CHAPTER 7

# Communication Card Group

The communication card group contains objects for the bus repeater card (BRC) and the network bus controller (NBC).

## Bus Repeater Card Table

The system maintains a listing of BRC hardware connections. When the system is equipped with redundant BRCs, the BRC listing indicates which BRC pair is active and which is standby. All BRCs in the system must be entered in the system database before you configure them. A BRC is identified by its Rack, Level, and Slot (R,L,S) hardware address.

A BRC pair consists of a master BRC (MBRC) and a secondary BRC (SBRC). The MBRC must reside in the Master Port Subrack usually in Rack 1, Level 1. The SBRC resides in either Slot 1 or 2 of an Expansion Port Subrack. The system uses this BRC pair to extend the communications bus from the Master Port Subrack to the Expansion Port Subrack. A BRC pair is required for each Expansion Port Subrack in the system. BRC redundancy requires a second pair for each subrack.

The MBRC and SBRC are physically connected by a cable (refer to the *Cisco VCO/4K Hardware Installation Guide*) and logically connected (in the software) using the objects in the BRC table. Both the physical and logical connections must be made for the system to establish communications to an Expansion Port Subrack.

Consider the following when configuring BRCs:

- MBRCs must have a Rack or Cabinet, Level value of 1-1.
- SBRCs must reside in Slot 1 or 2 of an Expansion Port Subrack. They cannot have a Rack or Cabinet, Level value of 1-1.
- The system does not verify that the hardware connection between BRCs is consistent with the information in the BRC tables in the MIB.
- If one of the BRCs you specify is configured as part of another BRC pair, it is reconfigured to match the newly entered data.
- When you have redundant BRCs and you initialize the system, the BRC pair that becomes available for service first is selected as the active pair for a subrack.

## brcTable

{comm 1}

**Description**

The BRC configuration table.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1

**Data Type**

Sequence of BrcEntry

**Access Policy**

Not accessible

**Status**

Mandatory

## brcEntry

{brcTable 1}

**Description**

An object in the BRC configuration table.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1

**Data Type**

BrcEntry

**Access Policy**

Not accessible

**Status**

Mandatory

**Index**

{brcIndex}

## BrcEntry

Sequence

| | |
|---|---|
| brcIndex | CardIndex |
| brcRack | Integer |
| brcLevel | Integer |
| brcSlot | Integer |

| | |
|---|---|
| brcStatus | Integer |
| brcType | Integer |
| brcRevVer | Display String |
| brcPhyAdd | Integer |
| brcConn | Integer |
| brcDisConn | Integer |
| brcMode | Integer |
| brcRedMasterIndex | CardIndex |
| brcAlarm | Integer |
| brcErrorStatus | Integer |
| brcOwnerString | OwnerString |
| brcEntryStatus | EntryStatus |

## brcIndex

{brcEntry 1}

**Description**

Identifies an object in the BRC table. This object contains the physical location (hardware address) of the card to which this port is attached. The index object lists the rack (R), the level (L), and the slot (S) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.1

**Data Type**

CardIndex

**Access Policy**

Read only

**Status**

Mandatory

## brcRack

{brcEntry 2}

**Description**

The rack (R) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.2

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## brcLevel

{brcEntry 3}

**Description**

The level (L) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.3

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## brcSlot

{brcEntry 4}

**Description**

The slot (S) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.4

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## brcStatus

{brcEntry 5}

**Description**

Indicates the current status of the card.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.5

**Data Type**

Integer. The valid numerical and string values are shown in the following table:

| Value | String | Meaning |
|---|---|---|
| 1 | active[1] | Ports on this card can be involved in active calls and can be allocated to new calls. |
| 4 | outOfService | No ports on this card can be involved in active calls. No ports are allocated to new calls. |
| 5 | standby | Valid for one of the two NBC cards in redundant systems only. Also valid for one or more DTG cards in either a redundant or nonredundant system or BRCs. |
| 6 | campedOn | (diagnostic state) |
| 7 | payloadLoopback | (diagnostic state) |
| 8 | remoteLoopback | (diagnostic state) |

1. The agent might take as long as 10 seconds to put a card into the Active state.

**Access Policy**

Read-write

**Status**

Mandatory

## brcType

{brcEntry 6}

**Description**

Indicates the type of card. In this table the type is a BRC card (the value is always 14).

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.6

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## brcRevVer

{brcEntry 7}

**Description**

Indicates the version and the revision level numbers of the firmware installed on the card. Use this object to verify the firmware revisions for all network interface and service circuit cards are at the current level.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.7

**Data Type**

DisplayString. Length of the display string is from 1 to 5 characters.

