DIGITAL VNswitch 900CC

Installation and Configuration

Part Number: EK–DVNCC–IN. A01

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This manual describes how to install and configure the DIGITAL VNswitch 900CC module

Revision Information: This is a new document.

Contents

1 Product Introduction

2 Installing the DIGITAL VNswitch 900CC

3 Installing the Setup Port Cable

4 Configuring the Module in a DEChub ONE or DEChub ONE-MX

5 Configuring the Module in a DIGITAL MultiSwitch 900

6 Removing the Module

A Problem Solving

B Connectors and Adapters

C Product Specifications

Preface

Overview

Purpose of the Manual

This manual describes how to install and set up the VNswitch 900CC module. It also provides problem solving, connector and adapter, and pin assignment information.

Intended Audience

This manual is intended for use by personnel who will install and set up the VNswitch 900CC module.

Organization

This manual is organized as follows:

Section	Description
Chapter 1	Provides an overview of the VNswitch 900CC module and describes its features.
Chapter 2	Provides instructions for installing the VNswitch 900CC module in a DIGITAL MultiSwitch 900 chassis.
Chapter 3	Provides instructions for installing the setup port on the DEChub ONE docking station and the DIGITAL MultiSwitch 900 chassis.
Chapter 4	Provides information on setting up and configuring the VNswitch 900CC module in a DEChub ONE docking station.
Chapter 5	Provides information on how to configure the VNswitch 900CC module in a DIGITAL MultiSwitch 900 chassis.
Chapter 6	Provides information on how to remove the VNswitch 900CC module from the DIGITAL MultiSwitch 900 chassis.
Appendix A	Provides installation-specific problem solving information using the LEDs.
Appendix B	Provides connector and pin assignment information.
Appendix C	Provides product specifications and a parts list.

Associated Documents

The following documents provide related information. For information on how to order additional documentation, see the ordering information provided in this preface.

Title and Order	Description
DIGITAL MultiSwitch 900 Owner's Manual EK-DH2MS-OM	Provides installation, use, security, and troubleshooting information for the DIGITAL MultiSwitch 900 (formerly DEChub 900 MultiSwitch).
DEChub ONE Installation EK-DEHU2-IN	Provides installation and operation guidelines for standalone module configuration in a DEChub ONE docking station, including mounting options and cabling.
DEChub ONE-MX Installation EK-DEF1H-IN	Provides installation and operation guidelines for standalone module configuration in a DEChub ONE-MX docking station, including mounting options and cabling.
clearVISN Installation	Provides pre-installation and post-installation information, as well as actual installation procedures for each *clear*VISN application.
clearVISN Overview	Provides an overview of the *clear*VISN software, an explanation of each application, and descriptions of all concepts necessary to understand and use the applications efficiently.
*clearVISN User's Guid*e	Provides information for starting and configuring each *clear*VISN application, and general use information.
DIGITAL VNswitch 900 Series Technical Overview	Provides a technical overview of the VNswitch 900 family of high-density switching products.
DIGITAL VNswitch 900 Series Switch Management	Describes how to configure, monitor, and manage a VNswitch 900 series module.
OPEN DECconnect Applications Guide EC-G2570-42	Provides information to help plan and install networking systems based on the DIGITAL OPEN DECconnect System and networking products.
Event Logging System Messages Guide	Describes messages logged by the Event Logging System.

Associated Documents

Title and Order	Description
Bridge and Extended LAN Reference EK-DEBAM-HR	Describes how bridges are used to create extended local area networks (LANs). The descriptions include the use of bridges in extended LAN configurations, information on LAN interconnections, overall bridge operation, spanning tree, bridge management, and solving bridge-related problems in a network.

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Conventions

This book uses the following conventions.

Convention	Description
NOTE	Contains information of special interest.
Special Type	Indicates system output in examples.
Boldface	Indicates user input in examples.
<Return>	Indicates that you should press the Return key.

Accessing Online Information

Online Services

To locate product-specific information, refer to one of the following World Wide Web sites:

Americas:	http://www.networks.digital.com
	or
	http://www.cabletron.com/
Europe:	http://www.networks.europe.digital.com
Asia Pacific:	http://www.networks.digital.com.au

Documentation Comments

If you have comments or suggestions about this document, send them to:

TechWriting@cabletron.com

Safety

Overview

The cautions that must be observed for the hardware described in this manual are listed below in English, German, French, and Spanish. Any warning or caution that appears in this manual is defined as follows:

WARNING	Contains information to prevent personal injury.
CAUTION	Contains information to prevent damage to equipment.
VORSICHT	Enthält Informationen, die beachtet werden müssen um den Benutzer vor Schaden zu bewahren.
ACHTUNG	Enthält Informationen, die beachtet werden müssen um die Gerate vor Schaden zu bewahren.
DANGER	Signale les informations destinées à prévenir les accidents corporels.
ATTENTION	Signale les informations destinées à prévenir la détérioration du matériel.
AVISO	Contiene información para evitar daños personales.
PRECAUCIÓN	Contiene información para evitar daños al equipo.

CAUTION	This action deletes all configured settings and replaces them with factory default values. All configuration settings will be lost.
ACHTUNG	Bei diesem Vorgang werden alle Konfigurationseinstellungen gelöscht und die Werkseinstellungen wieder eingesetzt. Alle Konfigurationsdaten gehen verloren.
ATTENTION	Cette action supprime tous les paramètres de configuration et les remplace par des valeurs prédéfinies. Tous les paramètres de configuration seront perdus.
PRECAUCIÓN	Esta intervención borrará todos los parámetros de configuración y los sustituirá por valores por defecto definidos de fábrica. Se perderán todos los parámetros de configuración.

