



MGCP NAS Package LAPB-TA

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The Media Gateway Control Protocol (MGCP) network access server (NAS) Package Link Access Procedure, Balanced (LAPB)-terminal adapter (TA) feature implements autodetection for the MGCP NAS package, as supported in Cisco IOS Release 12.3(9) under ISDN serial interfaces. This document tells you how to configure autodetection, which allows asynchronous traffic, such as PPP carried over an ISDN line with the LAPB protocol, to be terminated at a Cisco media gateway.

Finding Feature Information in This Module

Your Cisco IOS software release may not support all of the features documented in this module. To reach links to specific feature documentation in this module and to see a list of the releases in which each feature is supported, use the [“Feature Information for MGCP NAS Package LAPB-TA”](#) section on page 29.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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Prerequisites for the MGCP NAS Package LAPB-TA

- You must configure the media gateway for MGCP.
- You must enable the MGCP NAS package on the media gateway.
- You must ensure interoperability with a call agent with Signaling System 7 (SS7) trunking support.
- You must ensure SS7 trunking gateway support.
- In order to accept synchronous PPP calls while autodetecting LAPB or V.120, you must configure PPP autodetection.

Restrictions for the MGCP NAS Package LAPB-TA

- As of Cisco IOS Release 12.3(7) YB, LAPB-terminal adapter (TA) does not support the ability to set a maximum frame size per user.
- Outbound LAPB-TA calls are not supported.
- Autodetected PPP over LAPB-TA and V.120 connections impose a greater overhead on the router than synchronous PPP. The number of simultaneous sessions can be limited by dedicating a pool of virtual terminals to these protocols and limiting the number of virtual terminals in the pool.
- Multilink PPP compression is not supported.
- Autodetection is available only for MGCP NAS calls using the digital bearer type.
- Use of the same T1 line for Integrated Signaling Link Terminator (ISLT) and the MGCP NAS package is not supported.

Information About the MGCP NAS Package LAPB-TA

To configure the MGCP NAS Package LAPB-TA feature, you must understand the following concepts:

- [Example Topology for MGCP NAS Package LAPB-TA, page 2](#)
- [Benefits of MGCP NAS Package LAPB-TA, page 3](#)

For more information on the MGCP NAS package, see *Configuring NAS Package for MGCP*. For more information on autodetection for ISDN serial interfaces, see *Configuring Virtual Asynchronous Traffic over ISDN*.

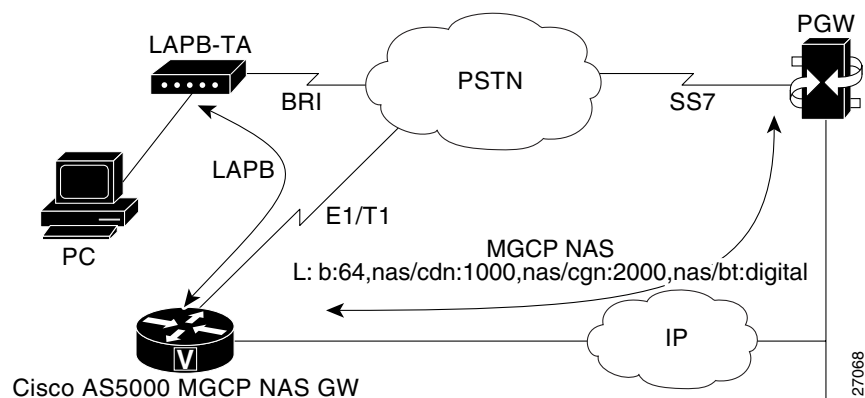
Example Topology for MGCP NAS Package LAPB-TA

Before you configure the autodetection feature, consider the example topology shown in [Figure 1](#). The system consists of a call agent with an SS7 interface and an MGCP NAS gateway and terminal adapters using LAPB encapsulation.

The terminal adapter converts the user's asynchronous PPP traffic to synchronous traffic and encapsulates it with LAPB for point-to-point transmission across a single BRI bearer channel. The incoming call is signaled to the MGCP-based PSTN Gateway (PGW) call agent using SS7. PGW uses

MGCP NAS conventions to set up a digital data call on the E1/T1 interface. If the interface bearing the call is configured with the MGCP NAS Package LAPB-TA feature, it will detect LAPB, PPP, and V.120 and start the applicable protocol or standard to terminate the connection.

Figure 1 *MGCP NAS Package LAPB-TA Example Topology*



Note that the Create Connection (CRCX) MGCP message sent by the call agent includes “nas/bt:digital,” indicating a digital bearer type, which is required for the MGCP NAS Package LAPB-TA feature.

Benefits of MGCP NAS Package LAPB-TA

The MGCP NAS Package LAPB-TA feature enables interoperability with ISDN terminal adapters that use V.120 rate adaptation or LAPB encapsulation and do not signal call type in the SS7 ISDN User Part (ISUP) Initial Address Message (IAM). An MGCP NAS digital data call on an MGCP NAS Package LAPB-TA enabled interface will automatically change its encapsulation and answer such calls.

