remember what is attached to this interface. This string is limited to 238 characters.

Command Default No description is added.

Command Modes Interface configuration

Command History

Release	Modification
9.21	This command was introduced.

Usage Guidelines The **description** command is meant solely as a comment to be put in the configuration to help you remember what certain interfaces are used for. The description appears in the output of the following EXEC commands: **more nvram:startup-config**, **show interfaces**, and **more system:running-config**.

Examples The following example shows how to add a description for a T1 interface:

```
interface serial 0
 description Fractional T1 line to remote office -- 128 kbps
```

Related Commands

Command	Description
more nvram:startup-config	Displays the startup configuration file contained in NVRAM or specified by the CONFIG_FILE environment variable.
more system:running-config	Displays the running configuration.
show interfaces	Displays statistics for all interfaces configured on the router or access server.

dialer

To specify the dialer interface that an accept-dialout virtual private dialup network (VPDN) subgroup will use to dial out calls, use the **dialer** command in accept-dialout configuration mode. To remove the dialer interface from the accept-dialout VPDN subgroup, use the **no** form of this command.

dialer *dialer-interface*

no dialer

Syntax Description

dialer-interface	Number of the dialer interface.

Command Default Disabled

Command Modes Accept-dialout configuration

Command History

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

Usage Guidelines You must first enable Layer 2 Tunneling Protocol (L2TP) on the accept-dialout VPDN subgroup by using the **protocol l2tp** command before you can enable the **dialer** command. Removing the **protocol** command will remove the **dialer** command from the accept-dialout subgroup.

You can only specify one dialer per accept dialout group. Configuring a second **dialer** command will replace the first **dialer** command.

Examples The following example creates an accept-dialout VPDN subgroup that uses dialer interface 2:

```
VPDN-group 1
 accept dialout
  protocol l2tp
  dialer 2
 terminate-from hostname yourhost
```

Related Commands

Command	Description
accept-dialout	Accepts requests to tunnel L2TP dial-out calls and creates an accept-dialout VPDN subgroup.
protocol (VPDN)	Specifies the L2TP that the VPDN subgroup will use.
terminate-from	Specifies the host name of the remote LAC or LNS that will be required when accepting a VPDN tunnel.

dialer callback-secure

To enable callback security, use the **dialer callback-secure** command in interface configuration mode. To disable callback security, use the **no** form of this command.

dialer callback-secure

no dialer callback-secure

Syntax Description This command has no arguments or keywords.

Command Default Disabled

Command Modes Interface configuration

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines This command affects those users that are not authorized to be called back through configuration of the **dialer callback-server** command. If the username (the *host-name* argument in the **dialer map** command) is not authorized for callback, the call will be disconnected if the **dialer callback-secure** command is configured.

Examples The following partial example configures BRI0 with the commands required to make it function as the callback server on the shared network. Callback security is enabled on BRI0, such that any user other than user1 will be disconnected and not called back.

```
interface BRI0
 ip address 172.19.1.9 255.255.255.0
 encapsulation ppp
 dialer callback-secure
 dialer enable-timeout 2
 dialer map ip 172.19.1.8 name user1 class dial1 81012345678901
 dialer-group 1
 ppp callback accept
 ppp authentication chap
!
map-class dialer dial1
 dialer callback-server username
```

Related Commands

Command	Description
dialer callback-server	Enables an interface to make return calls when callback is successfully negotiated.
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.
map-class dialer	Defines a class of shared configuration parameters associated with the **dialer map** command for outgoing calls from an ISDN interface and for PPP callback.
ppp callback (DDR)	Enables a dialer interface that is not a DTR interface to function either as a callback client that requests callback or as a callback server that accepts callback requests.

dialer callback-server

To enable an interface to make return calls when callback is successfully negotiated, use the **dialer callback-server** command in interface configuration mode. To disable return calls, use the **no** form of this command.

dialer callback-server [**username** | **dialstring**]

no dialer callback-server

Syntax Description

username	(Optional) Looks up the authenticated host name in a **dialer map** command. This is the default.
dialstring	(Optional) Identifies the return call during callback negotiation.

Command Default

Disabled. The default keyword is **username**.

Command Modes

Interface configuration

Command History

Release	Modification
11.0	This command was introduced.

Examples

The following partial example configures BRI 0 to function as the callback server on the shared network:

```
interface BRI0
 ip address 172.19.1.9 255.255.255.0
 encapsulation ppp
 dialer callback-secure
 dialer enable-timeout 2
 dialer map ip 172.19.1.8 name mymap class dial1 81012345678901
 dialer-group 1
 ppp callback accept
 ppp authentication chap
!
map-class dialer dial1
 dialer callback-server username
```

Related Commands

Command	Description
dialer callback-secure	Enables callback security.
dialer enable-timeout	Sets the length of time an interface stays down after a call has completed or failed and before the interface is available to dial again.
dialer hold-queue	Allows interesting outgoing packets to be queued until a modem connection is established.
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.

Command	Description
map-class dialer	Defines a class of shared configuration parameters associated with the dialer map command for outgoing calls from an ISDN interface and for PPP callback.
ppp callback (DDR)	Enables a dialer interface that is not a DTR interface to function either as a callback client that requests callback or as a callback server that accepts callback requests.

dialer called

To configure dial-on-demand routing (DDR) to perform DNIS-plus-ISDN-subaddress binding for dialer profile interfaces, use the **dialer called** command in dial-on-demand routing configuration mode. To disable DNIS-plus-ISDN-subaddress binding, use the **no** form of this command.

dialer called *DNIS*:*subaddress*

no dialer called *DNIS*:*subaddress*

Syntax Description

DNIS:*subaddress*	Dialed Number Identification Service or the called party number, a colon, and the ISDN subaddress.

Command Default

No default behavior or values.

Command Modes

Dial-on-demand routing configuration

Command History

Release	Modification
12.0(4)T	This command was introduced.

Usage Guidelines

If you have more than one DNIS-plus-ISDN-subaddress number to configure under the same dialer profile interface, you can configure multiple **dialer called** commands.

The parser accepts a **dialer called** command with a DNIS and without the subaddress; however, the call will fail. For a successful call, enter the DNIS, a colon, and the ISDN subaddress after the **dialer called** command.

Examples

The following example configures a dialer profile for a receiver with DNIS 12345 and ISDN subaddress 6789:

```
dialer called 12345:6789
```

Related Commands

Command	Description
dialer caller	Configures caller ID screening and, optionally, enables ISDN caller ID callback for legacy DDR or the dialer profiles DDR feature.

dialer caller

To configure caller ID screening for a dialer rotary group interface or to bind an incoming call to a particular dialer profile, and, optionally, to enable ISDN caller ID callback, use the **dialer caller** command in interface configuration mode. To disable this feature, use the **no** form of this command.

dialer caller *number* [**callback**]

no dialer caller *number* [**callback**]

Syntax Description

number	Remote telephone number for which to screen. Use a lower case letter x to represent a single "don't care" digit. The maximum length of each number is 25 characters.
callback	(Optional) Enables callback.

Command Default Caller ID screening, call binding, and ISDN caller ID callback are disabled.

Command Modes Interface configuration

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines On a dialer rotary group interface, this command configures the Cisco IOS software to accept calls from the specified number or, used with the **callback** keyword, to reject incoming calls from the specified number but to initiate callback to the number.

When the optional **callback** keyword is used, the initial call is rejected (hence, not subject to tolls) and callback is initiated to the calling number.

When x's are used in the callback number, dialer caller screening is based on a best match system that uses the number of x's as a criterion. To make callback calls only to specified numbers or ranges of numbers but to accept any other incoming calls, make sure that the number of x's in any configuration line that uses the **callback** keyword is less than the number of x's in any configuration line that does not use the keyword.

For example, if you use at most four x's in the configuration lines with the **callback** keyword, then to accept calls from other numbers use at least five x's in a configuration line that does not use the **callback** keyword.

Note Caller ID screening requires a local switch that is capable of delivering the caller ID to the router or access server. If you enable caller ID screening but do not have such a switch, no calls will be allowed in.

For dialer profiles, this command helps bind a dialer profile to—and thus configure—the interface used for a call. The dialer command acts as a binding command by associating an incoming call with a specified dialer profile if the caller ID presented by the call matches the dialer caller value.

Note Incoming calls also can be bound to a dialer profile based on PPP name authentication, so in this instance the incoming call can be bound to the dialer profile even if the presented caller ID does not match the dialer caller value. To configure caller ID screening with dialer profiles, use the legacy **isdn caller** command.

Examples

In the following example, callback calls will be made only to numbers in the 555 and 556 exchanges, but any other number can call in:

```
dialer caller 408555xxxx callback
dialer caller 408556xxxx callback
dialer caller xxxxx
```

Related Commands

Command	Description
isdn caller	Configures ISDN caller ID screening and, optionally, enables ISDN caller ID callback for legacy DDR.
show dialer	Displays general diagnostic information for interfaces configured for DDR.

dialer clid group

To create a Calling Line Identification (CLID) group in the resource pool and assign it a name, use the **dialer clid group** command in global configuration mode. To remove a CLID group from the resource pool, use the **no** form of this command.

dialer clid group *clid-group-name*

no dialer clid group *clid-group-name*

Syntax Description

clid-group-name	Name of the CLID group created in the resource pool.

Command Default

No default behavior or values.

Command Modes

Global configuration

Command History

Release	Modification
12.1(5)T	This command was introduced.

Usage Guidelines

Use the **dialer clid group** command to create a CLID group and assign it a name. The CLID group name must be the same as the name used when configuring the customer profile.