Chapter 1

Product Introduction

Overview

This chapter describes the features of the DIGITAL VNswitch 900CC module.

For further technical information on the DIGITAL VNswitch 900CC, refer to the *DIGITAL VNswitch 900 Series Switch Management* and the *DIGITAL VNswitch 900 Series Technical Overview.*

In This Chapter

This chapter contains the following topics:

Topic	Page
What is the DIGITAL VNswitch 900CC?	**1-2**
Features	**1-3**

What is the DIGITAL VNswitch 900CC?

The DIGITAL VNswitch 900CC (also referred to in this manual as the module) is a 16-port SNMP manageable Fast Ethernet switch, providing full-speed switching capability between each of its sixteen 100BaseTX Fast Ethernet ports.

The VNswitch 900CC network module is a true backbone network switch that supports complete filtering capabilities (including source address, destination address, protocol type, and VLAN) for greater network control, increased security and bandwidth utilization, and reduced propagation of network problems.

The module includes a large address table (approximately 8,000 entries) and is fully IEEE 802.1d standards-compliant, ensuring the high performance and packet integrity required in large switched networks.

The VNswitch 900CC module also offers nonvolatile flash memory for easy, non-disruptive upgrades of the device firmware using Trivial File Transfer Protocol (TFTP) load protocol. This minimizes the need to replace or upgrade hardware in the future, and avoids the associated costs and disruption to network users.

When installed into a MultiSwitch 900 chassis and connected to the VNbus, the module can function as an expansion module for any of the other VNswitch 900 series modules.

You can install and configure the module in a DIGITAL MultiSwitch 900 (also referred to in this manual as a MultiSwitch 900) or as a standalone unit in a DEChub ONE or DEChub ONE-MX docking station (see the *DEChub ONE Installation* manual or the *DEChub ONE-MX Installation* manual). The module is fully interoperable with other modules when installed in the MultiSwitch 900 (including MultiSwitch 900 and DEChub 90 modules).

Throughout this manual, the term DEChub ONE refers to the DEChub ONE or the DEChub ONE-MX docking station unless otherwise specified.

The VNswitch 900CC does not support the FDDI features of the DEChub ONE-MX.

Features

This section describes the features of the VNswitch 900CC module. For further information, refer to the *DIGITAL VNswitch 900 Series Technical Overview.*

Hot Swap

With hot-swapping capabilities, you can install or remove the module from a DIGITAL MultiSwitch 900 chassis without turning off the power.

Configuration and Management

The following configuration and management options are available:

- Auto-configuring at power-up.

- Support for up to 256 internal addresses for management and other purposes.

- Manageable via SNMP and the Command Line Interface (CLI) management via Telnet or an attached terminal device.

- Upgradeable device firmware (in nonvolatile flash memory) using TFTP with *clear*VISN Flash Loader or in the DEChub ONE through the OBM port with any TFTP server.

- A built-in SNMP management agent. It supports a comprehensive graphical user interface (GUI), using the DIGITAL *clear*VISN MultiChassis Manager, that is identical for both in-band and out-of-band management.

- Support for up to approximately 8,000 network addresses.

- Support for a Load/Dump/Management (LDM) port that allows upline dumps and downline loads of operational images.

- User-configured rate limiting for broadcast and multicast packets by address and specified protocol.

- Usable with other VNswitch 900 modules to create various configurations involving Ethernet, Fast Ethernet, FDDI and ATM by connecting over the 400 Mb/s VNbus.

Bridging

The following bridging features and options are available:

- High-speed local traffic filtering and forwarding

- Full line-rate bridge forwarding – up to 750,000 packets-per-second per module

- Compliant with spanning tree loop detection protocol, IEEE 802.1

- Support for multiple spanning trees with the ability to turn off the spanning tree algorithm on an individual per-port basis

SNMP

The VNswitch 900CC has a built-in SNMP agent and can be managed by any generic SNMP management application.

- The following MIBs are supported:

   — MIB II (RFC 1213)

   — Interfaces MIB (RFC 1573)

   — Bridge MIB (RFC 1493)

   — DIGITAL VLAN V1 MIB

   — DIGITAL Comet MIB

   — Proteon MIB

   — Ethernet MIB (RFC 1643)

   — DIGITAL Public Common MIB (pcom)

   — DIGITAL Internal Common MIB (icom)

   — DIGITAL ELAN Vendor MIB V3.0 (elan MIB)

   — RMON MIB RCFs

- SNMP support is also provided for GETs and for the following standard traps, along with many proprietary traps:

   — coldStart

   — warmStart

   — linkUp

   — linkDown

Ethernet

The following Ethernet features and options are available:

- Half- and full-duplex operation over all ports

- Using 100BaseTX, 10/100 Mb/s autosensing over the all ports

RMON

The VNswitch 900CC supports port mirroring and the following RMON groups:

- Events

- Alarms

- Statistics

- History

VLAN Secure Domains

The VLAN Secure Domains (VSD) support has the following features:

- Ability to group ports into VSDs

- Ability to join VSDs in different modules in the VNswitch family across the VNbus

- Support of port groups within a MultiSwitch 900 to create larger distributed multicast domains

- Support for as many as 32 port-based VSDs across each VNbus

- Support for multiple spanning trees per module, one per VSD

For further information, refer to the *clearVISN User's Guide*, the *clearVISN Overview*, or the *DIGITAL VNswitch 900 Series Technical Overview* manual.

Chapter 2

Installing the DIGITAL VNswitch 900CC

Overview

Introduction

This chapter describes the front and back panel components of the DIGITAL VNswitch 900CC module and provides the tasks for installing the module into a DIGITAL MultiSwitch 900 chassis.

