



# SW Commands

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This chapter provides switch (SW) commands for the Cisco NCS2002 and Cisco NCS 2006.

## 26.1 SW-DX-EQPT

The Switch Duplex Equipment (SW-DX-EQPT) command switches an XC-VXL-10G or XC-VXL-2.5G card with its redundant card within the NE.

<b>Usage Guidelines</b>	If sending a mode parameter with a value other than NORM, FRCD, or NULL, the Input, Data Not Valid (IDNV) error message will be returned.
<b>Category</b>	Equipment
<b>Security</b>	Maintenance
<b>Input Format</b>	SW-DX-EQPT:[<TID>]:<AID>:<CTAG>::[<MODE>][,];
<b>Input Example</b>	SW-DX-EQPT:CISCO:SLOT-8:123::NORM;

**Table 26-1** *Input Parameter Support*

Parameter	Description
<AID>	Access identifier from the “ <a href="#">27.13 EQPT</a> ” section on page 27-21. Identifies the equipment unit in the NE that is to be switched with its redundant card.
<MODE>	(Optional) Command mode. Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in Unlocked-Enabled or Locked-Disabled, AutomaticInService service states.
• FRCD	Force the system to override a state in which the command would normally be denied. (FRCD is not supported in this command).
• NORM	Execute the command normally. Do not override any conditions that may make the command fail.

## 26.2 SW-TOPROTN-EQPT

The Switch to Protection Equipment (SW-TOPROTN-EQPT) command performs an equipment unit protection switch.

- This command is used for electrical cards that can participate in an electrical protection group (for example, E1, E3, E4, and DS3i-N-12).
- This command will switch the traffic from the working card specified in the AID to the protect card.
- There is a priority for the switch to protection commands in 1:N protection groups with  $N > 1$ . For example, suppose a 1:N protection group has two working cards: A and B. Card A is switched to the protect card with the SW-TOPROTN command. If Card B is pulled from the system, the protect card will carry the traffic of Card B and card A will become active. When Card B is replaced and the revert timer expires, Card B will carry traffic and Card A will carry traffic. The protect card will not carry any traffic.
- In a revertive protection group, the unit specified by the AID will raise the standing condition of WKSWPR if the command were executed without an error. In a nonrevertive protection group, the unit specified by the AID will raise the transient condition of WKSWPR if the command is executed without an error.
- The following actions will return error messages:
  - The default PROTID is the protect unit if there is only one protect unit per protection group in the NE, otherwise a DENY error message will be returned.
  - This command only supports the BTH or null value of the DIRN parameter. A command with any other value is considered an incorrect use of the command. An Input, Data Not Valid (IDNV) error message will be returned.
  - This command is not used for the common control (TCC2, TCC2P, TCC3, XC-VXL-10G, XC-VXL-2.5G, or XC-VXC-10G) cards. A command on a common control card will generate an Input, Invalid Access Identifier (IIAC) error message. To switch the common control cards, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.

- This command is not used for NCS (STM) cards. A command on a NCS card will return an IIAC error message. To switch an NCS card, use the OPR-PROTNSW and RLS-PROTNSW commands.
- If this command is used on a card that is not in a protection group, the Status, Not in Valid State (SNVS) error message will be returned.
- If this command is sent to a missing working card, the Status, Working Unit Failed (SWFA) error message will be returned.
- If this command is used on a protect card, the IIAC error message will be returned.
- Sending a mode parameter with a value other than NORM, FRCD, or null will return the IDNV error message.
- Sending the SW-TOPROTN command to a working card when the working card has raised INHSWPR will return the Status, Working Unit Locked (SWLD) error message.
- Sending the SW-TOPROTN command to a working card when the protection card has raised INHSWPR will return the Status, Protection Unit Locked (SPLD) error message.
- Sending the SW-TOPROTN command to an active working card when the protect card is already carrying traffic (this only occurs in a 1:N protection group with N greater than one) will return the Status, Not in Valid State (SNVS) error message.
- Sending the SW-TOPROTN command to an active working card when the protect card is failed or missing will return the Status, Protection Unit Failed (SPFA) error message.
- Sending this command to a standby working card will return the SNVS error message.