How to Configure the MGCP NAS Package LAPB-TA

This section contains the following procedures:

- [Configuring Virtual Terminals and Virtual Templates, page 3](#) (required)
- [Configuring the MGCP NAS Package and Guard Timer, page 4](#) (required)
- [Configuring the Virtual Template Interface, page 5](#) (required)
- [Configuring the Dialer Interface to Enable Autodetection, page 6](#) (required)
- [Configuring the Group Asynchronous Interface, page 8](#) (required)
- [Configuring Virtual Terminal Lines, page 10](#) (required)

Configuring Virtual Terminals and Virtual Templates

Perform this task to configure virtual terminals and virtual templates to support asynchronous protocol features.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **vty-async**
4. **vty-async virtual-template** *number*
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none">• Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	vty-async Example: Router(config)# vty-async	Configures all virtual terminal lines on a router to support asynchronous protocol features.
Step 4	vty-async virtual template <i>number</i> Example: Router(config)# vty-async virtual-template 1	Configures virtual terminal lines to support asynchronous protocol functions based on the definition of a virtual interface template.
Step 5	end Example: Router(config)# end	Exits to privileged EXEC mode.

Configuring the MGCP NAS Package and Guard Timer

Perform this task to configure MGCP on the trunking gateway (NAS) and configure the guard timer. NAS calls are rejected when the guard timer expires.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **controller t1** *slot/port*
4. **extsig mgcp**
5. **guard-timer** *milliseconds* [**on-expiry** {**accept** | **reject**}]
6. **ds0-group** *ds0-group-number timeslots timeslot-list type none service mgcp*

7. end

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	controller t1 slot/port Example: Router(config)# controller t1 1/7	Enters controller configuration mode and configures a T1 controller.
Step 4	extsig mgcp Example: Router(config-controller)# extsig mgcp	Configures external signaling control by MGCP for a T1 or E1 trunk controller card.
Step 5	guard-timer milliseconds [on-expiry {accept reject}] Example: Router(config-controller)# guard-timer 10 on-expiry reject	Enables a managed timer for authentication requests.
Step 6	ds0-group ds0-group-number timeslots timeslot-list type none service mgcp Example: Router(config-controller)# ds0-group 0 timeslots 1-24 type none service mgcp	Specifies the DS0 time slots that make up a logical voice port on a T1 or E1 controller, specifies the signaling type by which the router communicates with the PBX or public switched telephone network (PSTN), and defines T1 or E1 channels for compressed voice calls and the channel-associated signaling (CAS) method by which the router connects to the PBX or PSTN.
Step 7	end Example: Router(config-controller)# end	Exits to privileged EXEC mode.

Configuring the Virtual Template Interface

Perform this task to configure a virtual template interface to enable tunneling of PPP.

SUMMARY STEPS

1. enable
2. configure terminal

3. **interface virtual-template** *number*
4. **ip unnumbered** *type number*
5. **ppp authentication** *protocol1* [*protocol2...*]
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface virtual-template <i>number</i> Example: Router(config)# interface virtual-template 1	Creates a virtual template interface that can be configured and applied dynamically in creating virtual access interfaces and enters interface configuration mode.
Step 4	ip unnumbered <i>type number</i> Example: Router(config-if)# ip unnumbered Loopback 0	Enables IP processing on a serial interface without assigning an explicit IP address to the interface.
Step 5	ppp authentication <i>protocol1</i> [<i>protocol2...</i>] Example: Router(config-if)# ppp authentication chap	Enables at least one PPP authentication protocol and specifies the order in which the protocols are selected on the interface.
Step 6	end Example: Router(config-if)# end	Exits to privileged EXEC mode.

Configuring the Dialer Interface to Enable Autodetection

Perform this task to configure the dialer interface to enable autodetection.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface dialer** *dialer-rotary-group-number*
4. **autodetect encapsulation** {[*lapb-ta*] [*ppp*] [*v120*]}
5. **ip unnumbered** *type number*

6. **encapsulation ppp**
7. **dialer in-band**
8. **dialer extsig**
9. **dialer-group** *group-number*
10. **ppp authentication** *protocol1* [*protocol2...*]
11. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface dialer <i>dialer-rotary-group-number</i> Example: Router(config)# interface dialer 1	Defines a dialer rotary group and enters interface configuration mode.
Step 4	autodetect encapsulation {[lapb-ta] [ppp] [v120] } Example: Router(config-if)# autodetect encapsulation ppp v120 lapb-ta	Enables autodetection of LAPB, synchronous PPP, and V.120 encapsulation types while using the MGCP NAS package.
Step 5	ip unnumbered <i>type number</i> Example: Router(config-if)# ip unnumbered Loopback 1	Enables IP processing on a serial interface without assigning an explicit IP address to the interface.
Step 6	encapsulation ppp Example: Router(config-if)# encapsulation ppp	Sets the encapsulation method used by the interface. <ul style="list-style-type: none"> The encapsulation method must be PPP.
Step 7	dialer in-band Example: Router(config-if)# dialer in-band	Specifies that dial-on-demand routing (DDR) is to be supported. <ul style="list-style-type: none"> The in-band keyword specifies that the same interface that sends the data performs call setup and teardown operations between the router and an external dialing device such as a modem. By default, no parity is applied to the dialer string.