To install a module in a DEChub ONE or DEChub ONE-MX docking station, refer to the *DEChub ONE Installation* manual or the *DEChub ONE-MX Installation* manual.

In This Chapter

This chapter contains the following topics:

Topic	Page
Module Components	**2-2**
How to Install the Module	**2-8**

Module Components

The following sections describe the front and back panel components for the VNswitch 900CC module.

Table 2-1 describes the front panel components, including the icons, that are on the module illustrated in **Figure 2-1**.

Table 2-2 describes the back panel components, illustrated in **Figure 2-2**.

For more information about the module's LEDs, refer to Appendix A.

Front Panel Components

Table 2-1 describes the front panel components that are illustrated in **Figure 2-1**.

Table 2-1:   Front Panel LEDs and Connectors

Item	Icon	Name	Description
1		Power LED	Lights when the module has power.
2		Module OK LED	Lights when the module passes self-test.
3		VNbus Status LED	Shows if the module is properly attached to a VNbus backplane. [1]
4		VNbus Activity LED	Indicates network traffic.[1]
5		Load/Dump/ Management (LDM) Port Status LED	Indicates the link status of the Load/Dump/Management port.
6		LDM Activity LED	Indicates when the LDM port is transmitting or receiving packets.
7		LDM Port	Dedicated 10BaseT Ethernet port. Supports loads and upline dumps of an operational image. This port is wired as a straight-through connector.

(continued on next page)

[1] The VNbus Status and Traffic LEDs display different indications during a load state. Refer to the release notes for current descriptions.

Item	Icon	Name	Description
8		Reset/Dump Button	Used to either reset the module or perform an upline dump of the operational image, followed by a reset. If this button is pressed as operational code initializes, the module will reset to current settings.
			If the module is in operation mode, hold the button for five seconds. Use a non-conductive device to press the button.
9		Address Label	Contains the lowest of 256 consecutive Media Access Control (MAC) addresses.
10		Port Status LEDs	Show the status of the ports. Indicates if the port is enabled or disabled and receiving a valid link.
		Port Activity LEDs	Indicates network traffic level.
11		100BaseTX Fast Ethernet port connectors	8-pin MMJ port connectors that support UTP cabling. These ports are wired as crossover connectors.

Figure 2-1: Front Panel LEDs and Connectors
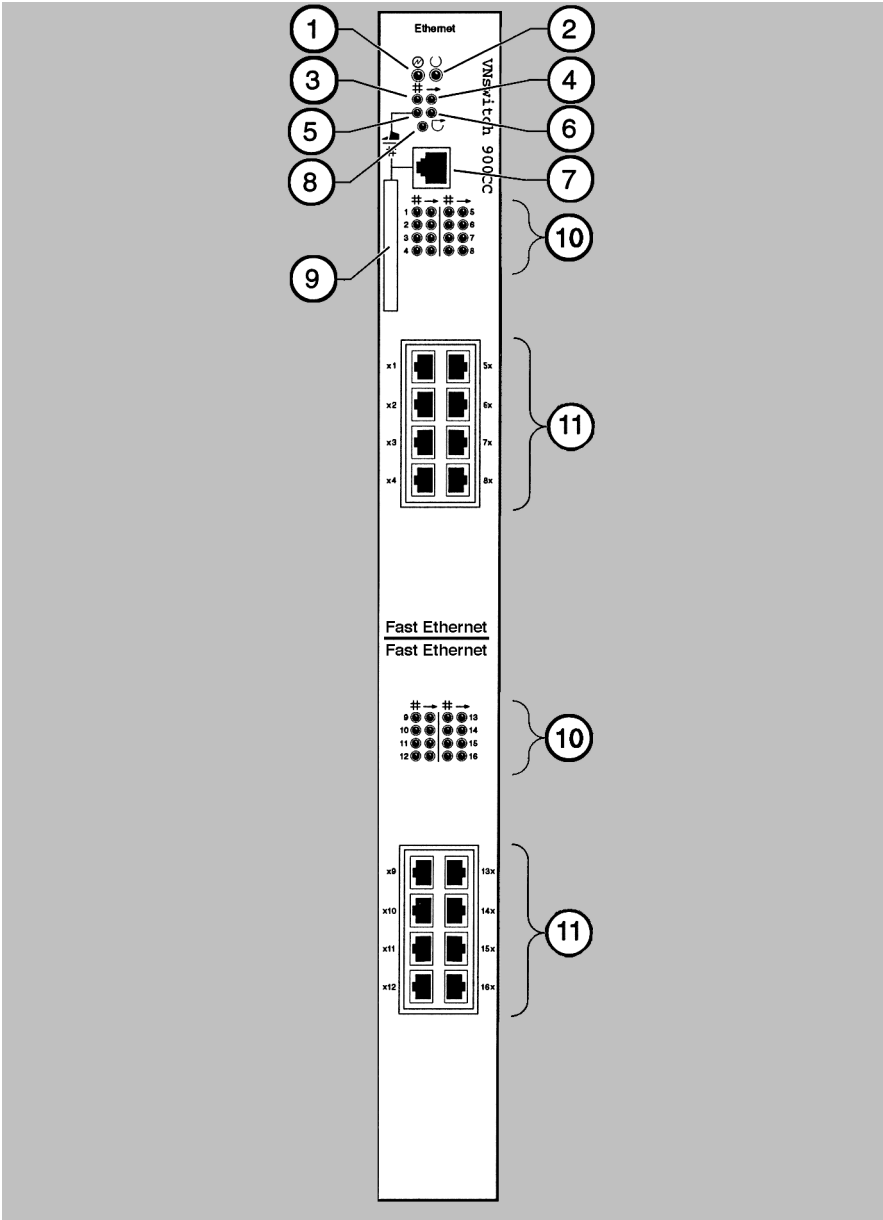
NPB-0994-97F

Back Panel Components

Table 2-2 describes the back panel components that are illustrated in **Figure 2-2**.

