



Loopback Interface

bintec-Dm 743-I

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I Related Documents

bintec-Dm 704-I Configuration and Monitoring

bintec-Dm 772-I Common Configuration for Interfaces

Chapter 1 Introduction

1.1 The loopback interface

The loopback interface is a virtual interface that does not physically exist in the device, however it carries out all the functions of a normal interface. As many loopback interfaces as required can be configured.

A loopback interface has the following characteristics:

- It is always active (UP), unless it has been specifically disabled with the **SHUTDOWN** command located in the interface configuration menu.
- Packets destined for the loopback interface are locally processed.
- Packets routed through the loopback interface (not destined to the interface itself):
 - Are dropped without provoking any type of error provided that there is no *virtual link* with another loopback interface.
 - Are routed towards the other end of the virtual link provided that there is a virtual link with another loopback interface.
- Traffic is never received through a loopback interface, provided that there is no virtual link with another loopback interface.

Chapter 2 Configuration

2.1 Creating a loopback interface

The loopback interface must be created through the **ADD DEVICE** command in the general configuration menu.

Syntax:

```
Config>ADD DEVICE LOOPBACK <interface_id>
```

- *<interface_id>* this is the identifier for loopback interface to be created.

Example:

```
*CONFIG

Config>ADD DEVICE LOOPBACK 1
Config>
```

You can check the created interface has been correctly added by listing the existing interfaces in the device:

```
Config>LIST DEVICES

Interface      Connector      Type of interface
ethernet0/0    LAN1           Fast Ethernet interface
serial0/0      SERIAL0/WAN1   Frame Relay
serial0/1      SERIAL1/WAN2   Synchronous Serial Line
serial0/2      SERIAL2/WAN3   X25
bri0/0         BRI/ISDN1      ISDN Basic Rate Int
x25-node       ---            Router->Node
loopback1      ---            Loopback
Config>
```

2.2 Deleting a loopback interface

To delete a loopback interface, use the **NO DEVICE** command in the general configuration menu.

Syntax:

```
Config>NO DEVICE <interface_name>
```

- *<interface_name>* name of the interface to delete (*loopbackX*, *X*=Interface Identifier).

Example:

```
*CONFIG

Config>NO DEVICE LOOPBACK1
Config>
```

You can check the created interface has been correctly deleted by listing the existing interfaces in the device:

```
Config>LIST DEVICES

Interface      Connector      Type of interface
ethernet0/0    LAN1           Fast Ethernet interface
serial0/0      SERIAL0/WAN1   Frame Relay
serial0/1      SERIAL1/WAN2   Synchronous Serial Line
serial0/2      SERIAL2/WAN3   X25
bri0/0         BRI/ISDN1      ISDN Basic Rate Int
x25-node       ---            Router->Node
loopback1      ---            Loopback
Config>NO DEVICE LOOPBACK1
Config>LIST DEVICES

Interface      Connector      Type of interface
ethernet0/0    LAN1           Fast Ethernet interface
serial0/0      SERIAL0/WAN1   Frame Relay
```

```
serial0/1          SERIAL1/WAN2  Synchronous Serial Line
serial0/2          SERIAL2/WAN3  X25
bri0/0             BRI/ISDN1     ISDN Basic Rate Int
x25-node           ---          Router->Node
Config>
```

2.3 Configuring the loopback interface

The loopback interfaces configuration commands must be entered at the configuration prompt associated to these (*loopbackX config*>). To access the configuration menu for a loopback interface, enter **NETWORK <interface_loopback>** from the general configuration menu, where **<interface_loopback>** is the name of the loopback interface previously created in the device.

For example, if you want to access the **loopback1** interface, enter:

```
Config>NETWORK loopback1

-- Loopback interface configuration --
loopback1 config>
```

There are certain commands which are common for all the device's interfaces. These commands are described in the manual on configuring common interfaces (Dm 772-I Common Configurations for Interfaces).

Command	Function
? (AYUDA)	Displays the available commands or their options.
NO	Negates the command or establishes the default value for a parameter.
VIRTUAL-LINK	Establishes a virtual link with another Loopback interface.
EXIT	Exits the specific configuration menu for the Loopback interface.

2.3.1 VIRTUAL-LINK

This establishes a virtual link with another loopback interface. The link is point-to-point, i.e. the link only exists between two loopback interfaces.

Syntax:

```
loopbackX config>virtual-link
<word>      Shared virtual link name
```

Example:

Creating a virtual link between two Loopback interfaces.

```
Config>network loopback1
loopback1config>virtual-link vlink
Config>
Config>network loopback2
loopback2config>virtual-link vlink
```

If you try and add more than two interfaces to this link, an error message is displayed:

```
CLI Error: Multipoint not supported. There are already two interfaces attached
CLI Error: Command error
```

2.3.1.1 NO VIRTUAL-LINK

Permits you to eliminate the virtual link to another interface.

```
loopbackX config>no virtual-link <virtual-link name>
```

Chapter 3 Monitoring

3.1 Monitoring the loopback interface

The loopback interface does not have any specific type of monitoring.

```
+NETWORK LOOPBACK1
Loopback monitoring unavailable
+
```

In order to know the interface status and the statistics, we need to go to the generic monitoring commands. These are described in the following sections and in more detail in the manual *bintec-Dm 704-I Configuration and Monitoring*.