**Access Policy**

Read only

**Status**

Mandatory

## brcPhyAdd

{brcEntry 8}

**Description**

The physical address of this card. The address is assigned by the  system. You cannot assign or modify this address.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.8

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## brcConn

{brcEntry 9}

**Description**

Connects two BRCs that are in a master/slave mode. If either of the two cards is already connected, the connect BRC operation fails and the management station disconnects the cards using the brcDisConn object. An SNMP GetRequest on this object when no BRCs are connected returns a 0 value.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.9

**Data Type**

Integer

**Access Policy**

Read-write

**Status**

Mandatory

## brcDisConn

{brcEntry 10}

**Description**

Disconnects an already existing BRC pair. To disconnect a pair, you need to set this object to the same value set in the brcConn object. An SNMP GetRequest on this object returns a NoSuchName error message.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.10

**Data Type**

Integer

**Access Policy**

Read-write

**Status**

Mandatory

## brcMode

{brcEntry 11}

**Description**

Indicates whether the card is in the master (1) or slave (2) mode.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.11

**Data Type**

Integer. The two values are 1 (master) and 2 (slave).

**Access Policy**

Read only

**Status**

Mandatory

## brcRedMasterIndex

{brcEntry 12}

**Description**

Contains the location of the Master BRC that is associated with the same expansion port subrack as the Master BRC for this BRC pair for systems with redundant BRCs. If there is no redundant BRC, this object contains a zero (0).

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.12

**Data Type**

CardIndex

**Access Policy**

Read only

**Status**

Mandatory

## brcAlarm

{brcEntry 13}

**Description**

Tracks which alarms are active on this card.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.13

**Data Type**

Integer. The valid values and their meanings are shown in the following table:

| Value | String |
|---|---|
| 1 | cardFailureMinor |
| 2 | portFailureMinor |
| 3 | cardAndPortFailureMinor |

**Access Policy**

Read only

**Status**

Mandatory

## brcErrorStatus

{brcEntry 14}

**Description**

Registers the last error that occurred on this card. For further information on card error messages, see Appendix A, “Card Error Messages”.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.14

**Data Type**

Integer. The possible values and their meanings are shown in the following table:

| Value | String |
|---|---|
| 1536 | cannotConnectBRCsOnSameSubrack |
| 1537 | oneBrcMustBeInMasterSubrack |
| 1538 | brcNotDefinedInThisSlot |
| 1545 | invalidRackLevelCombination |
| 1546 | invalidCardAddress |
| 1547 | masterBrcAlreadyConnected |
| 1548 | destinationBrcAlreadyConnected |

**Access Policy**

Read only

**Status**

Mandatory

## brcOwnerString

{brcEntry 15}

**Description**

The entity that configured this object and is therefore using the assigned resources.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.15

**Data Type**

OwnerString

**Access Policy**

Read-write

**Status**

Mandatory

## brcEntryStatus

{brcEntry 16}

**Description**

The status of this BRC object.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.16

**Data Type**

EntryStatus

**Access Policy**

Read-write

**Status**

Mandatory

## brcDwnldVersion

{brcEntry 17}

**Description**

Version/revision of the card download file

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.17

**Data Type**

DisplayString (SIZE (1..4))

**Access Policy**

Read only

**Status**

Mandatory

## brcUpgradeState

{brcEntry 18}

**Description**

The upgrade state of this bus repeater card entry.

**Object Identifier**

1.3.6.1.4.1.886.1.6.1.1.18

**Data Type**

UpgradeState

**Access Policy**

Read only

**Status**

Mandatory

### brcTableLastModified

{comm 2}

**Description**

The time, displayed in hundredths of a second, since the brcTable was last modified. Helps NMS application developers determine the polling of the agent parameters.

**Object Identifier**

1.3.6.1.4.1.886.1.6.2

**Data Type**

TimeTicks

**Access Policy**

Read only

**Status**

Mandatory

# Networld Bus Controller (NBC) Card Configuration

The Network Bus Controller (NBC) is a special control circuit card that resides only in Slot 1 or 2 of the Master port subrack. The NBC drives the communication bus and time slot address bus, and generates the system clocks. The NBC also provides the data communication path between the System Controller and the circuit cards in the master and expansion port subracks.