Table 2-2:   Back Panel Components

Item	Name	Description
1	Locking tab	Locks the module into a MultiSwitch 900 backplane or into a DEChub ONE docking station. Contains the hot-swap switch lever.
2	48-pin connector	Provides network and power connections to the module when the module is installed in a MultiSwitch 900 or DEChub ONE docking station.
3	Grounding bolt	Provides a chassis grounding connection between the module and the MultiSwitch 900 or the DEChub ONE docking station.
4	Manufacturing label	Lists the module's part number, serial number, revision level, and power requirements.
5	160-pin connector	Provides network and power connections to the module when the module is installed into a MultiSwitch 900 or a DEChub ONE docking station.
6	Mounting tab	Secures the module when it is installed into a MultiSwitch 900 or a DEChub ONE docking station.
7	Grounding fingers	Provide additional chassis grounding between the module and a MultiSwitch 900 or a DEChub ONE docking station.

Figure 2-2: Back Panel Components
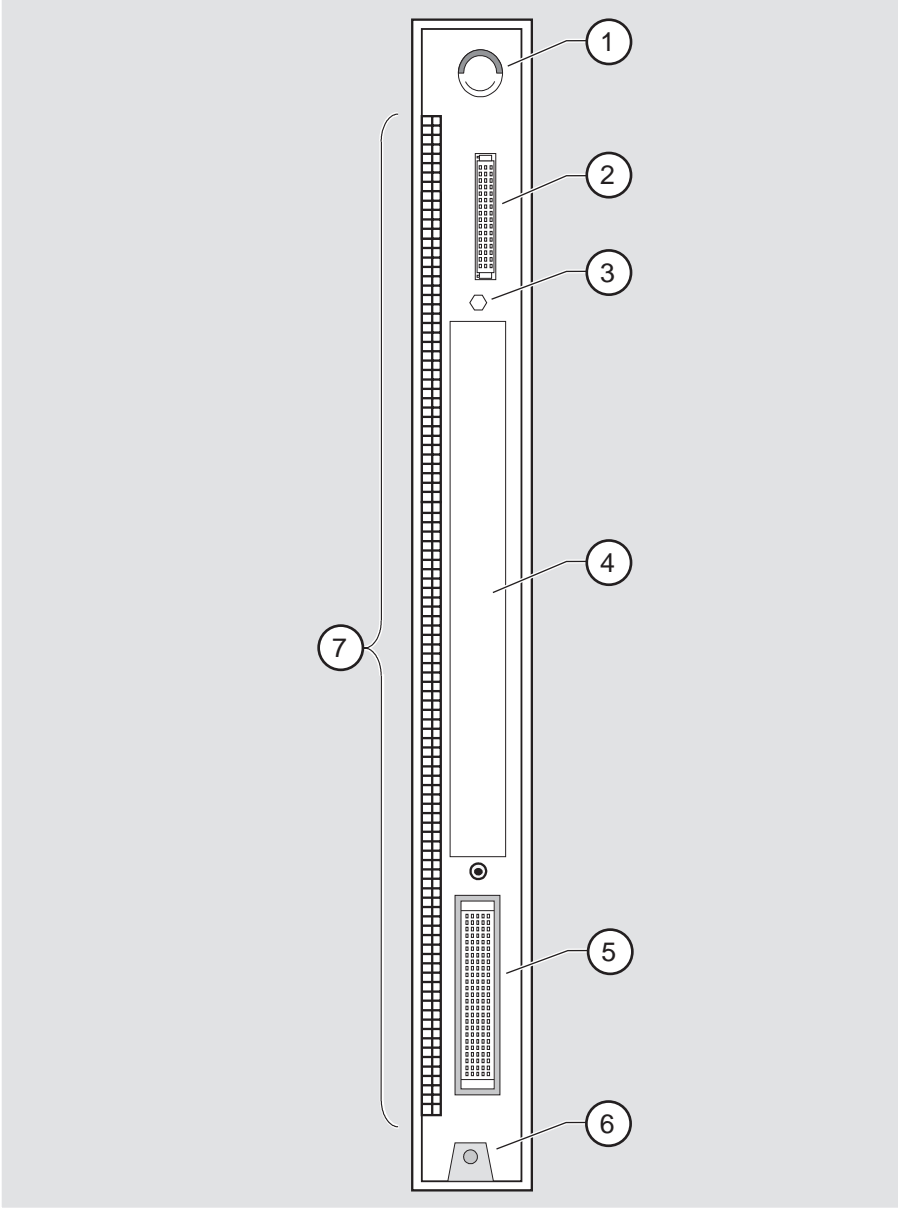
NPG-9723-95F

How to Install the Module

The hot-swap feature allows you to install the module into the DIGITAL MultiSwitch 900 without turning off power. Seating the module initiates the power-up.

To install the module, complete the following tasks.

Task 1: Compare the Power Ratings

Compare your module's power requirements **(1)** with the values shown in the Chassis Manager **(2)** status display (**Figure 2-3**).

If any of the module's power requirements exceed the values shown in the status display, add another power supply (see the *DIGITAL MultiSwitch 900 Owner's Manual*).