Customer profiles are configured with a DNIS and/or CLID group and call type. The DNIS and/or CLID and call type of the incoming call is used to find the appropriate customer profile.

Examples

The following example shows the command to configure a CLID group named "group1." After you enter this command, the router prompt changes to the CLID configuration mode, Router(config-clid-group)#.

```
Router(config)# dialer clid group group1
```

Related Commands

Command	Description
number	Adds a DNIS number to a dialer DNIS group.
resource-pool call treatment discriminator	Configures a CLID group in a discriminator.

dialer congestion-threshold

To specify congestion threshold in connected links, use the **dialer congestion-threshold** command in interface configuration mode. To disable this function, use the **no** form of this command.

dialer congestion-threshold *links*

no dialer congestion-threshold

Syntax Description

links	Number of connected links for congestion threshold in the range from 0 to 64,000.

Command Default The default number of connected links is 64,000.

Command Modes Interface configuration

Command History

Release	Modification
12.0(3)T	This command was introduced.

Usage Guidelines This command is used to force the dialer to search for another uncongested system (the alternate network access server) in a stack group to dial out using Stack Group Bidding Protocol (SGBP).

Examples The following example sets the congestion threshold to five connected links on the Dialer interface 0:

```
interface Dialer0
 dialer aaa
 dialer congestion-threshold 5
```

Related Commands

Command	Description
dialer reserved-links	Reserves links for dial-in and dial-out.
sgbp dial-bids	Allows the stack group to bid for dial-out connection.

dialer dnis group

To create a DNIS group, use the **dialer dnis group** command in global configuration mode. To remove a specific Dialed Number Identification Service (DNIS) group from the running configuration, use the **no** form of this command.

dialer dnis group *name*

no dialer dnis group *name*

Syntax Description

name	Name to assign to the DNIS group number.

Command Default

A dialer DNIS group named *default*.

Command Modes

Global configuration

Command History

Release	Modification
12.0(4)XI	This command was introduced.

Usage Guidelines

Use the **dialer dnis group** global configuration command to create a DNIS group. This command enables you to create and populate a DNIS group, which is then added to a profile (customer or discriminator) by using the **dnis group** command within that profile's configuration mode.

Examples

The following example shows a specific DNIS group named modem-group1 being created with the options available for further configuration:

```
dialer dnis group modem-group1

Dialer Called Configuration Commands:
  call-type  set call-type override
  default    Set a command to its defaults
  exit       Exit from dialer configuration mode
  help       Description of the interactive help system
  no         Negate a command or set its defaults
  number     Enter number in dnis group
```

In the following example, a customer profile called isp-1 is created, a DNIS group called dnis-isp-1 is associated with the customer profile, and DNIS numbers 1234 and 5678 are assigned to the DNIS group. Only DNIS numbers 1234 and 5678 are allocated physical resources by the isp-1 customer profile, which counts and manages the resources for these two DNIS numbers and ignores all other DNIS numbers:

```
resource-pool profile customer isp-1
dnis group dnis-isp-1
exit
dialer dnis group dnis-isp-1
number 1234
number 5678
```

Related Commands

Command	Description
dnis group	Includes a group of DNIS numbers in a customer profile.
resource-pool profile	Creates a resource group for RPM.

dialer dns

To obtain a user profile name on a remote network using reverse Domain Name System (DNS), use the **dialer dns** command in interface configuration mode. To disable this function, use the **no** form of this command.

dialer dns

no dialer dns

Syntax Description

This command has no arguments or keywords.

Command Default

The reverse DNS function is disabled by default.

Command Modes

Interface configuration of a dialer rotary group leader

Command History

Release	Modification
12.0(3)T	This command was introduced.

Usage Guidelines

This command allows the dialer to use reverse DNS to get a profile name for accessing the authentication, authorization, and accounting (AAA) server. This command is not required when using named static routes.

Examples

The following example shows how to allow the dialer to use reverse DNS for name lookup:

```
interface dialer 0
 dialer aaa
 dialer dns
```

Related Commands

Command	Description
dialer aaa	Allows a dialer to access the AAA server for dialing information.

dialer dtr

To enable dial-on-demand routing (DDR) on an interface and specify that the serial line is connected by non-V.25*bis* modems using Electronic Industries Association (EIA) signaling only—specifically, the data terminal ready (DTR) signal—use the **dialer dtr** command in interface configuration mode. To disable DDR for the interface, use the **no** form of this command.

dialer dtr

no dialer dtr

Syntax Description

This command has no arguments or keywords.

Command Default

DTR dialing is disabled.

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

A serial interface configured for DTR dialing can place calls only; it cannot accept them.

When a local interface is configured for DTR dialing, the remote interface (that will be receiving the calls) can be configured for in-band dialing or not configured for anything but encapsulation, depending on the desired behavior. If the remote interface is expected to terminate a call when no traffic is transmitted for some time, it must be configured for in-band dialing (along with access lists and a dummy dialer string). If the remote interface is purely passive, no configuration is necessary.

Rotary groups cannot be configured for DTR dialing.

The **dialer map** and **dialer string** commands have no effect on DTR dialers.

Examples

The following example enables DDR and specifies DTR dialing on an interface:

```
Router(config-if)# dialer dtr
```

Related Commands

Command	Description
dialer in-band	Specifies that DDR is to be supported.
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.
dialer string (legacy DDR)	Specifies the destination string (telephone number) to be called for interfaces calling a single site.

dialer enable-timeout

To set the length of time an interface stays down after a call has completed or failed and before it is available to dial again, use the **dialer enable-timeout** command in interface configuration mode. To return to the default value, use the **no** form of this command.

dialer enable-timeout *seconds*

no dialer enable-timeout

Syntax Description

seconds	Time in seconds that the Cisco IOS software waits before the next call can occur on the specific interface. Acceptable values are positive, nonzero integers in the range from 1 through 2147483. This value must be greater than the serial pulse interval for this interface, set via the **pulse-time** command.

Command Default

15 seconds

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

The **dialer enable-timeout** command can be configured as a line down timer, to keep asynchronous interface lines down for a certain period of time, and as a callback timer for both synchronous and asynchronous interfaces.

If your phone lines are often busy or down, you may need to enforce a certain period of time before the system repeats an attempt to make a connection with a remote site. Configuring this timeout can prevent outgoing lines and switching equipment from being needlessly overloaded. In this application, the **dialer enable-timeout** command applies to both inbound and outbound calls on asynchronous interfaces only.

When the **dialer enable-timeout** command is configured on an ISDN interface, its only effect is to set a callback timer, because it is not possible (nor advisable) to keep an ISDN interface disconnected.

Examples

The following example shows how to specify a timeout period of 30 seconds on asynchronous interface 1 before attempting another connection:

```
interface async 1
 dialer enable-timeout 30
```

The following example shows how to configure a BRI interface for legacy dial-on-demand routing (DDR) and ISDN caller ID callback:

```
interface bri 0
 description Connected to NTT 81012345678901
 ip address 10.1.1.7 255.255.255.0
```

```
 no ip mroute-cache
 encapsulation ppp
 isdn caller 81012345678902 callback
 dialer enable-timeout 2
 dialer map ip 10.1.1.8 name spanky 81012345678902
 dialer-group 1
 ppp authentication chap
```

The following examples show how to configure a PPP callback server and client.

PPP Callback Server

The PPP callback server is configured on an ISDN BRI interface and requires an enable timeout period and a map class to be defined.

```
interface bri 0
 ip address 10.1.1.7 255.255.255.0
 encapsulation ppp
 dialer callback-secure
 dialer enable-timeout 2
 dialer map ip 10.1.1.8 name mymap class dial1 81012345678901
 dialer-group 1
 ppp callback accept
 ppp authentication chap
```

PPP Callback Client

The PPP callback client is also configured on an ISDN BRI interface, but does not require an enable timeout period or a map class to be defined.

```
map-class dialer dial1
dialer callback-server username
 interface bri 0
 ip address 10.1.1.8 255.255.255.0
 encapsulation ppp
 dialer map ip 10.1.1.7 name yourmap 81012345678902
 dialer-group 1
 ppp callback request
 ppp authentication chap
```

dialer fast-idle (interface)

To specify the amount of time that a line for which there is contention will stay idle before it is disconnected and the competing call is placed, use the **dialer fast-idle** command in interface configuration mode. To return to the default value, use the **no** form of this command.

dialer fast-idle *seconds*

no dialer fast-idle

Syntax Description

seconds	Idle time, in seconds, that must occur on an interface before the line is disconnected. Acceptable values are positive, nonzero integers.

Command Default

20 seconds

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

The dialer fast idle timer is activated if there is contention for a line. The dialer fast idle timer is activated if a line is busy, a packet for a different next hop address is received, and the busy line is required to send the competing packet.

If the line becomes idle for configured length of time, the current call is disconnected immediately and the new call is placed.

If the line has not yet been idle as long as the fast idle timeout period, the packet is dropped because there is no way to get through to the destination. After the packet is dropped, the fast idle timer remains active and the current call is disconnected as soon as it has been idle for as long as the fast idle timeout.

The fast idle timer will be restarted if, in the meanwhile, another packet is transmitted to the currently connected destination and it is classified as *interesting*.

This command applies to inbound and outbound calls.

Combining this command with the **dialer idle-timeout** command allows you to configure lines to stay up for a longer period of time when there is no contention, but to be reused more quickly when there are not enough lines for the current demand.

