



## **Common Configuration for Interfaces**

**bintec Dm772-I**

Copyright© Version 11.0B bintec elmeg

## Legal Notice

### Warranty

This publication is subject to change.

bintec offers no warranty whatsoever for information contained in this manual.

bintec is not liable for any direct, indirect, collateral, consequential or any other damage connected to the delivery, supply or use of this manual.

# Table of Contents

I	Related Documents. . . . .	1
Chapter 1	Common Configurations for Interfaces . . . . .	2
1.1	Introduction . . . . .	2
1.2	Common Configuring for Interfaces . . . . .	2
1.2.1	[NO] BANDWIDTH . . . . .	2
1.2.2	[NO] BFD . . . . .	2
1.2.3	[NO] DESCRIPTION . . . . .	3
1.2.4	[NO] IFLINKUP-DOWN-TRAPS . . . . .	3
1.2.5	[NO] INPUT-BURST . . . . .	3
1.2.6	[NO] INPUT-LOW. . . . .	4
1.2.7	[NO] IP . . . . .	4
1.2.8	[NO] IPv6 . . . . .	4
1.2.9	[NO] LOAD-INTERVAL . . . . .	4
1.2.10	[NO] OUTPUT-FAIR . . . . .	4
1.2.11	[NO] PPP . . . . .	5
1.2.12	[NO] SERVICE-POLICY . . . . .	5
1.2.13	[NO] SHUTDOWN . . . . .	5
1.2.14	[NO] UPDATE LEVEL-INDICATOR . . . . .	5
1.2.15	[NO] VRF . . . . .	6
1.2.16	EXIT . . . . .	6
1.3	Fixed-number-snmp. . . . .	6



## I Related Documents

bintec Dm702-I TCP-IP Configuration

bintec Dm715-I Bandwidth Reservation System

bintec Dm754-I Network Service Level Advisor

bintec Dm779-I BDF Protocol

bintec Dm795-I Policy-Map Class-Map

bintec Dm805-I IPv6 Addressing

# Chapter 1 Common Configurations for Interfaces

## 1.1 Introduction

This manual describes generic configuration commands that are not specific to a particular interface, but are common to several.

This manual includes the following sections:

- Accessing the configuration menu for an interface.
- Common configuration commands.

For further information on interfaces, please see the manual associated to the specific network interface whose configuration environment you wish to access.

## 1.2 Common Configuring for Interfaces

To access the configuration menu for an interface, enter **network <interface\_name>** from the general configuration menu (where **interface\_name** is the name of the associated interface). To find out which interfaces are available, enter **list devices** in the general configuration menu.

For example, to access the FR1 interface enter:

```
Config>network fr1
-- Generic FR User Configuration --
fr1 config>
```

### 1.2.1 [NO] BANDWIDTH

Intended bandwidth, in kilobits per second. The bandwidth command sets a parameter that communicates the current bandwidth to the SNMP protocol. Since this parameter is only there for information purposes, the actual bandwidth of an interface cannot be adjusted using this command.

*Syntax:*

```
<interface_name> config>bandwidth <value>
```

*Example:*

```
<interface_name> config>bandwidth ?
  <1..1000000000>      Value in kbps
<interface_name> config>bandwidth 5000
<interface_name> config>
```

**Command history:**

Release	Modification
11.01.07	The <i>bandwidth</i> command was introduced as of version 11.01.07.

### 1.2.2 [NO] BFD

Parameters to negotiate Bidirectional Forwarding Detection (BFD) session timers are set in the configuration of each interface. For further information, please see *bintec Dm779-I BFD Protocol*.

*Syntax:*

```
<interface_name> config>bfd <options>
```

*Example:*

```
<interface_name> config>bfd ?
  interval      Set desired minimum transmit interval
  list          List BFD configuration
  min-rx        Set required minimum receive interval
  multiplier    Set desired detect time multiplier
  version       Set desired BFD protocol version
```

```
<interface_name> config>bfd interval ?
<50..999> milliseconds
<interface_name> config>bfd interval 50
<interface_name> config>
```

### 1.2.3 [NO] DESCRIPTION

Sets a description indicating how the interface is going to be used.

**Syntax:**

```
<interface_name> config>description <description>
```

**Example:**

```
ethernet0/0 config>description Fast-Ethernet
ethernet0/0 config>
```



#### Note

The description command length is limited to 256 characters. This must be entered on different lines, each one containing up to 64 characters.

### 1.2.4 [NO] IFLINKUP-DOWN-TRAPS

Enables (or disables) the **ifLinkUp** and **ifLinkDown** trap sending options. Trap sending is enabled by default.