Figure 2-3: Sample Power Ratings
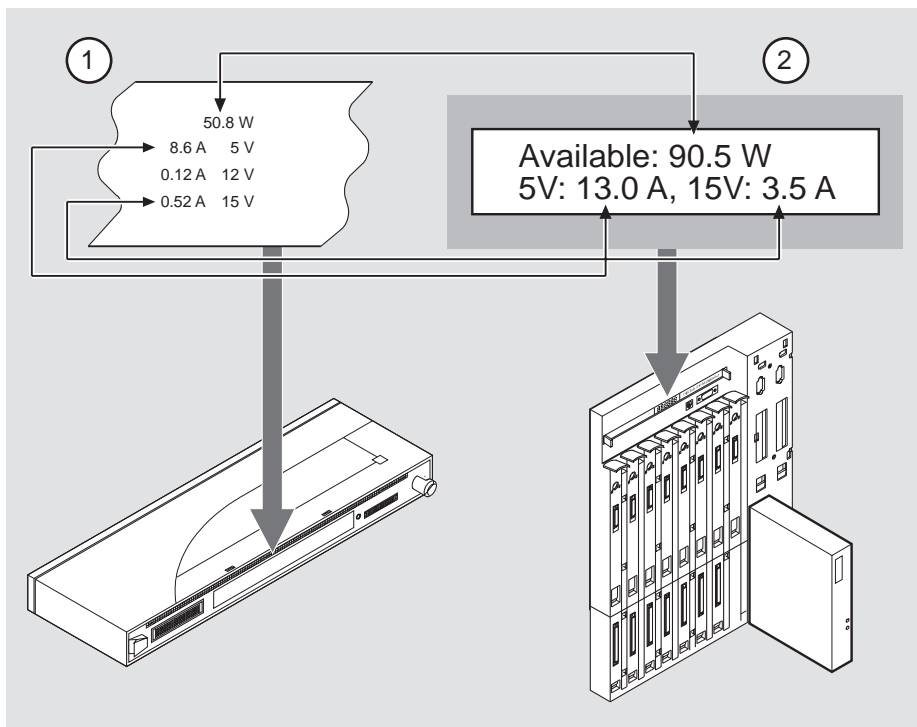
NPB-0719-96F

Task 2: Seat the Module

To seat the module into a DIGITAL MultiSwitch 900 (**Figure 2-4**), complete the following steps:

Step	Action
1	Place the module's mounting tab **(1)** into a mounting slot on the DIGITAL MultiSwitch 900.
2	Pull up the release lever **(2)** to its unlocked position.
3	Pivot the module on the mounting tab, align the connectors, and firmly push the module onto the backplane connectors.
4	Press down the release lever **(3)** to ensure that it is locked.

Figure 2-4: Seating the Module
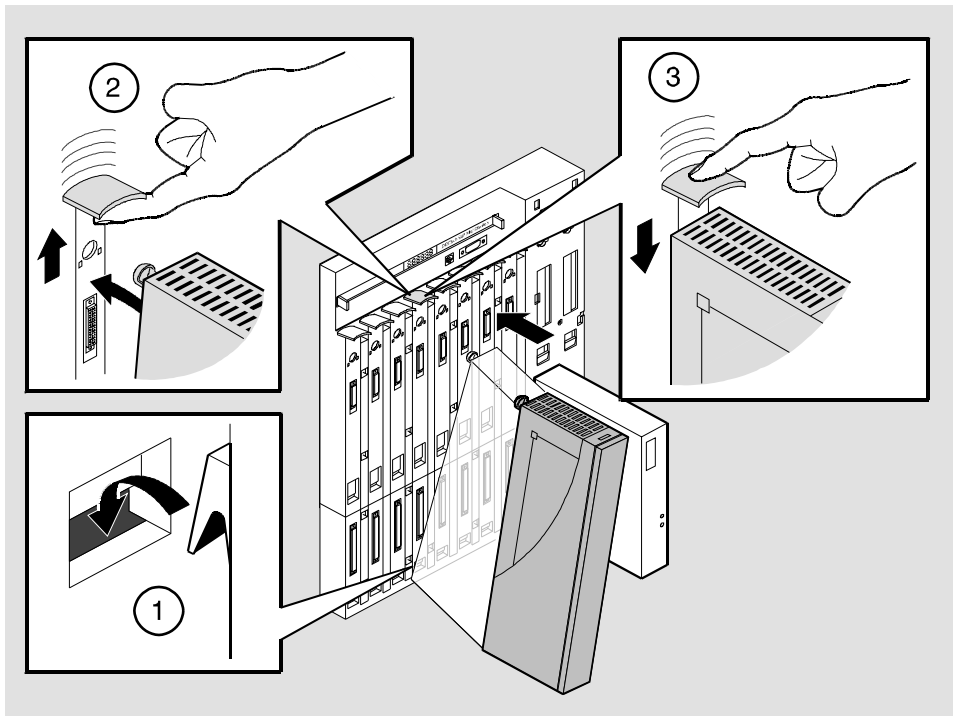
NPG-0004-95F

Task 3: Verify Initial LED Operation

If…	Then…
This is a new installation	Turn on the power to the DIGITAL MultiSwitch 900.
The module was installed while the DIGITAL MultiSwitch 900 is powered up	Seating the module initiates the module's power–up sequence.
	If the LEDs do not operate as described, refer to Appendix A, Problem Solving.
	For locations of the module's LEDs, refer to **Figure 2-1**.

To verify initial LED operation, check the following stages:

Stage	Description
1	When the module receives power, the module's Power LED lights and remains lit.
2	The module runs a self–test.
	Note: The self-test takes approximately three minutes to complete.
3	After the module completes self-test, the Module OK LED lights and remains lit.
4	The Chassis Manager status display shows VNswitch 900CC.