	Command or Action	Purpose
Step 8	dialer extsig Example: Router(config-if)# dialer extsig	Configures an interface to initiate and terminate calls using an external signaling protocol.
Step 9	dialer-group <i>group-number</i> Example: Router(config-if)# dialer-group 1	Controls access by configuring an interface to belong to a specific dialing group.
Step 10	ppp authentication <i>protocol1</i> [<i>protocol2...</i>] Example: Router(config-if)# ppp authentication chap	Enables at least one PPP authentication protocol and specifies the order in which the protocols are selected on the interface.
Step 11	end Example: Router(config-if)# end	Exits to privileged EXEC mode.

Configuring the Group Asynchronous Interface

Perform this task to configure the group asynchronous interface so modem and V.110 calls can be received. This part of the NAS configuration is not related to autodetection, although if you use autodetection, you will probably want to be able to accept modem or V.110 calls. NAS configuration is a prerequisite for autodetection.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface group-async** *number*
4. **encapsulation** *encapsulation-type*
5. **dialer in-band**
6. **dialer-group** *group-number*
7. **ppp authentication** *protocol1* [*protocol2...*]
8. **group-range** *low-end-of-interfacerange high-end-of-interfacerange*
9. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none">Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface group-async number Example: Router(config)# interface group-async 0	Configures a master asynchronous interface type and enters interface configuration mode.
Step 4	encapsulation encapsulation-type Example: Router(config-if)# encapsulation ppp	Sets the encapsulation method used by the interface.
Step 5	dialer in-band Example: Router(config-if)# dialer in-band	Specifies that DDR is to be supported. <ul style="list-style-type: none">The in-band keyword specifies that the same interface that sends the data performs call setup and teardown operations between the router and an external dialing device such as a modem.By default, no parity is applied to the dialer string.
Step 6	dialer-group group-number Example: Router(config-if)# dialer-group 1	Controls access by configuring an interface to belong to a specific dialing group.
Step 7	ppp authentication protocol1 [protocol2...] Example: Router(config-if)# ppp authentication chap	Enables at least one PPP authentication protocol and specifies the order in which the protocols are selected on the interface.
Step 8	group-range low-end-of-interfacerange high-end-of-interfacerange Example: Router(config-if)# group-range 3/00 3/107	Creates a list of member asynchronous interfaces (associated with a group interface). <ul style="list-style-type: none">The ends of the interface range are expressed as <i>slot/port</i> for internal modems.
Step 9	end Example: Router(config-if)# end	Exits to privileged EXEC mode.

Configuring Virtual Terminal Lines

Perform this task to enable V.120 and LAPB protocols on virtual terminal lines.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **line vty** *line-number* [*ending-line-number*]
4. **transport input** {**v120** | **lapb-ta**}
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	line vty <i>line-number</i> [<i>ending-line-number</i>] Example: Router(config)# line vty 5 10	Identifies a specific line for configuration and enters line configuration collection mode.
Step 4	transport input { v120 lapb-ta }	Defines which protocols to use to connect to a specific line of the router.
Step 5	end Example: Router(config-line)# end	Exits to privileged EXEC mode.

Configuration Examples for the MGCP NAS Package LAPB-TA

The following example shows the MGCP NAS Package LAPB-TA feature configured on a Cisco media gateway. Significant lines are in bold.

```
Router# show running-config

Building configuration...
!
version 12.3
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
no service password-encryption
service internal
!
hostname host1
!
boot-start-marker
boot system flash:5350
no boot startup-test
boot-end-marker
!
logging queue-limit 100
logging buffered 10000000 debugging
no logging console
enable secret 5 secretpass
enable password epass
!
username user1 password 0 password1
!
!
resource-pool disable
calltracker enable
calltracker call-record terse
spe default-firmware spe-firmware-1
!
!
no aaa new-model
ip subnet-zero
!
!
no ip domain lookup
ip host fuzzy x.x.x.x
!
!
ip cef
vty-async
! enables vty lines to accept async protocol features
vty-async virtual-template 1
! applies virtual template 1 to the vty lines
isdn switch-type primary-ni
!
no voice call carrier capacity active
!
!
controller t1 1/0
    framing sf
    linecode ami
!
controller t1 1/1
    framing sf
    linecode ami
!
controller t1 1/2
    framing sf
    linecode ami
!
controller t1 1/3
    framing sf
    linecode ami
!
controller t1 1/4
    framing sf
    linecode ami
!
```

```

controller t1 1/5
  framing sf
  linecode ami
!
controller t1 1/6
  framing sf
  linecode ami
!
controller t1 1/7
  framing esf
  extsig mgcp
! configure MGCP NAS on T1 1/7
guard-timer 10 on-expiry reject
! reject NAS calls if the guard timer expires
  linecode b8zs
ds0-group 0 timeslots 1-24 type none service mgcp
! configure timeslots to use MGCP
!
!
interface loopback 0
  ip address 10.1.1.19 255.255.255.0
!
interface loopback 1
  ip address 10.2.2.19 255.255.255.0
!
interface loopback 2
  ip address 10.3.3.19 255.255.255.0
!
interface fastethernet 0/0
  ip address x.x.x.x 255.255.255.0
  duplex half
  speed 10
  no keepalive
  no cdp enable
!
interface fastethernet 0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface serial 0/0
  no ip address
  shutdown
  clock rate 2000000
!
interface serial 1/0
  no ip address
  shutdown
!
interface serial 0/1
  no ip address
  shutdown
  clock rate 2000000
!
interface virtual-template 1
  ip unnumbered loopback 0
ppp authentication chap
! use ppp chap for call authentication
!
interface dialer 1
  ip unnumbered loopback 1
  encapsulation ppp
  dialer in-band