**Syntax:**

```
<interface_name> config>iflinkup-down-traps
```

**Example:**

```
ethernet0/0 config>iflinkup-down-traps
ethernet0/0 config>
```

**Command history:**

Release	Modification
11.00.07	The <i>iflinkup-down-traps</i> command was introduced as of version 11.00.07.
11.01.02	The <i>iflinkup-down-traps</i> command was introduced as of version 11.01.02.

### 1.2.5 [NO] INPUT-BURST

Configures the maximum number of packets received and processed in burst. Burst processing increases efficiency and helps improved features reach greater speeds. This mode is only used when there is a high load, regardless of the value configured.

The **queue** monitoring command displays the maximum number of packets that can be processed in a burst, as explained in the *bintec Dm704-I Configuration and Monitoring* manual. The value shown may differ from that configured by the user, due to interface limitations. Since this parameter is not supported in some interfaces, it cannot be configured at all times and values may not always appear during monitoring.

**Syntax:**

```
<interface_name> config>input-burst <max>
```

**max:** Maximum number of packets in each reception burst.

**Example:**

```
ethernet0/0 config>input-burst 32
ethernet0/0 config>
```



#### Note

This configuration command is not available for all interfaces.

## 1.2.6 [NO] INPUT-LOW

Configures the water mark for flow control in an interface. If the number of input buffers in the interface falls below this value, packets are marked to indicate the scarcity of resources.

This command works together with the **output-fair** command. The transmission interface checks the number of packets waiting to be transmitted. If the value is bigger than the one considered fair for that interface, and the packet comes from an interface that lacks resources, said packet is discarded and returned to the input interface without attempting to transmit it.

*Syntax:*

```
<interface_name> config>input-low <1..1024>
```

Default depends on the interface.

**Command history:**

Release	Modification
11.00.03	The <i>input-low</i> command was introduced as of version 11.00.03.

## 1.2.7 [NO] IP

If the interface is IP compatible, all relevant parameters can be configured here. For further information, please see *bintec Dm702-I TCP-IP Configuration*.

## 1.2.8 [NO] IPv6

If the interface is compatible with IPv6, all relevant parameters can be configured here. For further information, please see *bintec Dm805-I IPv6 Addressing*.

## 1.2.9 [NO] LOAD-INTERVAL

Configures the transfer load interval. This is used to change the length of time during which data is used to calculate the load statistics.

Admissible values range between 30 and 600 seconds and must always be in multiples of 30. If you don't configure one, 300 seconds will be used by default.

If you want brief traffic bursts (to cause more reactions than usual over a continuous period) then shorten the length of time used to calculate the average load.

For instance, if the load interval is established at 30 seconds, the new data is used to calculate the load during a 30-second period.

*Syntax:*

```
<interface_name> config>load-interval ?
    <30..600> Value in the specific range
```

*Example:*

```
ethernet0/0 config>load-interval 30
ethernet0/0 config>
```

## 1.2.10 [NO] OUTPUT-FAIR

Configures the right output queue for an interface. If the number of output buffers queued in the interface exceeds this value, packets from an interface that lacks resources, are discarded.

This command works together with the **input-low** command. The receive interface marks the packets if it considers it's running out of buffers (that is, if the number of input buffers available is below the **input-low** parameter). The transmission interface will then discard the buffer (and return it to the input interface) without attempting to transmit if its output queue exceeds the **output-fair** number of packets to transmit.

*Syntax:*

```
<interface_name> config>output-fair <1..65535>
```



The default value depends on the interface.

#### Command history:

Release	Modification
11.00.03	The <i>output-fair</i> command was introduced as of version 11.00.03.

### 1.2.11 [NO] PPP

Configures a PPP link over a physical interface encapsulating other protocols.

To configure a PPP connection, please see bintec *Dm710 PPP Interface*.

#### Syntax:

```
<interface_name> config>ppp ?
  lcp-options    LCP parameters
```

#### Example:

```
ethernet0/0 config>ppp lcp-options acfc
```

#### Command history:

Release	Modification
11.00.03	The <i>ppp</i> command was introduced as of version 11.00.03.

### 1.2.12 [NO] SERVICE-POLICY

To apply a policy-map (please see manual *bintec Dm795-I Policy-Map Class-Map*) to an interface, run **service-policy**. The policy-map must exist for this to be applied to the interface.

You can specify the (input or output) address where you wish to apply the policy. Currently, this is only available for input.

#### Syntax:

```
<interface_name> config>service-policy <policy-map-name> input
```

#### Example:

```
ethernet0/0 config>service-policy Policy_100 input
```

### 1.2.13 [NO] SHUTDOWN

The **shutdown** command administratively disables the interface, while **no shutdown** enables it.

#### Syntax:

```
<interface_name> config>shutdown
```

### 1.2.14 [NO] UPDATE LEVEL-INDICATOR

Updates the level indicator <id> in the configured value <val>. The indicator increases its <val> value when the interface changes to a configured application state and vice-versa. You can configure updating for various level indicators. Updating can be canceled by running **no**. Level indicators are used as entries in the NSLA functionality (please see manual *bintec Dm754-I Network Service Level Advisor*).