Task 4: Connect the UTP/ScTP Cable

The VNswitch 900CC uses crossover, 100BaseTX, 8-pin, MJ port connectors. Before connecting the cables to the module, note the following rules:

If the device you are connecting to the module uses…	Then use…
Crossover connectors [1]	Crossover cables
Straight-through connectors [2]	Straight-through cables

[1] The sum of crossovers must always equal an odd number.

[2] Digital's straight-through cables are marked (=); crossover connectors and cables are marked (x).

To connect the UTP/ScTp cable (**Figure 2-5**), complete the following steps:

Step	Action
1	Align the release tab on the cable plug (**1**), with the keyway on the module's 100BaseTX port connector.
2	Insert the plug into the connector, ensuring that the release tab snaps into the locked position.

Figure 2-5: UTP/ScTP Cable Connection
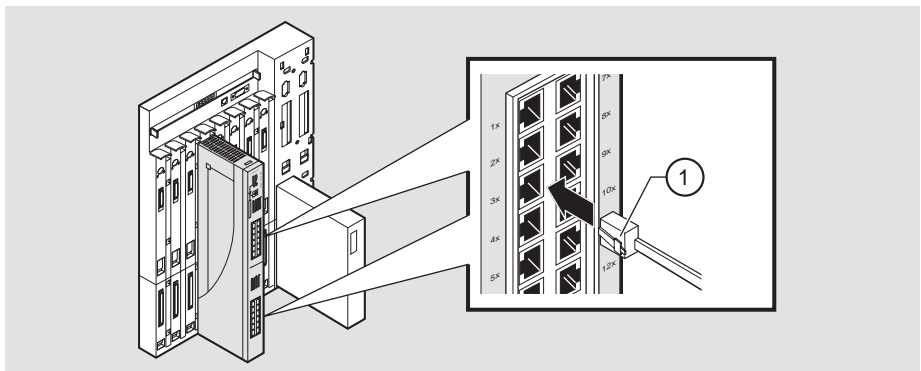
NPB-0466-96F

Task 5: Connect the LDM Port Cable

To perform a remote load/dump, the LDM cable must be connected to the LDM port. The LDM port uses straight-through, 10BaseT, 8-pin MJ connectors.

To connect the LDM port cable to the LDM port (**Figure 2-6**), complete the following steps:

Step	Action
1	Align the release tab on the cable plug **(1)**, with the keyway on the module's 10BaseT port connector.
2	Insert the plug into the connector, ensuring that the release tab snaps into the locked position.

Figure 2-6: LDM Port Cable Connection

NPB-0490-96F

Chapter 3
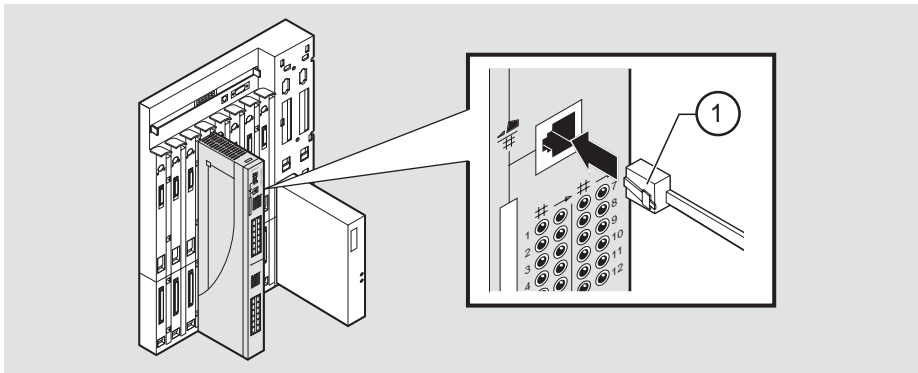
Installing the Setup Port Cable

Overview

Introduction

The setup port on the DIGITAL MultiSwitch 900 (formerly the DEChub 900 MultiSwitch) chassis or the DEChub ONE docking station allows you to access and set DIGITAL VNswitch 900CC parameters. This chapter describes how to access the module from either port and how to set those parameters.

In This Chapter

This chapter contains the following topics:

Topic	Page
Setup Port Signaling Standards	**3-2**
Setup Port Device Cabling	**3-2**
Connecting to the Setup Port	**3-3**

Setup Port Signaling Standards

Signals from the MultiSwitch 900 Chassis Manager setup port and from the DEChub ONE docking station setup port conform to the EIA-232D signaling standard at 9600 baud. To the user, the port appears as a data terminal equipment (DTE) device.

The MultiSwitch 900 Chassis Manager setup port is compatible with devices that use the EIA-423 signaling standard.

Setup Port Device Cabling

The setup port (**Figure 3-1**) on the DIGITAL MultiSwitch 900 chassis or the DEChub ONE docking station can be connected to a setup port device (a terminal or personal computer) by using the following cables and adapters:

If the setup port device is a...	Use this cable…	With this adapter…
PC with a 9-pin D-sub communications port	BN24H-*xx*[1]	H8571-J
Terminal with a 25-pin D-sub connector	BN24H-*xx*[1]	H8575-A
Terminal with a 6-pin MMJ connector	BN24H-*xx*[1]	Not required

[1] xx indicates cable length in meters

Connecting to the Setup Port

To connect to the setup port on the module, complete the following steps:

Step	Action
1	Ensure that the transmit and receive baud rates on the setup port device are set to 9600 baud.
2	Connect the setup port device to the setup port connector on either the MultiSwitch 900 or the DEChub ONE docking station.