```

```
dialer idle-timeout 240
dialer extsig
! enable MGCP NAS on dialer interface
dialer-group 1
autodetect encapsulation ppp v120 lapb-ta
! enable autodetection
ppp authentication chap
!
interface group-async 0
 ip unnumbered loopback 0
 encapsulation ppp
 dialer in-band
 dialer-group 1
 async mode interactive
 fair-queue
 ppp authentication chap
 group-range 3/00 3/107
!
ip classless
no ip http server
!
!
control-plane
!
!
voice-port 1/7:0
!
mgcp
mgcp call-agent x.x.x.x service-type mgcp version 1.0
mgcp package-capability nas-package
!
mgcp profile default
!
dial-peer cor custom
!
!
line con 0
 exec-timeout 0 0
line aux 0
line vty 0 4
 exec-timeout 0 0
 privilege level 15
 no login
 transport input telnet
 transport output telnet
line vty 5 10
 login local
transport input v120 lapb-ta
! allow incoming V.120 and LAPB on these lines
autoselect during-login
autoselect ppp
line 3/00 3/107
 no flush-at-activation
 modem inout
 transport input all
 autoselect ppp
!
!
end
```

Additional References

The following sections provide references related to the MGCP NAS Package LAPB-TA feature.

Related Documents

Related Topic	Document Title
Call Tracker	<i>Call Tracker plus ISDN and AAA Enhancements for the Cisco AS5300 and Cisco AS5800 Feature Overview</i>
ISDN autodetection	<i>Configuring Virtual Asynchronous Traffic over ISDN</i>
MGCP NAS Package	<i>Configuring NAS Package for MGCP</i>
MGCP VoIP	<i>MGCP VoIP Call Admission Control</i>
Virtual terminals	<i>Configuring Protocol Translation and Virtual Asynchronous Devices</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

MIBs

MIBs	MIBs Link
<ul style="list-style-type: none"> CISCO-CALL-TRACKER-MIB 	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Technical Support & Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

This section documents modified commands only.

Modified Commands

- [autodetect encapsulation](#)
- [show call calltracker active](#)
- [show call calltracker history](#)
- [show mgcp nas](#)

autodetect encapsulation

To enable automatic detection of the encapsulation types operating over a point-to-point link to a specified serial or ISDN interface or dialer interface under Media Gateway Control Protocol (MGCP) network access server (NAS) package, use the **autodetect encapsulation** command in interface configuration mode. To disable automatic dynamic detection of the encapsulation types on a link, use the **no** form of this command.

autodetect encapsulation {[lapb-ta] [ppp] [v120]}

no autodetect encapsulation {[lapb-ta] [ppp] [v120]}

Syntax Description

lapb-ta	Link Access Procedure, Balanced (LAPB) for an ISDN terminal adapter.
ppp	PPP encapsulation on the interface.
v120	V.120 encapsulation on B channels.

Defaults

No default behavior or values.

Command Modes

Interface configuration

Command History

Release	Modification
11.2	This command was introduced.
12.0(4)T	The lapb-ta keyword was added.
12.3(7)YB	This command was modified to apply to MGCP NAS packages also.
12.4(6)T	This command was integrated into Cisco IOS Release 12.4(6)T

Usage Guidelines

At least one encapsulation type is required in the command, but you can specify additional encapsulation types, in any order.

Use this command to enable the specified serial or ISDN interface or dialer interface under MGCP NAS package to accept calls and dynamically change the encapsulation in effect on the interface when the remote device does not signal the call type. For example, if an ISDN call does not identify the call type in the Lower Layer Compatibility fields and is using an encapsulation that is different from the one configured on the interface, the interface can change its encapsulation type dynamically.

This command enables interoperability with ISDN terminal adapters that use V.120 encapsulation but do not signal V.120 in the call setup message. An ISDN interface that by default answers a call as synchronous serial with PPP encapsulation can change its encapsulation and answer such calls.

Autodetection of LAPB traffic on an ISDN terminal adapter is possible through addition of the **lapb-ta** keyword to the command line. This allows recognition of incoming LAPB-terminal adapter (TA) calls.

Automatic detection is attempted for 10 seconds after the link is established or the first five packets exchanged over the link, whichever is first.