Examples

The following example specifies a fast idle timeout of 35 seconds on asynchronous interface 1:

```
interface async 1
 dialer fast-idle 35
```

Related Commands

Command	Description
dialer idle-timeout (interface)	Specifies the idle time before the line is disconnected.
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.

dialer fast-idle (map-class)

To specify the fast idle timer value to use when placing a call to any telephone number associated with a specified class, use the **dialer fast-idle** command in map-class dialer configuration mode. To reset the dialer fast-idle timer to the default, use the **no** form of this command.

dialer fast-idle *seconds*

no dialer fast-idle

Syntax Description

seconds	Number of seconds to wait before placing a different call.

Command Default

Defaults to the fast idle timer value that is set for the interface.

Command Modes

Map-class dialer configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

This fast idle timer is associated only with the map class, not the entire interface.

Examples

The following example specifies a dialer fast idle time of 10 seconds:

```
dialer string 4156884540 class Eng

! This map-class ensures that these calls use an ISDN speed of 56 kbps and a
! fast-idle time of 10 seconds.
map-class dialer Eng
 isdn speed 56
 dialer fast-idle 10
 dialer wait-for-carrier-time 30
```

Related Commands

Command	Description
dialer idle-timeout (interface)	Specifies the amount of time that a line for which there is contention will stay idle before it is disconnected and the competing call is placed.
dialer wait-for-carrier-time (map-class)	Specifies the length of time to wait for a carrier when dialing out to the dial string associated with a specified map class.
map-class dialer	Defines a class of shared configuration parameters associated with the dialer map command for outgoing calls from an ISDN interface and for PPP callback.

dialer hold-queue

To allow *interesting* outgoing packets to be queued until a modem connection is established, use the **dialer hold-queue** command in interface configuration mode. To disable the hold queue, use the **no** form of this command.

dialer hold-queue *packets* **timeout** *seconds*

no dialer hold-queue [*packets*]

Syntax Description

packets	Number of packets, in the range from 1 to 100 packets, to hold in the queue. This argument is optional with the **no** form of this command.
timeout *seconds*	Amount of time, in seconds, to queue the packets.

Command Default The outgoing packet queue is disabled.

Command Modes Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines A dialer hold queue can be configured on any type of dialer, including in-band synchronous, asynchronous, data terminal ready (DTR), and ISDN dialers. Rotary groups can be configured with a dialer hold queue. If a rotary group is configured with a hold queue, all members of the group will be configured with a dialer hold queue and no individual member's hold queue can be altered.

If no hold queue is configured, packets are dropped during the time required to establish a connection. Setting *packets* to 0 using the **dialer hold-queue** command is equivalent to using the **no dialer hold-queue** command.

Examples The following command configures a dialer hold queue to hold 10 packets:

```
Router(config-if)# dialer hold-queue 10 timeout 60
```

Related Commands

Command	Description
dialer-group	Controls access by configuring an interface to belong to a specific dialing group.

dialer idle-timeout (interface)

To specify the duration of idle time before a line is disconnected, use the **dialer idle-timeout** command in interface configuration mode. To reset the idle timeout to the default, use the **no** form of this command.

dialer idle-timeout *seconds* [**inbound** | **either**]

no dialer idle-timeout

Syntax Description

seconds	Idle time, in seconds, that must occur on the interface before the line is disconnected. Acceptable values are positive, nonzero integers.
inbound	(Optional) Only inbound traffic will reset the idle timeout.
either	(Optional) Both inbound and outbound traffic will reset the idle timeout.

Command Default

Direction: outbound
Idle time: 120 seconds

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.
12.1(1)T	The following keywords were added: • **inbound** • **either**

Usage Guidelines

This command is used on lines for which there is no contention. When contention occurs, the **dialer fast-idle** command is activated. For example, when a busy line is requested to send another packet to a different destination than it is currently connected to, line contention occurs and the **dialer fast-idle** command is activated.

By default, this command applies to inbound and outbound calls. For example, if a receiving system needs to make outgoing calls, you might configure it with a short idle timeout.

Only packets that match the dialer group reset the idle timer.

Use the **dialer idle-timeout** command to set a very high idle timer when Multilink PPP is configured and you want a multilink bundle to be connected indefinitely. (The **dialer-load threshold 1** command no longer keeps a multilink bundle of n links connected indefinitely and the **dialer-load threshold** command no longer keeps a multilink bundle of two links connected indefinitely.)

Examples

The following example specifies an idle timeout of 3 minutes (180 seconds) on asynchronous interface 1. Because the **inbound** keyword is included, only inbound traffic that matches the dialer group will reset the idle timer.

```
interface async 1
 dialer idle-timeout 180 inbound
```

Related Commands

Command	Description
dialer fast-idle (interface)	Specifies the amount of time that a line for which there is contention will stay idle before it is disconnected and the competing call is placed.
dialer-group	Controls access by configuring an interface to belong to a specific dialing group.

dialer idle-timeout (template)

To set the dialer idle timeout period in a virtual template interface, use the **dialer idle-timeout** command in template configuration mode. To change the dialer idle timeout, use the **no** form of this command.

dialer idle-timeout *seconds* [**inbound | either**]

no dialer idle-timeout *seconds* [**inbound | either**]

Syntax Description

seconds	Resets the idle timer after the period specified, in seconds.
inbound	(Optional) Resets the idle timer after the period specified based only on inbound traffic.
either	(Optional) Resets the idle timer after the period specified based on either inbound or outbound traffic.

Command Default

No default behavior or values.

Command Modes

Template configuration

Command History

Release	Modification
12.2(4)T	This command was introduced for Resource Pool Manager (RPM) template configuration.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T and support was added for the Cisco AS5300, Cisco AS5400, and Cisco AS5800.

Usage Guidelines

The **dialer idle-timeout** command allows the dialer idle timeout period to be specified in an RPM customer profile and applied on a per-dialed number identification service (DNIS) basis. The dialer idle timer configuration set in this command will override dialer idle timer configurations for dialer, group asynchronous, and virtual template interfaces, unless a per-user configuration is received from an authentication, authorization, and accounting (AAA) per-user interface configuration. In this case, the settings from the AAA per-user interface configuration take precedence over the local interface configuration.

The **dialer idle-timeout** command works well with Multilink PPP (MLP) and Multichassis Multilink PPP (MMP) when the master bundle interface is not a virtual access (projected) interface. For virtual access interfaces where the dialer idle timer cannot be used, you can classify traffic that resets the PPP idle timer using the **ip idle-group** commands.

Examples

The following example sets the idle timeout period in an RPM customer profile template to 45 seconds:

```
template template 1
 dialer idle-timeout 45
```

The following example sets the idle timeout period in an RPM customer profile template to 60 seconds and resets the idle timer based on either inbound or outbound traffic:

```
template template 1
 dialer idle-timeout 60 either
```

The following example sets the idle timeout period in an RPM customer profile template to 100 seconds and resets the idle timer based only on inbound traffic:

```
template template 1
 dialer idle-timeout 100 inbound
```

Related Commands

Command	Description
dialer-group (template)	Controls access by configuring a virtual template interface to belong to a specific dialing group.
ip idle-group	Configures interesting traffic on an interface for the PPP idle timer.
template	Accesses the template configuration mode for configuring a particular customer profile template.

dialer in-band

To specify that dial-on-demand routing (DDR) is to be supported, use the **dialer in-band** command in interface configuration mode. To disable DDR for the interface, use the **no** form of this command.

dialer in-band [**no-parity** | **odd-parity**]

no dialer in-band

Syntax Description

no-parity	(Optional) No parity is to be applied to the dialer string that is sent out to the modem on synchronous interfaces.
odd-parity	(Optional) Dialed number has odd parity (7-bit ASCII characters with the eighth bit as the parity bit) on synchronous interfaces.

Command Default

Disabled. By default, no parity is applied to the dialer string.

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

The **dialer in-band** command specifies that chat scripts will be used on asynchronous interfaces and V.25*bis* will be used on synchronous interfaces. The parity keywords do not apply to asynchronous interfaces. The parity setting applies to the dialer string that is sent out to the modem. If you do not specify a parity, or if you specify no parity, no parity is applied to the output number. If odd parity is configured, the dialed number will have odd parity (7-bit ASCII characters with the eighth bit as the parity bit.) If an interface only accepts calls and does not place calls, the **dialer in-band** interface configuration command is the only command needed to configure it. If an interface is configured in this manner, with no dialer rotary groups, the idle timer never disconnects the line. It is up to the remote end (the end that placed the call) to disconnect the line based on idle time.

Examples

The following example specifies DDR for asynchronous interface 1:

```
interface async 1
 dialer in-band
```

Related Commands

Command	Description
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.
dialer string (legacy DDR)	Specifies the string (telephone number) to be called for interfaces calling a single site.

dialer isdn

To specify the bit rate used on the B channel associated with a specified map class and to specify whether to set up semipermanent connections for this map class, use the **dialer isdn** command in map-class dialer configuration mode. To remove the speed and connection settings, use the **no** form of this command.

dialer isdn [**speed** *speed*] [**spc**]

no dialer isdn [**speed** *speed*] [**spc**]

Syntax Description

speed *speed*	(Optional) Bit rate, in kilobytes per second (Kbps), used on the ISDN B channel. Values are **56** and **64**. Default is 64.
spc	(Optional) ISDN semipermanent connection is used for calls associated with this map class.

Command Default

Bit rate is 64 Kbps. Semipermanent connections are not set up.

Command Modes

Map-class dialer configuration

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines

This command is valid for ISDN interfaces only.