The following legend identifies the setup port cabling in **Figure 3-1**:

Item	Description
1	Out-of-Band Management (OBM) Port
2	Setup Port
3	Setup Port Device

Figure 3-1: Setup Port Cabling Components

DIGITAL MultiSwitch 900

DEChub ONE

DEChub ONE-MX

H8571-J

BN24H

H8575-A
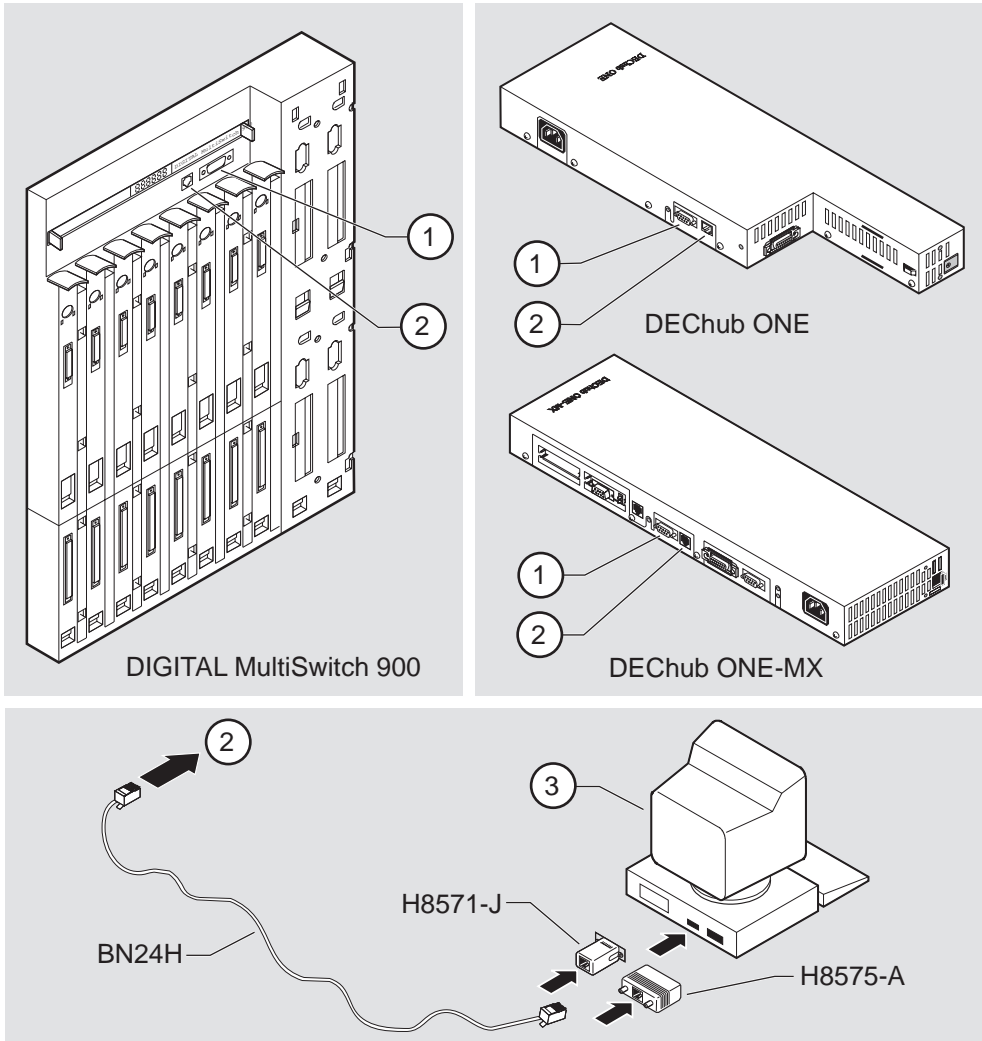
NPG-0020-95F

After all cables are connected, go to one of the following chapters:

To	Go to
Configure the module in a DEChub ONE	Chapter 4
Configure the module in a DIGITAL MultiSwitch 900	Chapter 5

Configuring the Module in a DEChub ONE or DEChub ONE-MX

Overview

Introduction

This chapter describes how to configure your DIGITAL VNswitch 900CC module when it is installed in a DEChub ONE docking station.

Throughout this chapter, the term DEChub ONE refers to the DEChub ONE or the DEChub ONE-MX docking station unless otherwise specified.

For further configuration information, refer to the *DIGITAL VNswitch 900 Series Switch Management*.

In This Chapter

This chapter contains the following topics:

Assigning an IP Address

After installing the module in a DEChub ONE docking station, and connecting the cables, you need to assign an IP address. Do this using one of the following methods:

- A Telnet session to access the command line interface

- Through the command line interface, which is accessed through a terminal connected to the setup port on the DEChub ONE docking station

- Through clearVISN MultiChassis Manager

The setup port provides menus that allow you to access the VNswitch 900CC module. These menus allow you to set up the module for basic connectivity. After setup, you can configure the module's software using commands. You can access these commands *remotely* via TCP/IP Telnet, or *locally* through the setup port on a DEChub ONE docking station.

To perform a Telnet session, you must assign an IP address. To do this, complete the following steps:

Step	Action
1	Install the module into a slot on the DEChub ONE.
2	Select the IP Configuration option from the menu.
3	Set the in-band IP address.
4	Set the default gateway, if necessary.
5	Return to the `VNswitch 900CC INSTALLATION MENU` and select `[2] Restart with Current Settings`.
6	Open a Telnet session into the module from the management station for further configuration.
	To access the configuration menus, press Return on the setup port device until the `VNswitch 900CC INSTALLATION MENU` appears.
	For further configuration information, refer to the *DIGITAL VNswitch 900 Series Switch Management*.

Using Menus to Configure the Module

This section describes the options that are available from the VNswitch 900CC
INSTALLATION MENU when the module is installed in the DEChub ONE docking
station. Depending on the configuration state of the module, some options may not
appear.

To modify the configuration, select [5] Go To Local Console.