#### Syntax:

```
<interface_name> config>update level-indicator <id> value <val> when-up | when-down | when-dormant
```

#### Example:

```
serial0/0 config>update level-indicator 1 value 20 when-up
```

## 1.2.15 [NO] VRF

Configures parameters related to *routing* and *forwarding* in virtual private networks (VPN).

*Syntax:*

```
<interface_name> config>vrf ?
forwarding    Configure forwarding table
```

To delete a preconfiguration for parameters related to *routing* and *forwarding* in virtual private networks (VPN), use the **no vrf** command.

*Syntax:*

```
<interface_name> config>no vrf ?
forwarding    Configure forwarding table
```

### Command history:

Release	Modification
11.01.09	The <b>VRF</b> command was introduced as of version 11.01.09.

### 1.2.15.1 VRF FORWARDING

Associates the interface with a *routing* and *forwarding* table or instance (VRF, *Virtual Routing/Forwarding*), specified by name or identifier.

*Syntax:*

```
<interface_name> config>vrf forwarding <table_name>
```

*Example:*

```
ethernet0/0 config>vrf forwarding private
ethernet0/0 config>
```

To delete the association between the interface and a *routing* and *forwarding* table or instance (VRF, *Virtual Routing/Forwarding*), use **no vrf forwarding**.

*Syntax:*

```
<interface_name> config>no vrf forwarding <table_name>
```

*Example:*

```
ethernet0/0 config>no vrf forwarding private
ethernet0/0 config>
```

### Command history:

Release	Modification
11.01.09	The <b>VRF FORWARDING</b> command was introduced as of version 11.01.09.

## 1.2.16 EXIT

Returns to the general configuration menu (*Config*>).

*Syntax:*

```
<interface_name> config>exit
```

*Example:*

```
ethernet0/0 config>exit
Config>
```

## 1.3 Fixed-number-snmp

This feature sets the persistence of bandwidth-reservation (BRS) interface and class indexes over time, regardless of whether new interfaces/classes are added or existing ones deleted. With this new functionality, the order of interfaces and classes will match the order of creation (i.e., new interfaces and classes will be added at the end of their corresponding lists, instead of being grouped according to their priority). The order of interfaces and classes will remain the same even after the device is restarted.

The physical interfaces activated by the router's license always appear first and in a fixed position.

This functionality is enabled at the fixed-number-snmp menu.

For more information on how the fixed number-snmp function works for BRS classes, please see manual bintec Dm715-I Bandwidth Reservation System.

*Commands:*

### INIT

This command triggers feature configuration based on the router's current state. All interfaces and classes are scanned, with one "interface" command and "class" command created for each (together with an index containing the position value of the interface).

The "init" command will not appear in the configuration and its scanning process is activated when saving the configuration (save). This is when information on the index persistence of interfaces and classes will appear in the configuration.

The "interface", "class", "last-index-ifc" and "val-checksum" subcommands are automatically created when "init" is executed or when interfaces or classes are added or removed. This means *the user cannot create or delete them at will*.

- *interface*. This subcommand includes the name of the interface and the index value that matches its order of creation.
- *last-index-ifc*. This subcommand will take the index value of the last interface added.
- *class*. This subcommand includes the name of the interface, the name of the class, the circuit to which it belongs (where applicable), and the index value that matches its order of creation. In this case, *last-index* will be created as one more class.
- *val-checksum*. The checksum value is a way to verify that the "interface" and "class" subcommand configurations are correct, so as to stop the router from misbehaving or crashing.

### CLEAR

This command removes all fixed-number-snmp feature configurations and deactivates the functionality. The order previously configured will not change until the router is restarted.

### LIST

This command shows the status of the "init" command. If we execute the "init" command but the configuration is not saved, it will appear as enabled. Once saved, the "init" command will be disabled until it is run again.

*How to use it:*

This functionality can be used as follows:

- (a) To activate this feature, you have to run the "init" command. It will not appear in the configuration as such but, once this is saved, the list of "interface" and "class" subcommands inside the menu will be created based on their current order and corresponding index value. Until the configuration is saved, this "init" command operation will not be performed. To learn about the feature's status, you must execute "list".
- (b) Once the feature is active, there are four possible actions:
  - (a) *Add a new interface*. The interface will appear in the fixed-number-snmp menu, always in the last position when created by the "last-index-ifc" command.
  - (b) *Delete an interface*. In this case, the interface is removed from the fixed-number-snmp menu list but the order of the remaining interfaces and their indexes is kept.
  - (c) *Add a new class*. The class will appear in the fixed-number-snmp menu, always in the last position of the interface to which it belongs, as set by the "class <interface> <circuit> last-index" subcommand.
  - (d) *Delete a class*. In this case, the class is removed from the fixed-number-snmp menu list but the order of the remaining classes and their indexes is kept.
- (c) To disable this functionality, execute the "clear" command and restart the router to apply the changes.