Examples

The following example configures a speed of 56 Kbps and no semipermanent connections for the Eng map class:

```
dialer string 4155550140 class Eng

! This map-class ensures that these calls use an ISDN speed of 56 kbps and that
! no semipermanent connection is set up.
map-class dialer Eng
dialer isdn speed 56
```

Related Commands

Command	Description
dialer wait-for-carrier-time (map-class)	Specifies the length of time to wait for a carrier when dialing out to the dial string associated with a specified map class.

dialer isdn short-hold

To configure the router to disconnect a call at the end of the current charging period if the line has been idle for at least the specified minimum period, use the **dialer isdn short-hold** command in map-class dialer configuration mode. To reset the ISDN short-hold timer to the default period, use the **no** form of this command.

dialer isdn short-hold *seconds*

no dialer isdn short-hold

Syntax Description

seconds	Minimum number of seconds of idle time on the line. Default is 120 seconds.

Command Default

Disabled; the router uses a static idle timeout. When this command is enabled, the default short-hold timeout is 120 seconds.

Command Modes

Map-class dialer configuration

Command History

Release	Modification
11.3	This command was introduced.

Usage Guidelines

This command is used for configuring ISDN Advice of Charge (AOC) on Cisco routers.

Use the **dialer isdn short-hold** command if you subscribe to an ISDN AOC during-call service provided by the local ISDN network and want to use this option. The router uses the frequency at which the network sends the AOC-D message to determine the charging period. If the line has been idle for the short-hold timeout, the call disconnects at the end of the charging period. If the line has not been idle for at least that long, the call is maintained into the next charging period.

Examples

The following partial example configures the dialer map class Deutschland with a static idle timeout for outgoing calls. The static idle timer is to be used if for any reason the network does not provide charging information. It also configures a short-hold timeout to allow the router to determine dynamically whether to disconnect or continue the call at the end of the charging period.

```
dialer map-class myclass
 dialer idle-timeout 150
 dialer isdn short-hold 120
```

Related Commands

Command	Description
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites, or to receive calls from multiple sites.
dialer string (dialer profiles)	Specifies the string (telephone number) to be used when placing a call from an interface.
dialer wait-for-carrier-time (map-class)	Specifies the length of time to wait for a carrier when dialing out to the dial string associated with a specified map class.
map-class dialer	Defines a class of shared configuration parameters associated with the dialer map command for outgoing calls from an ISDN interface and for PPP callback.

dialer load-threshold

To configure bandwidth on demand by setting the maximum load before the dialer places another call to a destination, use the **dialer load-threshold** command in interface configuration mode. To disable the setting, use the **no** form of this command.

dialer load-threshold *load* [**outbound | inbound | either**]

no dialer load-threshold

Syntax Description

load	Interface load used to determine whether to initiate another call or to drop a link to the destination. This argument represents a utilization percentage; it is a number between 1 and 255, where 255 is 100 percent.
outbound	(Optional) Calculates the actual load using outbound data only.
inbound	(Optional) Calculates the actual load using inbound data only.
either	(Optional) Sets the maximum calculated load as the larger of the outbound and inbound loads.

Command Default

No maximum load is predefined.

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

When the cumulative load of all UP links (a number *n*) exceeds the load threshold the dialer adds an extra link and when the cumulative load of all UP links minus one (*n* - 1) is at or below load threshold then the dialer can bring down that one link. The dialer will make additional calls or drop links as necessary but will never interrupt an existing call to another destination.

The *load* argument is the calculated weighted average load value for the interface; 1 is unloaded and 255 is fully loaded. The load is calculated by the system dynamically, based on bandwidth. You can set the bandwidth for an interface in kilobits per second, using the **bandwidth** command.

The load calculation determines how much of the total bandwidth you are using. A *load* value of 255 means that you are using one hundred percent of the bandwidth. The load number is required.

See the description of the **bandwidth** command earlier in this guide for more information.

When multilink PPP is configured, the **dialer load-threshold 1** command no longer keeps a multilink bundle of *n* links connected indefinitely and the **dialer-load threshold 2** command no longer keeps a multilink bundle of 2 links connected indefinitely. If you want a multilink bundle to be connected indefinitely, you must set a high idle timer or make all traffic interesting.

When two connected routers are configured to dial out, only one router should have the **dialer max-call** or **dialer pool-member max-links** command configured. Otherwise, if both routers dial simultaneously, each will reject the incoming call when it exceeds the setting for the **max-links** argument. If the

maximum number of calls configured is one and dialing out is synchronized, no connection will come up or it will take many retries before the connection stays up. To prevent this problem, one of the following configurations is recommended:

- Use the **dialer max-call** command to restrict the number of connections, rather than the **dialer pool-member max-links** command. The result is the same and the **dialer max-call** command is easier to understand and configure.
- When two systems will dial each other and a maximum of one link is desired, configure the **dialer max-calls** command on only one side of the connection, not on both sides.
- Configure the **dialer load-threshold** command on only one side of the connection, either the local or remote router, and configure the **dialer max-call** command on the interface where the **dialer load-threshold** command is configured.

Note Dial-on-demand (DDR) load balancing does not forward packets correctly when the system dials out via the **dialer load-threshold** command and more than one remote device is connected by either dial-out or dial-in. This problem typically occurs on a PRI with **dialer load-threshold** configured, but it may also occur on BRI or multiple DDR interfaces in a dialer rotary group when more than one remote device is connected. As a workaround, remove the **dialer load-threshold** command.

Examples

In the following example, if the load to a particular destination on an interface in dialer rotary group 5 exceeds interface load 200, the dialer will initiate another call to the destination:

```
interface dialer 5
 dialer load-threshold 200
```

Related Commands

Command	Description
bandwidth	Specifies the maximum aggregate bandwidth for H.323 traffic.
busyout	Creates a “host-failed” message that displays when a connection fails.
dialer max-call	Specifies the maximum number of calls to a remote destination that can be up at any one time for a dialer profile.
dialer pool-member max-links	Configures a physical interface to be a member of a dialer profile dialing pool.
dialer reserved-links	Includes a specified interface in a dialer rotary group.
interface dialer	Defines a dialer rotary group.

dialer map

To configure a serial or ISDN interface to call multiple sites or to receive calls from multiple sites, use the **dialer map** command in interface configuration mode. Several options for using this command are possible; see the following description and the "Examples" section. To delete a particular dialer map entry, use the **no** form of this command.

Complete Syntax

dialer map *protocol-keyword protocol-next-hop-address* [**broadcast** | **class** *dialer-map-class-name* | **modem-script** *modem-regular-expression* | **vrf** *vrf-name* | **name** *host-name* | **spc** | **speed 56** | **speed 64** | **system-script** *system-regular-expression* | *dial-string*[**:***isdn-subaddress*]]

no dialer map *protocol-keyword protocol-next-hop-address* [**broadcast** | **class** *dialer-map-class-name* | **modem-script** *modem-regular-expression* | **vrf** *vrf-name* | **name** *host-name* | **spc** | **speed 56** | **speed 64** | **system-script** *system-regular-expression* | *dial-string*[**:***isdn-subaddress*]]

Dialer Map for an Asynchronous Interface

To configure an asynchronous interface to place a call to a single site that requires a system script or that has no assigned modem script, or to multiple sites on a single line, on multiple lines, or on a dialer rotary group, use the following form of the **dialer map** interface configuration command:

dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**broadcast**] [**modem-script** *modem-regular-expression*] [**system-script** *system-regular-expression*] [*dial-string*]

no dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**broadcast**] [**modem-script** *modem-regular-expression*] [**system-script** *system-regular-expression*] [*dial-string*]

Dialer Map for ISDN Interface and ISDN AOC Short-Hold Idle Timeout

To configure an ISDN interface to place a call to multiple sites, to authenticate calls from multiple sites, and to identify the class name that configures the ISDN Advice of Charge (AOC) short-hold idle timeout, use the following form of the **dialer map** interface configuration command:

dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**speed 56** | **speed 64**] [**broadcast**] **class** *dialer-map-class-name* [*dial-string*[**:***isdn-subaddress*]]

no dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**speed 56** | **speed 64**] [**broadcast**] **class** *dialer-map-class-name* [*dial-string*[**:***isdn-subaddress*]]

Dialer Map for German and Australian SPC

The following command syntax is used only in Germany for circuits between an ISDN BRI and a 1TR6 ISDN switch, and in Australia for circuits between an ISDN PRI and a TS-014 switch. To set up network addressing on an ISDN BRI interface to support semipermanent connection between customer equipment and the exchange, use the following form of the **dialer map** interface configuration command:

dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**spc**] [**speed 56** | **speed 64**] [**broadcast**] *dial-string*[**:***isdn-subaddress*]

no dialer map *protocol-keyword protocol-next-hop-address* [**name** *host-name*] [**spc**] [**speed 56** | **speed 64**] [**broadcast**] *dial-string*[**:***isdn-subaddress*]]

Dialer Map for MPLS VPN

To configure a serial or ISDN interface to support an IP-based VPN routing and forwarding instance (VFR)-aware dialer map for a Multiprotocol Label Switching (MPLS) VPN, use the following form of the **dialer map** interface configuration command:

dialer map ip *protocol-next-hop-address* **vrf** *vrf-name* **name** *host-name dial-string*

no dialer map ip *protocol-next-hop-address* **vrf** *vrf-name* **name** *host-name dial-string*

Dialer Map for Bridging

To configure a serial or ISDN interface to support bridging, use the following form of the **dialer map** interface configuration command:

dialer map bridge [**name** *host-name*] [**broadcast**] [*dial-string*[**:***isdn-subaddress*]]

no dialer map bridge [**name** *host-name*] [**broadcast**] [*dial-string*[**:***isdn-subaddress*]]