**Category**

Equipment

**Security**

Maintenance

**Input Format**

SW-TOPROTN-EQPT:[&lt;TID&gt;]:&lt;AID&gt;:&lt;CTAG&gt;::[&lt;MODE&gt;],[&lt;PROTID&gt;],[&lt;DIRN&gt;];

**Input Example**

SW-TOPROTN-EQPT:CISCO:SLOT-1:123::FRCD,SLOT-3,BTH;

**Table 26-2 Parameter Support**

Parameter	Description
<AID>	Access identifier from the “ <a href="#">27.13 EQPT</a> ” section on page 27-21. Specifies the working unit which will have traffic switched to protection.
<MODE>	(Optional) Command mode. Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in Unlocked-Enabled or Locked-Disabled, AutomaticInService service states.
• FRCD	Force the system to override a state in which the command would normally be denied.
• NORM	Execute the command normally. Do not override any conditions that may make the command fail.
<PROTID>	(Optional) Access identifier from the “ <a href="#">27.24 PRSLOT</a> ” section on page 27-32. Identifies the protection unit to be switched when there is more than one protection unit within the NE.
<DIRN>	(Optional) The direction relative to the entity defined in the AID field. The direction of the switching. This command only supports the BTH value of this parameter. DIRN defaults to BTH. The parameter type is DIRECTION, which is the transmit and receive directions.
• BTH	Both transmit and receive directions

## 26.3 SW-TOWKG-EQPT

The Switch to Working Equipment (SW-TOWKG-EQPT) command switches the active protect card back to working card.

### Usage Guidelines

- This command is used for electrical cards that can participate in an electrical group (for example, E1, E3, E4, and DS3i-N-12).
- This command will switch the traffic from the protection card to the working card specified by the AID.

- In a revertive protection group, the unit specified by the AID will clear the standing condition of WKSWPR if the command is executed without an error. In a nonrevertive protection group, the unit specified by the AID will raise the transient condition of WKSWBK if the command were executed without an error.
- The following actions will return error messages:
  - This command only supports the BTH or null value of the DIR> parameter. A command with any other value is considered an incorrect use of the command. An IDNV error message will be returned.
  - This command is not used for the common control (TCC2, TCC2P, TCC3, XC-VXL-10G, XC-VXL-2.5G, or XC-VXC-10G) cards. A command on a common control card will return an IIAC error message. To switch common control cards, use the SW-DX-EQPT and ALW-SWDX-EQPT commands.
  - This command is not used for NCS (STM) cards. A command on a NCS card will return an IIAC error message. To switch an NCS card, use the OPR-PROTNSW and RLS-PROTNSW commands.
  - If this command is used on a card that is not in a protection group, the SNVS error message will be returned.
  - If this command is sent to a missing working card, the SWFA error message will be returned.
  - If this command is used on a protection card, the IIAC error message will be returned.
  - If you send a mode parameter with a value other than NORM, FRCD, or null, the IDNV error message will be returned.
  - Sending the SW-TOWKG command to a working card when the working card has raised INHSWWKG will return the SWLD error message.
  - Sending the SW-TOWKG command to a working card when the protection card has raised INHSWWKG will return the SPLD error message.
  - Sending the SW-TOWKG command to an active working card will return the SNVS error message.

<b>Category</b>	Equipment
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<b>Security</b>	Maintenance
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<b>Input Format</b>	SW-TOWKG-EQPT:[<TID>]:<AID>:<CTAG>::[<MODE>][,<DIRN>];
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<b>Input Example</b>	SW-TOWKG-EQPT:CISCO:SLOT-2:123::FRCD,BTH;
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**Table 26-3**      **Parameter Support**

Parameter	Description
<AID>	Access identifier from the “ <a href="#">27.24 PRSLOT</a> ” <a href="#">section on page 27-32</a> . Specifies the working unit which will have traffic switched to protection.
<MODE>	(Optional) Command mode. Normal (NORM) mode is the default behavior for all commands but you can specify forced (FRCD) mode to force the system to override a state where the command would normally be denied. The FRCD mode of operation is applicable to delete a virtual concatenated (VCAT) member cross-connect in Unlocked-Enabled or Locked-Disabled, AutomaticInService service states.
• FRCD	Force the system to override a state in which the command would normally be denied.
• NORM	Execute the command normally. Do not override any conditions that may make the command fail.
<DIRN>	(Optional) The direction relative to the entity defined in the AID field. The direction of the switching. This command only supports the BTH value of this parameter. DIRN defaults to BTH. The parameter type is DIRECTION, which is the transmit and receive directions
• BTH	Both transmit and receive direction