3.2 Interface status

The interface status can be discovered through the **CONFIGURATION** command from the monitoring menu:

```
+CONFIGURATION
Bintec's Router, XXX S/N: 403/00567
P.C.B.=43 Mask=0502 Microcode=0000 CLK=49152 KHz BUSCLK=49152 KHz PCICLK=327
68 KHz
ID: AT-8F32R L2.156
Boot ROM release:
  BIOS CODE VERSION: 01.09.05 Dec 2 2005 13:33:58
  gzip Nov 23 2005 09:32:38
  io1 Dec 2 2005 13:33:50
  io2 Nov 23 2005 09:32:09
  io3 Dec 2 2005 13:33:50
  START FROM FLASH L0 Watchdog timer Enabled
Software release: 10.7.0 Jan 17 2006 17:31:11
Compiled by INTEGRATOR on INTEGRATOR2000
Hostname: Active user:
Date: Thursday, 01/20/06 Time: 21:25:20
Router uptime: 3m18s
Num Name Protocol
0 IP DOD-IP
3 ARP Address Resolution Protocol
4 H323 H323
6 DHCP Dynamic Host Configuration Protocol
11 SNMP SNMP
Information Protocol
17 SIP SIP
7 interfaces:
Connector Interface MAC/Data-Link Status
LAN1 ethernet0/0 Ethernet/IEEE 802.3 Up
SERIAL0/WAN1 serial0/0 Frame Relay Down
SERIAL1/WAN2 serial0/1 HDLC Down
SERIAL2/WAN3 serial0/2 X25 Down
BRI/ISDN1 bri0/0 BRI Net Up
--- x25-node internal Up
--- loopback1 Null device Up SNMP OperStatus:
Interface OperStatus
ethernet0/0 Up
serial0/0 Down
serial0/1 Down
serial0/2 Down
bri0/0 Up
x25-node Up
loopback1 Up
+
```

The most common interface states (*Interface status / SNMP OperStatus*) are as follows:

- Up / Up: the interface is active.
- Disabled / Down: the interface is not operative, as it has been manually disabled through the **SHUTDOWN** command from the interface configuration menu.

For further information on all the possible interface states, please see manual *bintec-Dm 704-I Configuration and Monitoring*.

3.3 Interface statistics

Through the **STATISTICS** command found in the monitoring menu, you can check how many packets have been transmitted (dropped) by the interface and the number of corresponding bytes.

+STATISTICS						
Interface	Unicast		Multicast		Bytes	Bytes
	Pqts	Rcv	Pqts	Rcv	Received	Transmitted
ethernet0/0		0		295	197820	0
serial0/0		0		0	0	0
serial0/1		0		0	0	0
serial0/2		0		0	0	0
bri0/0		0		0	0	0
x25-node		0		0	0	0
loopback1		0		0	0	3
+						

Logically the reception statistics remain at zero while those for the transmission display the data corresponding to the packets that have been transmitted by the interface and therefore dropped without notification.

3.4 Loopback interface events

There are three events that are directly related to the loopback interface; events 61, 66 and 67 in the GW subsystem.

GW.061	C-INFO	Ifc %s dsc pkt prt %d
--------	--------	-----------------------

GW.061

Level: Common informational comment, INFO-N/C-INFO

Syntax:

GW.061 Ifc *interface_name* dsc pkt prt *protocol_number*

Description:

Data is sent to an interface (from which the number, the type and the interface number of this type is given), which is dropped without informing the sending agent. The data protocol number is also given complying with the following table:

Number	Initials	Name
0	IP	Internet Protocol
1	X.28	X.28
2	IPv6	IP version 6 (IPng)
3	ARP	Address Resolution Protocol
4	H.323	H.323
6	DHCP	Dynamic Host Configuration Protocol
11	SNMP	Simple Network Management Protocol
12	OSPF	Open Shortest Path First
13	RIP	Routing Information Protocol
15	DEP	Dataphone Protocol
23	ASRT	Adaptive Source Routing Transparent Enhanced Bridge
26	DLS	Data Link Switching

GW.066

Level: Frequently produced events, P-TRACE

Syntax:

GW.066 Ifc *interface_name* rcv frm *source* to *destination*, prot *protocol_number*

Description:

Data has been received in an interface (which provides the name). This also indicates the packet's source and destination as well as the protocol number.

```
GW.067      Incom pack disc no act int, int %s
```

GW.067

Level: Internal error, UI-ERROR

Syntax:

GW.066 Incom pack disc no act int, int *interface_name*

Description:

The packet has been dropped because the interface is down.