Syntax Description

protocol-keyword protocol-next-hop-address	Enter one of the protocol keywords listed followed by an appropriate address (for example, the **clns** keyword is followed by a network service access point, or NSAP, address): • **appletalk**—AppleTalk • **bridge**—Bridging (no address is required) • **clns**—Cisco IOS Connectionless Network Service (CLNS) • **decnet**—DECnet • **hpr**—High Performance Routing • **ip**—IP • **ipx**—Internetwork Packet Exchange • **llc2**—Logical Link Control, type 2 • **netbios**—NetBIOS • **pppoe**—PPP over Ethernet • **snapshot**—Snapshot routing protocol; refer to the **dialer map snapshot** command description for use of this keyword
broadcast	(Optional) Forwards broadcasts to the address specified with the *protocol-next-hop-address* argument.
class *dialer-map-class-name*	(Optional) Dialer map class name.
modem-script *modem-regular-expression*	(Optional) Modem script name to be used for the connection (asynchronous interfaces only).
vrf *vrf-name*	(Optional) VPN routing/forwarding instance (VRF) for use with a VRF-aware dialer map in an MPLS VPN. Provide a dial string after the VRF name.

name *host-name*	(Optional) The remote system with which the local router or access server communicates. Used for authenticating the remote system on incoming calls. The *host-name* argument is a case-sensitive name or ID of the remote device. For routers with ISDN interfaces, if calling line identification—sometimes called CLI, but also known as caller ID and automatic number identification (ANI)—is provided, the *host-name* argument can contain the number that the calling line ID provides.
spc	(Optional) Semipermanent connection between customer equipment and the exchange; used only in Germany for circuits between an ISDN BRI and a 1TR6 ISDN switch and in Australia for circuits between an ISDN PRI and a TS-014 switch.
speed 56 | **speed 64**	(Optional) Keyword and value indicating the line speed in kbps to use. Used for ISDN only. The default speed is **speed 64 (**64 kbps).
system-script *system-regular-expression*	(Optional) System script name to be used for the connection (asynchronous interfaces only).
dial-string[**:***isdn-subaddress*]	(Optional) Dial string (telephone number) sent to the dialing device when it recognizes packets with the specified address that matches the configured access lists, and the optional subaddress number used for ISDN multipoint connections (colon required for separating numbers). The dial string and ISDN subaddress, when used, must be the last item in the command line.

Command Default

For all forms of the command, no dialer map is configured. The default speed is 64 kbps. No scripts are defined for placing calls.

Command Modes

Interface configuration

Command History

Release	Modification
9.1	This command was introduced for synchronous serial interfaces using V.25*bis* dialing.
10.0	This command was enhanced to support asynchronous and ISDN interfaces.
11.3	This command was enhanced to support ISDN AOC.
12.2(8)T	The **vrf** *vrf-name* keyword and argument were added.
12.2(13)T	The **vines** and **xns** arguments were removed because Banyan Systems' Virtual Integrated Network Service (VINES) and the Xerox Network System (XNS) are no longer available in Cisco IOS software.

Usage Guidelines

Usage Guidelines for Asynchronous Interfaces

Configure a **dialer map** command for each remote destination for an asynchronous interface. Specify chat scripts for a physical interface that is not part of a dialer rotary group when no chat script is specified for the line, or when a system chat script is required to log in to the remote system. However, you need *not* specify a system script under the following conditions:

- The modem script can be used to dial in and log in to the remote system.
- You are calling a system that does not require a login script—that is, a system that answers and immediately goes into protocol mode.

If you adhere to the chat script naming convention suggested in the description of the **chat-script** command, use the form **modem-script** **modulation-type* in the **dialer map** command; for example, *-v32*bis*. This form allows you to specify the modulation type that is best for the system you are calling, and allows the modem type for the line to be specified by the **script dialer** command.

The period (.) is a wildcard that matches any character, and the asterisk (*) indicates that the preceding character can be duplicated multiple times. For more information about regular expressions, refer to the "Regular Expressions" appendix in the *Cisco IOS Dial Technologies Configuration Guide*.

If a modem script is specified in the **dialer map** interface configuration command and a modem script is specified in the **script dialer** line configuration command, the first chat script that matches both is used. If no script matches both, an error message is logged and the connection is not established. If there is no modem chat script specified for the line, the first chat script (that is, the one specified in the **chat-script** global configuration command) that matches the regular expression of the modem script is used. If there is a system script specified in the **dialer map** interface configuration command, the first chat script to match the regular expression is used.

The **modem-script** and **system-script** keywords and corresponding arguments are optional. They are ignored on synchronous interfaces.

If you have named your chat script according to the type of modem and modulation (for example, codex-v32 or telebit v32), your regular expression could be **codex-.*** in the **script dialer** line configuration command, and ***-v32bis** in the modem script specified in the **dialer map** command for a system to which you want to connect using V.32*bis* modulation.

The modem lines (specified by the *regular-expression* argument in the **script dialer** line configuration command) would be set to one of the following regular expressions to match patterns, depending on the kind of modem you have:

- **codex-.***
- **telebit-.***
- **usr-.***

Usage Guidelines for Synchronous Interfaces

Use the **dialer map** command with the **name** keyword but without the dial string in configurations in which remote sites are calling a central site, but the central site is not calling the remote site. With this command, the local device will authenticate the remote site using Challenge Handshake Authentication Protocol (CHAP) or Password Authentication Protocol (PAP), which will send the remote site's host name to the central site. The central site will then use this name to authenticate the caller, and will use the next hop address to send packets to the remote site. Because no dialer string is specified, the central site cannot call the remote router.

Usage Guidelines for ISDN Interfaces and ISDN AOC

Use the **dialer map** command with the **name** keyword in configurations in which remote sites are calling a central site, but the central site is not calling the remote site. With this command, the local device will authenticate the remote site using CHAP or PAP, which will send the remote site host name to the central site. The central site will then use this name to authenticate the caller, and will use the next hop address to send packets to the remote site. Because no dialer string is specified, the central site cannot call the remote router.

For ISDN interfaces only, you can specify an optional speed parameter for **dialer map** commands if you also specify a dial string. This option informs the ISDN software whether it should place a call at 56 or 64 kbps. If you omit the ISDN speed parameter, the default is 64 kbps.

For routers with ISDN interfaces, if CLI is provided, the *host-name* field may contain the number that calling line ID provides.

When the network provides ISDN AOC information, use the **dialer map** command with the **class** keyword for outgoing calls. Use the **map-class dialer** global command to identify the class name, the **dialer idle-timeout** command to define a static idle timeout period for outgoing calls to the class, and the **dialer isdn short-hold** command to define the minimum idle time to wait before disconnecting calls at the end of the charging period.

Usage Guidelines for MPLS VPN

Beginning with Cisco IOS Release 12.2(8)T, dialer software became capable of being "VRF-aware for MPLS VPN," meaning that it can distinguish between two destinations with the same IP address using information stored in a VRF. When the **dialer map** command is configured with the **vrf** keyword in an MPLS VPN, the dialer software looks up a map for the next hop address using the next hop address and the VRF name configured. Once dial-out takes place and authentication is complete, a virtual profile interface is created. The VRF is installed on the virtual profile interface using the following per-user authentication, authorization, and accounting (AAA) interface command:

cisco-avpair "lcp:interface-config=ip vrf forwarding vrf-name"

Data transfer occurs as defined by the virtual profile dialer. When an IP route for a particular VRF points to the dialer (configured using the **ip route** global configuration command), the dialer uses the VFR-aware dialer map to get the dial string and IP address, and to bring up the connection. Once the user is authenticated, a virtual access interface is created and the user details are downloaded from the AAA server, and finally, the appropriate IP VRF command is applied on the virtual access interface.

Examples

Asynchronous Interface Examples

The following example sets the dialer speed at 56 kbps to call a remote site at 172.19.2.5:

```
interface async 1
encapsulation ppp
ppp authentication chap
dialer map ip 172.19.2.5 speed 56
```

The following example shows a dialing chat script and a login chat script. The **dialer in-band** command enables dial-on-demand routing (DDR) on asynchronous interface 10, and the **dialer map** command looks for the specified dialing and the login scripts, then uses those scripts to dial the string 95550190.

```
chat-script dial ABORT ERROR "" "AT Z" OK "ATDT \T" TIMEOUT 30 CONNECT \c
chat-script login ABORT invalid TIMEOUT 15 name: billw word: wewpass ">" "slip default"
interface async 10
dialer in-band
dialer map ip 10.55.0.1 modem-script dial system-script login 95550190
```

In the following example, the remote site is calling the central site, and the central site is calling the remote site. The central router uses the name ZZZ to authenticate the remote router when connection is made, and uses the dialer string 14155550134 to call the remote router if it is not currently connected.

```
interface async 1
dialer map ip 172.19.2.5 name ZZZ 14155550134
```

In the following example, a remote site is calling a central site, but the central site is not calling the remote site. The local device will authenticate the site that is calling in using CHAP. CHAP causes the remote site name, YYY, to be sent to the site it is calling. The central site will then use this name to authenticate the remote site.

```
interface async 1
  encapsulation ppp
  ppp authentication chap
  dialer map ip 172.19.2.5 name YYY
```

ISDN AOC Short-Hold Idle Timeout Example

In the following legacy DDR example, a BRI interface is configured with dialer map classes to use for outgoing calls, and a dialer idle timeout period to use for all incoming calls. All of the map classes are configured with dialer idle timeout periods that override the interface static dialer idle timeout for outgoing calls. Two map classes are also configured for an ISDN AOC short-hold idle timeout.

```
hostname A
!
username IA password 7 1533121F0725
username IB password 7 110A1016262D29
username IC password 7 1533121F072508
isdn switch-type basic-net3
!
interface bri 0
 ip address 10.0.0.35 255.0.0.0
 encapsulation ppp
 dialer idle-timeout 150
 dialer map ip 10.0.0.33 name IA class One 06966600050
 dialer map ip 10.0.0.40 name IB class Two 778578
 dialer map ip 10.0.0.45 name IC class Three 778579
 ppp authentication chap
!
map-class dialer Three
 dialer idle-timeout 300
 dialer isdn short-hold 10
!
map-class dialer One
 dialer idle-timeout 300
!
map-class dialer Two
 dialer idle-timeout 300
 dialer isdn short-hold 10
```