### nbcTable

{comm 4}

**Description**

The NBC configuration table.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4

**Data Type**

Sequence of NbcEntry

**Access Policy**

Not accessible

**Status**

Mandatory

## nbcEntry

{nbcTable 1}

**Description**

An entry in the NBC configuration table.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1

**Data Type**

NbcEntry

**Access Policy**

Not accessible

**Status**

Mandatory

**Index**

{nbcIndex}

## NbcEntry

Sequence

| | |
|---|---|
| nbcIndex | CardIndex |
| nbcRack | Integer |
| nbcLevel | Integer |
| nbcSlot | Integer |
| nbcStatus | Integer |
| nbcType | Integer |
| nbcRevVer | Display String |
| nbcPhyAdd | Integer |
| nbcAlarm | Integer |
| nbcErrorStatus | Integer |
| nbcOwnerString | OwnerString |
| nbcEntryStatus | EntryStatus |

## nbcIndex

{nbcEntry 1}

**Description**

Identifies an object in the NBC card table. It corresponds to the physical location of the card and is a function of the rack (R), the level (L), and the slot (S) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.1

**Data Type**

CardIndex

**Access Policy**

Read only

**Status**

Mandatory

## nbcRack

{nbcEntry 2}

**Description**

The rack (R) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.2

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcLevel

{nbcEntry 3}

**Description**

The level (L) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.3

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcSlot

{nbcEntry 4}

**Description**

The slot (S) where the card resides.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.4

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcStatus

{nbcEntry 5}

**Description**

Indicates the current status of the card. You cannot change the status of the NBC card.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.5

**Data Type**

Integer. The valid numerical and string values are shown in the following table:

| Value | String | Meaning |
|---|---|---|
| 1 | active | Indicates the card is active. |
| 4 | outOfService | Indicates the card is out of service. |
| 5 | standby | Valid for one of the two NBC cards in redundant systems only. Also valid for one or more DTG cards in either a redundant or nonredundant system or BRCs. |

**Access Policy**

Read only

**Status**

Mandatory

## nbcType

{nbcEntry 6}

**Description**

Indicates the type of card. In this table the card is an NBC card. For an NBC card, this value is always 13.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.6

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcRevVer

{nbcEntry 7}

**Description**

Indicates the version number and the revision level numbers for the firmware installed on this card. Use these numbers to verify that firmware revisions for all network interface and service circuit cards are at the current level.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.7

**Data Type**

DisplayString. Length of the display string is from 1 to 5 characters.

**Access Policy**

Read only

**Status**

Mandatory

## nbcPhyAdd

{nbcEntry 8}

**Description**

The physical address of this card. The address is assigned by the VCO system. You cannot assign the address and you cannot modify it.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.8

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcAlarm

{nbcEntry 9}

**Description**

Tracks which alarms are active on this card.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.9

**Data Type**

Integer. The valid values and their meanings are shown in the following table:

| Value | String |
|---|---|
| 1 | cardFailureMinor |
| 2 | portFailureMinor |
| 3 | cardAndPortFailureMinor |

**Access Policy**

Read only

**Status**

Mandatory

## nbcErrorStatus

{nbcEntry 10}

**Description**

Registers the last error that occurred on this card. For a list of the card error messages, see Appendix A, “Card Error Messages”.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.10

**Data Type**

Integer

**Access Policy**

Read only

**Status**

Mandatory

## nbcOwnerString

{nbcEntry 11}

**Description**

The entity that configured this object and is therefore using the resources assigned to it.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.11

**Data Type**

OwnerString

**Access Policy**

Read-write

**Status**

Mandatory

## nbcEntryStatus

{nbcEntry 12}

**Description**

The status of this NBC card entry. Adding or deleting an NBC card in location 2 also adds the DTG card. The nbcEntryStatus must be set to valid after the card is created.

To modify the attributes of the DTG card in location 1 or 2, use the dtgCardEntryStatus and dtgPortEntryStatus objects.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.12

**Data Type**

EntryStatus

**Access Policy**

Read-write

**Status**

Mandatory

## nbcDwnldVersion

{nbcEntry 13}

**Description**

Version/revision of the card download file.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.13

**Data Type**

DisplayString (size 1...4)

**Access Policy**

Read only

**Status**

Mandatory

## nbcUpgradeState

{nbcEntry 14}

**Description**

The upgrade state of this network bus controller card entry.

**Object Identifier**

1.3.6.1.4.1.886.1.6.4.1.14

**Data Type**

UpgradeState

**Access Policy**

Read only

**Status**

Mandatory

## nbcTableLastModified

{comm 5}

**Description**

The time, displayed in hundredths of a second, since the nbcTable was last modified. Helps NMS application developers determine the polling of the agent parameters.

**Object Identifier**

1.3.6.1.4.1.886.1.6.5

**Data Type**

TimeTicks

**Access Policy**

Read only

**Status**

Mandatory