**Note**

The user must not manipulate the configuration of the fixed-number-snmpp menu and should take great care when copying a configuration from one router to another, since this could cause the device to misbehave or malfunction.

*Usage example:***(a) Initial state of the router:**

```
Config$ list devices
Interface      Connector      Type of interface
ethernet0/0    EXP/SWITCH     FMAN Switch Ethernet
ethernet0/1    WAN            FMAN Ethernet
cellular0/0    Cell           AT COM
cellular0/1    Cell           USBNIC Interface
cellular0/2    Cell           USBNIC Interface
cellular10/0   USB            AT COM
cellular10/1   USB            USBNIC Interface
cellular10/2   USB            USBNIC Interface
wlan0/0        Wi-Fi1         Wireless LAN Interface
```

**(b) To know the status of the “init” command belonging to the fixed-number-snmpp feature, you must use the “list” command:**

```
Config$ fixed-number-snmpp
-- Fixed configuration --
FIXED config$ list
The init command is disabled

FIXED config$
```

**(c) Activation of the fixed-number-snmpp feature:**

```
Config$ fixed-number-snmpp
-- Fixed configuration --
FIXED config$ init
FIXED config$
FIXED config$ show config
; Showing Menu and Submenus Configuration for access-level 15 ...

FIXED config$list
The init command is enabled

FIXED config$ exit
Config$ save yes
Building configuration as text... OK
Writing configuration... OK on Flash as flash
Config$ fixed-number-snmpp
-- Fixed configuration --
FIXED config$ show config
; Showing Menu and Submenus Configuration for access-level 15 ...
interface ethernet0/0 1
interface ethernet0/1 2
interface cellular0/0 3
interface cellular0/1 4
interface cellular0/2 5
interface cellular10/0 6
interface cellular10/1 7
interface cellular10/2 8
interface wlan0/0 9
interface fr1 10
interface fr2 11
;
last-index-ifc 11
val-checksum 134
FIXED config$ list
```

```
The init command is disabled
```

(d) Adding interfaces to the router:

```
Config# add device loopback 1
Config# add device eth-subinterface ethernet0/0 1
Config# add device ppp 1
Config#
Config# fixed-number-snmp
-- Fixed configuration --
FIXED config#
FIXED config# show config
; Showing Menu and Submenus Configuration for access-level 15 ...

interface ethernet0/0 1
interface ethernet0/1 2
interface cellular0/0 3
interface cellular0/1 4
interface cellular0/2 5
interface cellular10/0 6
interface cellular10/1 7
interface cellular10/2 8
interface wlan0/0 9
interface fr1 10
interface fr2 11
interface loopback1 12
interface ethernet0/0.1 13
interface ppp1 14
;
last-index-ifc 15
val-checksum 234
```

(e) Deleting device interfaces:

```
Config# no add device loopback 1
Config#
Config# fixed-number-snmp
-- Fixed configuration --
FIXED config#
FIXED config# show config
; Showing Menu and Submenus Configuration for access-level 15 ...

interface ethernet0/0 1
interface ethernet0/1 2
interface cellular0/0 3
interface cellular0/1 4
interface cellular0/2 5
interface cellular10/0 6
interface cellular10/1 7
interface cellular10/2 8
interface wlan0/0 9
interface fr1 10
interface fr2 11
interface ethernet0/0.1 13
interface ppp1 14
;
last-index-ifc 15
val-checksum 234
```

(f) Disabling the fixed-number-snmp feature and removing its configuration:

```
Config# fixed-number-snmp
-- Fixed configuration --
FIXED config# clear
FIXED config#
FIXED config# show config
; Showing Menu and Submenus Configuration for access-level 15 ...

FIXED config# list
```

```
The init command is disabled
```

**Warnings:**

This functionality affects all compatible interfaces, meaning the user must be careful when performing certain actions.

- When creating interfaces and classes while this function is enabled, the router may experience a delay involving new interfaces or classes.
- The XOT and X25 interfaces are incompatible with the feature.
- Some actions can cause the device to malfunction or misbehave, and should be taken into account.
  - *Copy configuration from one router to another.*

When performing this task, interfaces that are not used or do not belong to the router can't exist (but these should never be fewer than those present in the router).

- *The "init" command is not an enable.*

If you copy a configuration from one computer to another, we do not recommend running the "init" command. This would update the order of interfaces and classes (and would erase the previous order if changes were saved).

**Command history:**

<b>Release</b>	<b>Modification</b>
11.01.08	The <i>fixed number-snmp</i> feature was introduced as of version 11.01.08.