SPC Example

The following example configures the interface for semipermanent connections in Germany; the IP address and the phone number are provided:

```
dialer map ip 192.168.48.2 spc 49305550155:3789
```

MPLS VPN Example

In the following partial example, the number to be dialed is based on the VRF name and destination IP address configured. The VRF is identified based on the incoming interface of the packet, and is used with the destination IP address to determine the number to be dialed, as defined in the **dialer map** command.

```
virtual-profile virtual-template 1
virtual-profile aaa
!
interface virtual-template 1
 ip unnumbered loopback0
 ppp authentication chap
 ppp multilink
.
.
.
interface dialer 1
 dialer map ip 10.9.9.9 vrf new_vrf name new_name 5550145
 dialer map ip 10.9.9.9 vrf branch_vrf name branch_name 5550156
 ppp authentication chap
 ppp multilink
.
.
.
ip route vrf vrfgreen_vrf 10.9.9.9 255.255.255.255 dialer1
ip route vrf vrfyellow_vrf 10.9.9.9 255.255.255.255 dialer1
```

Related Commands

Command	Description
chat-script	Places calls over a modem and logs in to remote systems.
dialer idle-timeout (map-class)	Specifies the fast idle timer value to use when placing a call to any telephone number associated with a specified class.
dialer isdn short-hold	Configures the router to disconnect a call at the end of the current charging period if the line has been idle for at least the specified minimum period.
dialer map snapshot	Defines a dialer map for the snapshot routing protocol on a client router connected to a DDR interface.
ip route	Establishes static IP routes, and pairs an IP address with a VRF-aware dialer map.
map-class dialer	Defines a class of shared configuration parameters associated with the **dialer map** command for outgoing calls from an ISDN interface and for PPP callback.
ppp bap call	Sets PPP BACP call parameters.
virtual-profile aaa	Enables virtual profiles by AAA configuration.

dialer map snapshot

To define a dialer map for Cisco's snapshot routing protocol on a client router connected to a dial-on-demand routing (DDR) interface, use the **dialer map snapshot** command in interface configuration mode. To delete one or more previously defined snapshot routing dialer maps, use the **no** form of this command.

dialer map snapshot *sequence-number dial-string*

no dialer map snapshot [*sequence-number*]

Syntax Description

sequence-number	A number in the range from 1 to 254, inclusive, that uniquely identifies a dialer map. (Optional for the **no** form.)
dial-string	Telephone number of a remote snapshot server to be called during an active period.

Command Default

No snapshot routing dialer map is defined.

Command Modes

Interface configuration

Command History

Release	Modification
10.3	This command was introduced.

Usage Guidelines

Enter a command for each remote snapshot server router the client router should call during an active period.

Use the **no dialer map snapshot** form of this command to remove all previously defined snapshot dialer maps on the client router; use the **no dialer map snapshot** *sequence-number* form of this command to delete a specified dialer map.

Examples

The following examples define snapshot dialer maps on a client router:

```
dialer map snapshot 12 4155550134
dialer map snapshot 13 4155550145
```

The following example removes one of the previously defined snapshot routing dialer maps on the client router:

```
no dialer map snapshot 13
```

Related Commands

Command	Description
dialer reserved-links	Includes a specified interface in a dialer rotary group.
interface dialer	Defines a dialer rotary group.
snapshot client	Configures a client router for snapshot routing.

dialer max-call

To specify the maximum number of calls to a remote destination that can be up at any one time for a dialer profile, use the **dialer max-call** command in interface configuration mode.

dialer max-call *number*

Syntax Description

number	Maximum number of calls, ranging from 1 to 4096.

Command Default No maximum number of calls is specified.

Command Modes Interface configuration

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines The **dialer max-call** command is used to specify the maximum number of calls for the dialer interface. This command applies to dialer interfaces only.

This command can be configured only if a dialer profile is enabled using the **dialer pool** command. The **dialer max-call** command cannot be used with legacy dial-on-demand routing (DDR).

When two connected routers are configured to dial out, only one router should have the **dialer max-call** or **dialer pool-member max-links** command configured. Otherwise, if both routers dial simultaneously, each will reject the incoming call when it exceeds the setting for the **max-links** argument. If the maximum number of calls configured is one and dialing out is synchronized, no connection will come up or it will take many retries before the connection stays up. To prevent this problem, one of the following configurations is recommended:

- Use the **dialer max-call** command to restrict the number of connections, rather than the **dialer pool-member max-links** command. The result is the same and the **dialer max-call** command is easier to understand and configure.
- When two systems will dial each other and a maximum of one link is desired, configure the **dialer max-calls** command on only one side of the connection, not on both sides.
- Configure the **dialer load-threshold** command on only one side of the connection, either the local or remote router, and configure the **dialer max-call** command on the interface where the **dialer load-threshold** command is configured.

Examples The following example sets a maximum of six calls:

```
dialer max-call 6
```

Related Commands

Command	Description
dialer isdn	Specifies the bit rate used on the B channel associated with a specified map class and specifies whether to set up semipermanent connections for this map class.
dialer load-threshold	Configures bandwidth on demand by setting the maximum load before the dialer places another call to a destination.
dialer pool	Specifies, for a dialer interface, which dialing pool to use to connect to a specific destination subnetwork.
dialer pool-member max-links	Configures a physical interface to be a member of a dialer profile dialing pool.
dialer wait-for-carrier-time (map-class)	Specifies the length of time to wait for a carrier when dialing out to the dial string associated with a specified map class.

dialer order

To specify the dialing order when multiple dial strings are configured, use the **dialer order** command in interface configuration mode. To change or remove the dialing order, use the **no** form of this command.

dialer order [**sequential | round-robin | last-successful**]

no dialer order [**sequential | round-robin | last-successful**]

Syntax Description

sequential	(Optional) Always starts dialing the first dial string configured in a list of multiple strings, and continues to the next dial string when a call fails. This keyword allows dial string order to be prioritized, and is the default.
round-robin	(Optional) Always starts dialing using the dial string that follows the most recently used dial string. If no calls have previously been made, the dialer uses the first dial string. When a call fails, the dialer tries the next dial string until all dial strings have been tried. This keyword allows calls to be shared equally among the configured dial strings. However, if the dial strings are associated with multiple ISDN B channels on the same remote device, a call may be placed to bring up a second B channel without trying to call the number associated with the first B channel.
last-successful	(Optional) Always starts dialing using the most recently successful dial string, and continues to the next dial string in a list when a call fails. This keyword reduces the time needed to find a dial string that successfully completes a call when the dial strings are not likely to be equally successful.

Command Default

Dial order is sequential.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(8)T	This command was introduced.

Usage Guidelines

The **dialer order** command keywords can be configured on a per-interface basis. The configuration rules are as follows:

- The keyword you configure applies to dial strings configured on an interface by the **dialer map** and **dialer string** configuration commands.
- The keyword you configure for a dialer interface is effective for all destinations defined by that interface.

You can use the **dialer order** command in configurations that apply to both legacy dialers and dialer profiles. The command is also compatible with the following dialer features and protocols:

- Dialer redial
- Dialer Watch feature

- Dialer Persistent feature
- Bandwidth Allocation Control Protocol (BACP)
- Bandwidth on demand
- Multilink PPP

Examples

The following legacy dialer configuration shows how to set the dialing software to try the telephone number of the last successful call when starting a new call, rather than the first telephone number in the list (555-0104):

```
interface Serial0/0
 ip address 10.2.1.130 255.255.255.0
 encapsulation ppp
 dialer in-band
 dialer map ip 10.2.1.131 name mymap1 modem-script scr-3 5550104
 dialer map ip 10.2.1.131 name mymap1 modem-script scr-3 5550105
 dialer map ip 10.2.1.131 name mymap1 modem-script scr-3 5550106
 dialer-group 1
 dialer order last-successful
```

If in a previous attempt to dial network 10.2.1.131 the telephone number 555-0106 was successful, because the dial order is set to **last-successful**, the next attempt to dial network 10.2.1.131 will start again with the 555-0106 telephone number.

The following dialer profile configuration shows how to set the dialing software to try the telephone number that occurs after the most recently used dial string when starting a new call, rather than the first telephone number in the list (0104):

```
interface Dialer0
 ip address 10.1.1.130 255.255.255.0
 encapsulation ppp
 dialer pool 1
 dialer string 0104
 dialer string 0105
 dialer string 0106
 dialer string 0107
 dialer-group 1
 dialer order round-robin
```

If in a previous attempt to dial network 10.1.1.130 the telephone number 0106 was successful, because the dial order is set to **round-robin**, the next attempt to dial network 10.1.1.130 will start with the 0107 telephone number.

Related Commands

Command	Description
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites, or to receive calls from multiple sites.
dialer string	Specifies the string (telephone number) to be used when placing a call from an interface.

dialer outgoing

To configure the dialer map class for a Network Specific Facilities (NSF) dialing plan to support outgoing calls, use the **dialer outgoing** command in map-class dialer configuration mode.

dialer outgoing *class-name*

Syntax Description

class-name	Keyword for a specified AT&T Primary-4ESS NSF dialing plan. The following keywords are supported: **sdn**, **megacomm**, and **accunet**.

Command Default

This command is disabled; no class name is provided.