Examples

The following example configures BRI 0 to call and receive calls from two sites, use PPP encapsulation on outgoing calls, and use Challenge Handshake Authentication Protocol (CHAP) authentication on incoming calls. This example also enables BRI 0 to configure itself dynamically to answer calls that use V.120 but that do not signal V.120.

```
interface bri 0
  encapsulation ppp
  autodetect encapsulation v120
  no keepalive
  dialer map ip 172.17.36.10 name EB1 234
  dialer map ip 172.17.36.9 name EB2 456
  dialer-group 1
  isdn spid1 0146334600
  isdn spid2 0146334610
  isdn T200 1000
  ppp authentication chap
```

The following example enables the LAPB-TA and V.120 protocols for autodetection on the serial interface after you have configured the virtual terminals to handle asynchronous traffic:

```
vtty-async
interface serial0:23
  autodetect encapsulation lapb-ta v120
```

The following example enables PPP encapsulation and LAPB-TA and V.120 protocols for autodetection on the dialer interface under MGCP NAS package:

```
interface Dialer1
  ip unnumbered Loopback1
  encapsulation ppp
  dialer in-band
  dialer idle-timeout 240
  dialer extsig
  dialer-group 1
  autodetect encapsulation ppp v120 lapb-ta
  ppp authentication chap
!
```

Related Commands

Command	Description
encapsulation	Sets the encapsulation method used by the interface.

show call calltracker active

To display all information stored within the Call Tracker active database for all active calls, use the **show call calltracker active** command in EXEC mode.

show call calltracker active [**category** *call-type* | **service** *session-type*] [**reverse**]

Syntax Description	
category	(Optional) Displays Call Tracker data for a specific type of call. The default is to display all calls, regardless of type. When the category keyword is specified with one of the optional call type keywords, Call Tracker displays only calls whose records indicate that category.
<i>call-type</i>	(Optional) Call type for the calls stored within the Call Tracker active database table. Enter one of the following call type keywords: <ul style="list-style-type: none"> • isdn—Displays Call Tracker data for ISDN sync data calls. • modem—Displays Call Tracker data for analog modem calls. • other—Displays Call Tracker data for other call categories. • v110—Displays Call Tracker data for V.110 calls. • v120—Displays Call Tracker data for V.120 calls. • lapb—Displays Call Tracker data for LAPB calls. • syncData—Displays Call Tracker data for sync data calls for call control other than ISDN.
service	(Optional) Displays Call Tracker data with a filter restricting output based on the session type. When the service keyword is specified with one of the optional session type keywords, Call Tracker displays only calls whose records indicate that type of session.
<i>session-type</i>	(Optional) Session type for the calls stored within the Call Tracker active database table. Enter one of the following session type keywords: <ul style="list-style-type: none"> • exec • l2tp • l2f • mp • other • ppp • slip • tcpclear
reverse	(Optional) Displays Call Tracker data in inverted sorting order, from most recent to least recent.

Command Modes EXEC

Command History

Release	Modification
12.1(2)XH	This command was introduced.
12.1(3)T	This command was integrated into Cisco IOS Release 12.1(3)T.
12.2(2)XA	This command was implemented on the Cisco AS5350.
12.2(2)XB1	This command was integrated into Cisco IOS Release 12.2(2)XB1.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.
12.3(7)YB	The signaling type field was added to the command output. Valid values are Auto, Xtern, and LLC. The category field was modified to display V120, LAPB, or syncData for autodetected calls.
12.4(6)T	This command was integrated into Cisco IOS Release 12.4(6)T

Usage Guidelines

This command allows you to display call activity for a single supported call category type, if desired, by using the **category** keyword with one of the optional keywords.

The Call Tracker feature is enabled by entering the **calltracker enable** command. If there is no call on the specified port, the information of the most recent call is displayed. The **show call calltracker active** command shows all calls, regardless of type, unless the **category** keyword and *call-type* argument are used to specify which types of calls are to be shown.

(For detailed information about the Call Tracker feature, refer to the *Cisco IOS Call Tracker* feature document.)

Examples

The following example shows all Call Tracker activity in reverse order, from most recent to least recent. The entries are sorted by call handle, from highest to lowest. The example is for an autodetected LAPB call.

```
Router# show call calltracker active reverse

----- call handle=          16 -----
status=Active, service=PPP, origin=Answer, category=lapb,
DS0 slot/port/dsl/chan=1/0/0/22, called=5555, calling=(n/a)
userid=Snare, ip=1.1.1.50, mask=0.0.0.0
setup=11/12/2000 20:30:50, conn=0.02, phys=0.12, service=0.78, authen=0.75
init rx/tx b-rate=64000/64000, rx/tx chars=2746/2719
resource slot/port=(n/a)/(n/a), mp bundle=0, charged units=0, account id=37
idb handle=0x656CA08C, tty handle=0x65AFD05C, tcb handle=0x00000000,
signaling=Auto
.
.
.
```

[Table 1](#) describes the significant fields shown in the display.

Table 1 *show call calltracker active reverse* Field Descriptions

Field	Description
status	Status of the calls in the active database.
service	Session type for the call.
category	Call type category. For autodetected calls, the values are V120, LAPB, or syncData.