Command Modes

Map-class dialer configuration

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

Use this command only to define a dialer map class for an NSF call-by-call service offered by AT&T on Primary-4ESS ISDN switches. This command is not used for other vendors and switch types.

Examples

The following partial example shows a class called sdn to support the Software Defined Network (SDN) dialing plan. For a more complete example using all the related commands, see the **map-class dialer** command.

```
dialer outgoing sdn
```

Related Commands

Command	Description
dialer map	Configures a serial interface or ISDN interface to call one or multiple sites or to receive calls from multiple sites.
dialer voice-call	Configures the dialer map class for an NSF dialing plan to support outgoing voice calls.
isdn nsf-service	Configures NSF on an ISDN PRI for outgoing calls configured as voice calls.
map-class dialer	Defines a class of shared configuration parameters associated with the dialer map command for outgoing calls from an ISDN interface and for PPP callback.

dialer persistent

To force a dialer interface to be connected at all times, even in the absence of interesting traffic, use the **dialer persistent** command in interface configuration mode. To disable this option, use the **no** form of this command.

dialer persistent [**delay** [**initial**] *seconds* | **max-attempts** *number*]

no dialer persistent

Syntax Description

delay	(Optional) Sets the delay before an attempt to reestablish a persistent connection after a network error has disrupted it.
initial	(Optional) Sets the delay before a persistent connection is established, after configuration or boot-up, in the absence of interesting traffic.
seconds	(Optional) Sets the time, in seconds, for the delay or initial delay set by the **delay** and **initial** keywords. Default is 1 second.
max-attempts *number*	(Optional) Maximum number of attempts for reconnecting after a network error has disrupted the persistent connection. There is no default or limit to the number of attempts.

Command Default

No persistent connections are established. The default delay and initial delay interval is 1 second. There is no default or limit to the number of reconnection attempts.

Command Modes

Interface configuration

Command History

Release	Modification
12.2(4)T	This command was introduced.
12.2(11)T	This feature was implemented on Cisco access server platforms.

Usage Guidelines

Do not use the **dialer redial** command when a dialer profile has been configured with the **dialer persistent** command. Both these configuration commands prompt the router to dial out, so it is desirable to configure only one of them.

Do not use the **dialer idle-timeout** interface configuration command when a dialer profile has been configured with the **dialer persistent** command. Doing so has no effect on the idle timer, which is overridden by the **dialer idle-timeout** command as **dialer idle-timeout 0**.

You can use the **clear interface** EXEC command on the dialer interface to clear unsuccessful dial attempts on a line without interesting traffic; the dialer software continues attempting to bring up the connection as persistent. To disconnect a persistent connection and prevent the software from attempting more dialing, use the **shutdown** interface configuration command.

Once a connection has been brought up as persistent, it cannot be torn down due to a fast-idle timeout.

Examples

The following example shows how to configure a dialer interface for dialer persistent:

```
!
interface dialer 0
 ip address 10.1.1.2 255.255.255.0
 encapsulation ppp
 dialer string 5550189
 dialer pool 1
 dialer-group 1
 dialer persistent delay initial 20
  !
 access-list 101 permit icmp any any
 access-list 101 deny   ip any any
 dialer-list 1 protocol ip list 101
```

Related Commands

Command	Description
dialer-group	Controls access by configuring an interface to belong to a specific dialing group.
dialer-list protocol	Defines a DDR dialer list to control dialing by protocol or by a combination of a protocol and a previously defined access list.
dialer pool	Specifies for a dialer interface which dialing pool to use to connect to a specific destination subnetwork.
dialer redial	Configures redial after failed outbound dial attempts.
dialer string (dialer profiles)	Specifies the string (telephone number) to be used when placing a call from an interface.

dialer pool

To specify, for a dialer interface, which dialing pool to use to connect to a specific destination subnetwork, use the **dialer pool** command in interface configuration mode. To remove the dialing pool assignment, use the **no** form of this command.

dialer pool *number*

no dialer pool *number*

Syntax Description

number	Dialing pool number, in the range 1 through 255.

Command Default Disabled; no default number is specified.

Command Modes Interface configuration

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines This command applies to dialer interfaces only.

Examples The following example shows a dialer interface configuration that is linked to the physical interface configuration shown for BRI 1 in the **dialer pool-member** command section. Dialer interface 1 uses dialer pool 3, of which BRI 1 is a member.

```
! This is a dialer profile for reaching remote subnetwork 10.1.1.1.
interface Dialer1
 ip address 10.1.1.1 255.255.255.0
 encapsulation ppp
 dialer remote-name Smalluser
 dialer string 4540
 dialer pool 3
 dialer-group 1
```

The following example might accompany the previous dialer profile configuration example. Physical interface BRI 1 has a reserved channel in dialer pool 3. That channel is inactive until BRI 1 uses it to place calls.

```
interface BRI1
 encapsulation ppp
 dialer pool-member 1 priority 50
 dialer pool-member 2 priority 50
! BRI 1 has a reserved channel in dialer pool 3; the channel remains inactive
! until BRI 1 uses it to place calls.
 dialer pool-member 3 min-link 1
 ppp authentication chap
```

Related Commands

Command	Description
dialer pool-member	Configures a physical interface to be a member of a dialer profiles dialing pool.
dialer wait-for-carrier-time (map-class)	Specifies the length of time to wait for a carrier when dialing out to the dial string associated with a specified map class.

dialer pool-member

To configure a physical interface to be a member of a dialer profile dialing pool, use the **dialer pool-member** command in interface configuration mode. To remove the configuration, use the **no** form of this command.

dialer pool-member *number* [**priority** *priority*] [**min-link** *minimum*] [**max-link** *maximum*]

no dialer pool-member *number*

Syntax Description

number	Dialing pool number. Range is from 1 to 255.
priority *priority*	(Optional) Specifies the priority of this interface within the dialing pool. • Range is from 1 (lowest) to 255 (highest). The default is 1. • Interfaces with the highest priority are selected first for dialing out.
min-link *minimum*	(Optional) Specifies the minimum number of B channels on the interface that are reserved for the dialing pool. • Range is from 1 to 255. The default minimum is 1. • A reserved channel is inactive until the specified interface uses it to place calls. This option applies to ISDN outgoing interfaces only.
max-link *maximum*	(Optional) Specifies the maximum number of B channels on the interface that can be used by the dialing pool. • Range is from 1 to 255. The default maximum is 255. • This option applies to ISDN interfaces only, and can be configured on both incoming and outgoing calls.

Command Default

The interface is not a member of a dialer profile dialing pool.

Command Modes

Interface configuration (config-if)

Command History

Release	Modification
11.2	This command was introduced.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.
12(33)SRE	This command was modified. Support for SR releases was removed.

Usage Guidelines

This command applies to asynchronous serial, synchronous serial, BRI, and PRI physical interfaces only. It does not apply to the dialer interfaces.

The common number used in the **dialer pool** command and in the **dialer pool-member** command links the physical interface and dialer interface configurations.

The **min-link** keyword and value are used primarily for dial backup.

The Cisco IOS software provides the **dialer max-links** command in interface configuration mode and the **max-link** keyword with the **dialer pool-member** command to specify a maximum number of links. When two linked systems are configured to dial out, only one system needs to have the maximum number of links configured. Otherwise, if both systems dial simultaneously, each will reject the incoming call when it exceeds the specified maximum links. If the maximum number of links is configured to 1 and the dialing out is synchronized, no connection will come up or many retries will be required before a connection stays up. Some suggestions for correcting this behavior are as follows:

- Use only the **dialer max-links** command to restrict the number of connections. The result is the same as configuring the **dialer pool-member** command with the **max-link** keyword.
- If two systems will dial each other and only one link is desired, configure the **dialer max-links** command on just one system.
- Configure the **dialer load-threshold** command on only one side, either local or remote, and configure the **dialer max-links** command on the interface where the **dialer load-threshold** command was configured.

Note Cisco IOS Release 12.2(33)SRE and later releases do not support the **dialer pool-member** command.

Examples

The following example shows that only one channel is available for incoming calls and 22 channels are reserved for outgoing calls for a 23-channel ISDN PRI T1 interface:

```
dialer pool-member 1 min-link 22 max-link 23
```

The following sample output from the **debug dialer** EXEC command indicates that once one incoming call has been received, the next incoming call is denied:

```
Incoming call id 0x3 rejected, exceeded max calls
.
.
.
Incoming call id 0x3 rejected, exceeded
```

The following example reserves 19 channels for an incoming call on a 23-channel ISDN PRI T1 interface:

```
dialer pool-member 1 min-link 5 max-link 24
```

The following example shows the configuration of one ISDN BRI interface to be a member of dialer pool 2 with priority 100:

```
interface BRI2
 encapsulation ppp
 dialer pool-member 2 priority 100
 ppp authentication chap
```

In the following example, BRI physical interface configuration BRI 1 has one reserved channel in dialer pool 3. That channel is inactive until BRI 1 uses it to place calls.

```
interface BRI1
 encapsulation ppp
 dialer pool-member 1 priority 50
 dialer pool-member 2 priority 50
 !BRI 1 has a reserved channel in dialer pool 3; the channel remains inactive
 !until BRI 1 uses it to place calls.
 dialer pool-member 3 min-link 1
 ppp authentication chap
```

Related Commands

Command	Description
dialer load-threshold	Configures bandwidth on demand by setting the maximum load before the dialer places another call to a destination.
dialer pool	Specifies for a dialer interface which dialing pool to use to connect to a specific destination subnetwork.

dialer pre-classify

To force IP Security (IPSec) to check an interesting packet against a dialer-list before enabling a dialer interface, use the **dialer pre-classify** command in crypto-map configuration mode.

dialer pre-classify

Syntax Description

This command has no arguments or keywords.

Command Modes

Crypto-map configuration mode (config-crypto-map)

Command History

Release	Modification
12.3(15)T	This command was introduced.

Usage Guidelines

Use the **crypto map isakmp-profile** command to enter crypto-map configuration mode and create an Internet Security Association and Key Management Protocol (ISAKMP) profile on a crypto map, prior to using the **dialer pre-classify** command.

Examples

The following example shows how to check a dialer-list prior to enabling a dialer interface, by using the **dialer pre-classify** command:

```
Router> enable
Router# configure terminal
Router(config)# crypto map map-name ipsec-isakmp profile isakmp-profile-name
Router(config-crypto-map)# dialer pre-classify
```

Related Commands

Command	Description
crypto map isakmp-profile	Configures an ISAKMP profile on a crypto map.

dialer priority

To set the priority of an interface in a dialer rotary group, use the **dialer priority** command in interface configuration mode. To revert to the default setting, use the **no** form of this command.

dialer priority *number*

no dialer priority

Syntax Description

number	Priority of an interface in a dialer rotary group; the highest number indicates the highest priority. This is a number from 0 through 255. The default value is 0, the lowest priority.

Command Default

No priority is predefined. When priority is defined, the default value is 0.

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

This command is meaningful only for interfaces that are part of dialer rotary groups.

The value 0 indicates the lowest priority, and 255 indicates the highest priority. The **dialer priority** command controls which interfaces within a dialer rotary group will be used first. Higher priority interfaces (configured with higher *n* value) are used first.

The **dialer priority** command gives you the ability to tell the dialer rotary group which free interface (and, by extension for asynchronous interfaces, which modem) to use first. This command applies to outgoing calls only.

For example, a router or access server might have a selection of many modems, some of which are better performers than others. You might have a 19.2-kbps, two 4800-bps, three 1200-bps, and one 300-bps modem on interfaces in one dialer rotary group. You do not want the router or access server to make the call on the 300-baud modem if any of the faster modems are free. You want to use the highest-performance modems first, and the slowest modems last.

Examples

In the following example, asynchronous interface 3 will be used after interfaces with higher priority and before interfaces with lower priority:

```
interface async 3
 dialer priority 5
```

Related Commands

Command	Description
dialer reserved-links	Includes a specified interface in a dialer rotary group.
interface dialer	Defines a dialer rotary group.

dialer redial

To configure redial after failed outbound dial attempts, use the **dialer redial** command in interface configuration mode. To disable redial, use the **no** form of this command.

dialer redial interval *interval-time* **attempts** *redials* [**re-enable** *disable-time*]

no dialer redial

Syntax Description

interval *interval-time*	Time, in seconds, between redial attempts. The time can range from 5 to 2147483 seconds.
attempts *redials*	The maximum number of redial attempts to be performed. The number can range from 0 to 2147483.
re-enable *disable-time*	(Optional) Time, in seconds, for which the interface will be disabled if all redial attempts fail. The time can range from 5 to 2147483 seconds.

Command Default

Redial timer disabled.

Command Modes

Interface configuration

Command History

Release	Modification
12.1(2)	This command was introduced.
12.2(4)T	This command was modified to allow the following: • A disable time can be applied to a dialer profile interface and to a serial dialer. • The dialer can be configured to apply a disable timer without performing any redial attempts. • The dialer may select a different physical dialer on each redial attempt. • The dialer will cycle through all dialer strings or matching dialer maps on each redial attempt before applying the redial interval.

Usage Guidelines

Use this command to customize the number of redial attempts to be made, the interval between redial attempts, and the amount of time the interface will be disabled if all redial attempts fail. Setting **attempts 0** prevents redial attempts without inactivating the **re-enable** option. The **re-enable** option can be applied to both serial dialers and dialer profile interfaces.

When a logical dialer interface such as a dialer profile or a dialer rotary group is used, redial attempts may occur on a different physical dialer on each attempt. The physical dialer selection algorithm may be customized using the **dialer rotor** interface configuration command.

Do not use the **dialer redial** command when a dialer profile has been configured with the **dialer persistent** command. Both these configuration commands prompt the router to dial out, so it is desirable to configure only one of them.

Examples

The following example configures the dialer to make five redial attempts with an interval of 10 seconds between attempts. If all redial attempts fail, the interface will be disabled for 50 minutes.

```
dialer redial interval 10 attempts 5 re-enable 3000
```

Related Commands

Command	Description
debug dialer events	Displays debugging information about the packets received on a dialer interface.
dialer persistent	Forces a dialer interface to be connected at all times, even in the absence of interesting traffic.
dialer rotor	Specifies the method for identifying the outbound line to be used for ISDN or asynchronous DDR calls.

dialer remote-name

To specify the authentication name of the remote router on the destination subnetwork for a dialer interface, use the **dialer remote-name** command in interface configuration mode. To remove the specified name, use the **no** form of this command.

dialer remote-name *user-name*

no dialer remote-name

Syntax Description

user-name	Case-sensitive character string identifying the remote device; maximum length is 255 characters.

Command Default

No remote name is specified.

Command Modes

Interface configuration

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines

This command applies only to dialer interfaces.

Only one remote name can be associated with a dialer interface at a time. You may change the name associated with the dialer interface by reissuing the **dialer remote-name** command. Issuing the **no dialer remote-name** command removes the remote name configuration.

When using Challenge Handshake Authentication Protocol (CHAP) or Password Authentication Protocol (PAP) authentication, *user-name* is the name of the remote device that is authenticating.

Examples

The following partial example sets the name of the remote host to yourhost:

```
interface dialer 1
 dialer remote-name yourhost
```

Related Commands

Command	Description
ppp bap call	Sets PPP BACP call parameters.

dialer reserved-links

To reserve links for dial-in and dial-out, use the **dialer reserved-links** command in interface configuration mode. To clear the link, use the **no** form of this command.

dialer reserved-links {*dialin-link* | *dialout-link*}

no dialer reserved-links

Syntax Description

dialin-link	Link reserved for dial-in.
dialout-link	Link reserved for dial-out.

Command Default By default, no links are reserved.

Command Modes Interface configuration

Command History

Release	Modification
12.0(3)T	This command was introduced.

Examples The following example sets dial in reserved links to 1 and dialout reserved links to 0 on the Dialer0 interface:

```
interface Dialer0
 dialer aaa
 dialer reserved-links 1 0
```

Related Commands

Command	Description
dialer congestion-threshold	Specifies congestion threshold in connected links.
sgbp dial-bids	Allows the stack group to bid for dialout connection.

dialer rotary-group

To include a specified interface in a dialer rotary group, use the **dialer rotary-group** command in interface configuration mode. To remove the specified interface, use the **no** form of this command.

dialer rotary-group *interface-number*

no dialer rotary-group *interface-number*

Syntax Description

interface-number	Number of the previously defined dialer interface in whose rotary group this interface is to be included. This is a number from 0 to 255. The dialer interface is defined by the **interface dialer** command.

Command Default No interfaces are included in a dialer rotary group.

Command Modes Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Examples The following example places asynchronous interfaces 1 and 2 into dialer rotary group 1, defined by the **interface dialer 1** command:

```
hostname central-site
! PPP encapsulation is enabled for interface dialer 1.
interface dialer 1
 encapsulation ppp
 dialer in-band
 ip address 172.18.2.1 255.255.255.0
 ip address 172.16.4.1 255.255.255.0 secondary
!
! The first dialer map command allows the central site and remote site YYY
! to call each other and allows the central site to authenticate site YYY
! when it calls in. The second dialer map command, with no dialer string,
! allows the central site to authenticate remote site ZZZ when it calls in, but
! the central site cannot call remote site ZZZ (no phone number).
 dialer map ip 172.18.2.5 name YYY 14155550134
 dialer map ip 172.16.4.5 name ZZZ
!
! The DTR pulse signals for three seconds on the interfaces in dialer
! group 1. This holds the DTR low so the modem can recognize that DTR has been
! dropped.
pulse-time 3
!
! Interfaces async 1 and async 2 are placed in dialer rotary group 1.
! All of the interface configuration commands (the encapsulation and dialer
! map commands shown earlier in this example) applied to interface
! dialer 1 apply to the physical interfaces assigned to the dialer group.
!
```

```
interface async 1
 dialer rotary-group 1
interface async 2
 dialer rotary-group 1
```

Related Commands

Command	Description
interface dialer	Defines a dialer rotary group.

dialer rotor

To specify the method for identifying the outbound line to be used for ISDN or asynchronous dial-on-demand routing (DDR) calls, use the **dialer rotor** command in interface configuration mode. To remove the specified method, use the **no** form of this command.

dialer rotor {**priority** | **best**}

no dialer rotor {**priority** | **best**}

Syntax Description

priority	Selects the first outbound line with the highest priority; this is the selection criterion that was previously used.
best	Selects the outbound line with the most recent success. If that line also has the most recent failure, then it will try the line with the least recent failure. If that line also has the most recent failure, it will then try an as-of-yet untried outbound line.

Command Default

Disabled

Command Modes

Interface configuration

Command History

Release	Modification
10.0	This command was introduced.

Usage Guidelines

This command allows the router to skip outbound ISDN BRI and asynchronous lines that have problems. This command would not be useful for ISDN PRI, unless your local telephone service provider has problems keeping your lines properly configured.

Examples

The following example configures a dialer interface to select the outbound line that most recently placed a successful call:

```
dialer rotor best
```

Related Commands

Command	Description
dialer priority	Sets the priority of an interface in a dialer rotary group.