Table 1 *show call calltracker active reverse Field Descriptions (continued)*

Field	Description
DS0 slot/port/ds1/chan	Number of the slot in the chassis, the applique that is being used (in the case of a card that supports multiple DS3 controllers), the DS1 trunk within the controller, and the channel, or time slot, within the DS1 trunk on which the call resides.
setup	The absolute time, relative to when the network access server (NAS) was booted, when the call was indicated, for instance, by the telecommunications network.
conn	The time in ticks of the CPU clock, relative to the setup time, when the connection was established between the time slot of the incoming call and the appropriate local resources in the NAS such as the digital signal processor (DSP).
phys	The time in ticks of the CPU clock, relative to the setup time, when the physical link became ready. For a modem, this time would be when the carrier came up and error control and compression were completely negotiated.
service	The time in ticks, relative to the setup time, when the service was determined for the call type.
authen	The time in ticks of the CPU clock, relative to the setup time, when the user credentials were authenticated. Authentication may involve a Challenge Handshake Authentication Protocol (CHAP) challenge or response authentication for a PPP call, and the associated delay, through RADIUS or TACACS, in the external lookup.
signaling	Signaling type. Valid values are: <ul style="list-style-type: none"> • Auto—Autodetected calls. • LLC—ISDN signaled calls. • Xtrnl—External signaling protocols, such as Media Gateway Control Protocol (MGCP). • Unknwn—Unknown signaling types.

Related Commands

Command	Description
calltracker enable	Enables Call Tracker on the access server.
show call calltracker handle	Displays all information stored within the Call Tracker active or history database table for a specified unique call handle identifier.
show call calltracker history	Displays all information stored within the Call Tracker history database table for the most recent disconnected calls.
show call calltracker summary	Displays Call Tracker activity and configuration information such as the number of active calls and the history table attributes.

show call calltracker history

To display all information stored within the Call Tracker history database table for the most recent historical calls, use the **show call calltracker history** command in EXEC mode.

show call calltracker history [**category** *call-type* | **service** *session-type* | **subsystem** *subsystem-type*] [**reverse**]

Syntax Description	
category	(Optional) Displays Call Tracker data for a specific type of call. The default is to display all calls, regardless of type. When the category keyword is specified with one of the optional call type keywords, Call Tracker displays only calls whose records indicate that category.
<i>call-type</i>	(Optional) Call type for the calls stored within the Call Tracker history database table. Enter one of the following call type keywords: <ul style="list-style-type: none"> • isdn—Displays Call Tracker data for calls on the ISDN. • modem—Displays all of the information calls. • other— Displays Call Tracker data for other call categories. • v110—Displays Call Tracker data for V.110 calls. • v120—Displays Call Tracker data for V.120 calls.
service	(Optional) Displays Call Tracker data with a filter restricting output based on the session type. When the service keyword is specified with one of the optional session type keywords, Call Tracker displays only calls whose records indicate that session type.
<i>session-type</i>	(Optional) Session type for the calls stored within the Call Tracker history database table. Enter one of the following session type keywords: <ul style="list-style-type: none"> • exec • l2tp • l2f • mp • other • ppp • slip • tcpclear
subsystem	(Optional) Displays Call Tracker historical data with a filter restricting output based on the Cisco IOS subsystem that was responsible for terminating the call. When the subsystem keyword is specified with one of the optional subsystem type keywords, Call Tracker displays only those historical calls whose records indicate that they were terminated by that type of subsystem.

<i>subsystem-type</i>	<p>(Optional) Subsystem type responsible for terminating calls stored within the Call Tracker history database table. Enter one of the following subsystem type keywords:</p> <ul style="list-style-type: none"> • admin • csm • exec • isdn • modem • mica • none • rpm • vpn • vtsp <p>Although this information requires a more detailed understanding of Cisco IOS software than that of the average user, it is useful to Cisco Technical Support personnel for troubleshooting connection issues.</p>
reverse	(Optional) Displays Call Tracker data in inverted sorting order, from most recent to least recent.

Defaults

Specific activity and configuration information is not displayed.

Command Modes

EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2	This command was integrated into Cisco IOS Release 12.2.
12.2(11)T	The reverse , service , and subsystem keywords were added and this command was integrated into Cisco IOS Release 12.2(11)T.
12.3(7)YB	The signaling type field was added to the command output. Valid values are Auto, Xtern, and LLC. The category field was modified to display V120, LAPB, or syncData for autodetected calls.
12.4(6)T	This command was integrated into Cisco IOS Release 12.4(6)T

Usage Guidelines

The **show call calltracker history** command allows you to display the call history for a single supported call category type or service type, if desired, by using the **category** or **service** keywords, respectively. Completed calls can be filtered based upon the disconnecting subsystem by using the **subsystem** keyword. For all tabular forms of the **show call calltracker history** command, the sorting order may be inverted by using the **reverse** keyword to give most-recent to least-recent collation.

Examples

The following example shows Call Tracker historical data for an incoming autodetected MGCP NAS V.120 call with a normal disconnect by the MGCP NAS subsystem:

```
----- call handle=          1 -----
status=History, service=PPP, origin=Answer, category=V120,
DS0 slot/port/ds1/chan=1/7/7/23, called=5555, calling=1000
userid=Mogadishu, ip=1.1.1.52, mask=0.0.0.0
setup=11/18/2004 09:34:04, conn=0.11, phys=0.11, service=0.80, authen=0.76
init rx/tx b-rate=56000/56000, rx/tx chars=36646/36533
resource slot/port=(n/a)/(n/a), mp bundle=0, charged units=0, account
id=(n/a)
duration(sec)=133.70, disc subsys=MGCP, disc code=0x66
disc text=User request, sig type=Auto
-----
```

Table 2 describes the significant fields shown in the display.

Table 2 *show call calltracker history subsystem isdn Field Descriptions*

Field	Description
status	State of the call record in the Call Tracker database. The record can be active or historical.
service	Session type for the call.
category	Call type category. For autodetected calls, the values are V120, LAPB, or syncData.
DS0 slot/port/ds1/chan	Number of the slot in the chassis, the applique that is being used (in the case of a card that supports multiple DS3 controllers), the DS1 trunk within the controller, and the channel, or time slot, within the DS1 trunk on which the call resides.
setup	The absolute time, relative to when the network access server (NAS) was booted, when the call was indicated, for instance, by the telecommunications network.
conn	The time in ticks of the CPU clock, relative to the setup time, when the connection was established between the time slot of the incoming call and the appropriate local resources in the NAS such as the digital signal processor (DSP).
phys	The absolute time, relative to when the NAS was booted, at which the physical link became ready. For a modem, this time would be when the carrier came up and error control and compression were completely negotiated.
service	The time in ticks of the CPU clock, relative to the setup time, when the service was determined for the call type.
authen	The absolute time, relative to when the NAS was booted, at which the user credentials were authenticated. Authentication may involve a Challenge Handshake Authentication Protocol (CHAP) challenge or response authentication for a PPP call, and the associated delay, through RADIUS or TACACS, in the external lookup.
disc subsys	The subsystem that disconnected the call.
disc code	Disconnecting code—a numeric code unique within the disconnecting subsystem that is of local significance (internal and proprietary).

Table 2 *show call calltracker history subsystem isdn Field Descriptions (continued)*

Field	Description
disc text	Message that gives a textual explanation for why the disconnection occurred. This message is of local significance (internal and proprietary).
signaling	Signaling type. Valid values are: <ul style="list-style-type: none"> • Auto—Autodetected calls. • LLC—ISDN signaled calls. • Xtrnl—External signaling protocols, such as MGCP. • Unknwn—Unknown signaling types.

Related Commands

Command	Description
show call calltracker active	Displays all information stored within the Call Tracker active database for all active calls.
show call calltracker handle	Displays all information stored within the Call Tracker active or history database table for a specified unique call handle identifier.
show call calltracker summary	Displays Call Tracker activity and configuration information such as the number of active calls and the history table attributes.

show mgcp nas

To display Media Gateway Control Protocol (MGCP) network access server (NAS) information for data ports, use the **show mgcp nas** command in privileged EXEC mode.

```
show mgcp nas {dump slot port channel | info}
```

Syntax Description

dump slot port channel	Displays NAS information for the specified port and channel. The arguments are as follows: <ul style="list-style-type: none"> <i>slot</i>—Chassis slot for interface card. Values are as follows: <ul style="list-style-type: none"> – Cisco AS5350: From 0 to 3. – Cisco AS5400: From 0 to 7. – Cisco AS5850: From 0 to 5 and from 8 to 13. Slots 6 and 7 are reserved for the route switch controller (RSC). <i>port</i>—Modem interface port. Values are as follows: <ul style="list-style-type: none"> – Cisco AS5350: For T1/E1, from 0 to 7. For T3, from 1 to 28. – Cisco AS5400: For T1/E1, from 0 to 7. For T3, from 1 to 28. – Cisco AS5850: For T1/E1, from 0 to 23. For T3, from 1 to 28. <i>channel</i>—T1 or E1 channel. Values for T1 are from 1 to 24. Values for E1 are from 1 to 31.
info	Displays status of NAS channels.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(1)T	The show mgcp command was introduced on the Cisco AS5300.
12.1(3)T	The show mgcp command output was updated to display additional gateway and platform information.
12.1(5)XM	The show mgcp command output was updated to display additional gateway and platform information.
12.2(2)T	The show mgcp command was implemented on the Cisco 7200 series and this command was integrated into Cisco IOS Release 12.2(2)T.
12.2(2)XA	The profile keyword was added to the show mgcp command.
12.2(4)T	This command was integrated into Cisco IOS Release 12.2(4)T.

Release	Modification
12.2(2)XB	<p>The output for the show mgcp command was enhanced to display the status of MGCP System Resource Check (SRC) Call Admission Control (CAC) and Service Assurance Agent (SA Agent) CAC. (Refer to the Cisco IOS Release 12.2(2) XB online document <i>MGCP VoIP Call Admission Control</i>.)</p> <p>In addition, the nas dump slot port channel and nas info keywords and arguments were added to the show mgcp command. Because the number of keywords increased, the command-reference page for the show mgcp command was separated into the following command-reference pages:</p> <ul style="list-style-type: none"> • show mgcp • show mgcp connection • show mgcp endpoint • show mgcp nas • show mgcp profile • show mgcp statistics
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T. Support for the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 is not included in this release.
12.2(11)T	This command is supported on the Cisco AS5300, Cisco AS5350, Cisco AS5400, Cisco AS5800, and Cisco AS5850 in this release.
12.3(7)YB	The valid values for the bearer cap field of the show mgcp nas dump command output were changed to include LAPB, V.120, and sync data. The Signaling field was added to the show mgcp nas dump command output. See Table 3 .
12.4(6)T	This command was integrated into Cisco IOS Release 12.4(6)T

Examples

The following is sample output from this command for an autodetected V.120 call:

```
Router# show mgcp nas dump 1 7 24

Slot 1 state=Up
Port 7 state=Up
State In Use PortCb=0x6577949C ss_id=0x0 handle=0x65C88228
Bearer Cap=V.120 call_id=1 conn_id=6577B8EC
Sig Type=Autodetect
Events req- nas/crq- req id=7 :nas/of- req id=7 :
Endpt name=S1/DS1-7/24
call_id = 1, conn_id=0x6577B8EC cgn=1000 cdn=5555
Rx packets=610 Rx bytes=73242 Tx packets 716 Tx bytes 72987
```

[Table 3](#) describes the significant fields shown in the display.

Table 3 *show mgcp nas dump* Field Descriptions

Field	Description
Slot state	Status of specified slot.
Port state	Status of specified port.
State	Call status for the specified channel.

Table 3 *show mgcp nas dump Field Descriptions*

bearer cap	<p>Bearer capability. Values are:</p> <ul style="list-style-type: none"> • Modem • LAPB • V.110 • V.120 • Digital 64 • Digital 56 <p>V.110, V.120, modem, or digital values are displayed when autodetection is not enabled and the signaling type is set to External. LAPB, V.120, and digital values are displayed if autodetection is enabled, and the signaling type is set to Autodetect.</p>
call_id	Call identification for the currently active call, if any.
conn_id	Connection identification for the currently active call, if any.
Signaling	<p>Call type signaling. Values are:</p> <ul style="list-style-type: none"> • External—Call type is signaled by the call agent. • Autodetect—Call type is autodetected by the gateway.
Events req	List of NAS events requested, if any, and their request IDs. The request ID identifies the MGCP message from the call agent that requested the events.
Endpt name	MGCP endpoint name.

The following sample output from this command shows the state, either Idle or In Use, for each channel:

```
Router# show mgcp nas info
```

```
Number of ports configured=1
Slot 1 configured slot state=Up Port 7 state=Up
====Port 7 Channel States=====
 0 Idle
 1 Idle
 2 Idle
 3 Idle
 4 Idle
 5 Idle
 6 Idle
 7 Idle
 8 Idle
 9 Idle
10 Idle
11 Idle
12 Idle
13 Idle
14 Idle
15 Idle
16 Idle
17 Idle
18 Idle
19 Idle
20 Idle
21 Idle
22 Idle
```

■ show mgcp nas

23 In Use

=====

Related Commands

Command	Description
debug mgcp	Enables debug traces for MGCP errors, events, media, packets, and parser.
mgcp	Allocates resources for the MGCP and starts the daemon.
security password-group	Defines the passwords used by gatekeeper zones and associates them with an ID for gatekeeper-to-gatekeeper authentication.
show mgcp	Displays information for MGCP parameters.
show mgcp connection	Displays information for active MGCP-controlled connections.
show mgcp endpoint	Displays information for MGCP-controlled endpoints.
show mgcp profile	Displays values for MGCP profile-related parameters.
show mgcp statistics	Displays MGCP statistics regarding received and transmitted network messages.

Feature Information for MGCP NAS Package LAPB-TA

Table 4 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command reference documentation.

Cisco IOS software images are specific to a Cisco IOS software release, a feature set, and a platform. Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.



Note

Table 4 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 4 Feature Information for MGCP NAS Package LAPB-TA

Feature Name	Releases	Feature Information
MGCP NAS Package LAPB-TA	12.3(7)YB 12.4(6)T	<p>The Media Gateway Control Protocol (MGCP) network access server (NAS) Package Link Access Procedure, Balanced (LAPB)-terminal adapter (TA) feature implements autodetection for the MGCP NAS package, as supported in Cisco IOS Release 12.3(9) under ISDN serial interfaces. Autodetection allows asynchronous traffic, such as PPP carried over an ISDN line with the LAPB protocol, to be terminated at a Cisco media gateway.</p> <p>The following commands were modified by this feature: autodetect encapsulation, show call calltracker active, show call calltracker history, show mgcp nas.</p> <p>In 12.3(7)YB, this feature was introduced.</p> <p>In 12.4(6)T, this feature was integrated into Release 12.4(6)T</p>

Glossary

ISUP—ISDN User Part. SS7 protocol layer that defines the protocol used to prepare, manage, and release trunks that carry voice and data between calling and called parties.

LAPB—Link Access Procedure, Balanced. Data link layer protocol in the X.25 protocol stack. LAPB is a bit-oriented protocol derived from HDLC.

MGCP—Media Gateway Control Protocol. A merging of the IPDC and SGCP protocols.



Note

See *Internetworking Terms and Acronyms* for terms not included in this glossary.

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