The following example shows the dialog associated with this option.

```
   VNswitch 900CC
  =============================================================

              VNswitch 900CC INSTALLATION MENU

          [1]   Restart with Factory Defaults
          [2]   Restart with Current Settings
          [3]   Show Current Settings
          [4]   Configure IP
          [5]   Go to Local Console
          [6]   Product-Specific Options...


  =============================================================
            Enter selection:  5   <Return>
```

[1] Restart with Factory Defaults

This option initializes the module's configuration to factory default values by resetting the module's nonvolatile configuration storage parameters and restarting the module. Allow approximately three minutes for the module to restart. To restart the module without losing the parameters, use option `[2] Restart with Current Settings`.

CAUTION

This action deletes all configured settings and replaces them with factory default values. All configuration settings will be lost.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
 ===========================================================

               RESTART WITH FACTORY DEFAULTS

  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
          IMPORTANT!    IMPORTANT!    IMPORTANT!
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
     This selection will delete the current configuration
     settings and reset the system with the factory default
     settings. All configuration settings will be lost.
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
 ===========================================================
         Press Y to confirm [N]:  <Return>

         Press Return for Main Menu...
```

[2] Restart with Current Settings

This option resets the module but leaves the module's configured nonvolatile configuration storage parameters at their current values.

NOTE

Allow approximately 1 minute for the module to restart.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
=============================================================

                  RESTART WITH CURRENT SETTINGS

  This selection will reset your system with the current
  configuration settings.
=============================================================

          Press Y to confirm [N] :   <Return>

          Press Return for Main Menu...
```

[3] Show Current Settings

This option shows the module's current settings. If the module is being configured for the first time, some fields will be blank.

The following example shows the dialog associated with this option: **(Check this screen with designer.)**

```
VNswitch 900CC
 =======================================================================
VNswitch 900CC, 16 FastEth, DME Pass 4, HW=v0/2,RO=v0.4,SW=v2.2
 SysUpTime                        : 6 days 00:03:18   2 resets
 SNMP Read/Write Community        : public
 Default Gateway:                 : not configured

Interface        IP Address       Subnet Mask       Other Info

In-Band          16.20.216.91     255.255.255.0     08-00-2B-A6-0E-05
OBM Port         16.20.66.156     255.255.255.0     Speed 9600 bps
 =======================================================================
                    Press Return for Main Menu...
```

[4] Configure IP

This option provides you with IP configuration selections.

NOTE

For any of the IP Configuration menu options to take effect, the module needs to be reset. Use `[2] Restart with Current Settings` from the `VNswitch 900CC INSTALLATION MENU`. Allow approximately 1 minute for the module to restart and complete self-test.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
==========================================================
                     IP CONFIGURATION
    * * * * * * * * * * * * * * * * * * * * * * * * * * * *
    Configuration will not take effect until module is
    restarted
    * * * * * * * * * * * * * * * * * * * * * * * * * * * *

        [1]  Set SNMP Read/Write Community
        [2]  Set In-Band Interface IP Address
        [3]  Set Out-of-Band Interface IP Address
        [4]  Set Default Gateway
        [5]  Return to Main Menu
==========================================================
      Enter selection number : n    <Return>
```

The following pages describe the IP Configuration options:

Topic	Page
[1] Set SNMP Read/Write Community	**4-8**
[2] Set In-Band Interface IP Address	**4-9**
[3] Set Out-of-Band Interface IP Address	**4-10**
[4] Set Default Gateway	**4-11**

[1] Set SNMP Read/Write Community

This option prompts you to enter the module's read/write community name. The community name can be used for read/write access control. The read/write community name is case sensitive. The default is public.

The following example shows the dialog associated with this option:

```
    VNswitch 900CC
 ==================================================================
                   SET SMNP READ/WRITE COMMUNITY

 Format:  The format for a community name is a string,
          consisting of 4 to 31 printable ASCII characters, that
          describes the relationship between an SNMP agent and
          one or more SNMP managers. The string defines the
          authentication mechanism that is employed to validate
          the use of the community by the sending SNMP entity.
 ==================================================================
    Enter the community string [public] : <Return>

    SNMP Read/Write community string set.

      Press Return for IP Configuration Menu...
```

[2] Set In-Band Interface IP Address

This option prompts you to change or enter the module's in-band IP address, subnet mask, and default gateway for the in-band interface. If an IP address was previously configured, the screen displays an in-band IP address. The factory default setting is no in-band address.

You do not need to configure the module with a subnet mask for SNMP communications with management stations located on the same subnet as the module.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
================================================================

           IN-BAND INTERFACE IP ADDRESS CONFIGURATION

 Format: The standard 4 octet dotted decimal notation in which
          each octet of the address is represented as a decimal
  .       value, separated by a '.' character.

                      example: 16.20.40.156

To delete the IP address, enter 0 in the appropriate address
field.

Interface      IP Address      Subnet Mask       Other Info

 In-Band       16.20.216.91    255.255.255.0     08-00-2B-A3-CD-08
 OBM Port      16.20.66.156    255.255.255.0     Speed 9600 bps

================================================================

Enter the IP address [16.20.126.24] : 16.20.54.156 <Return>

Enter the Subnet Mask [255.0.0.0] : 255.255.0 0 : <Return>


          Press Return for IP Configuration Menu.....
```

[3] Set Out-of-Band Interface IP Address

This option prompts you to change or enter the IP address and subnet mask for the out-of-band interface. The module does not need to be configured with a subnet mask for SNMP communications when management stations are on the same subnet as the module.

The format for these values is the standard 4-octet dotted decimal notation, where each octet of the address is represented as a decimal value, separated by a decimal point (.).

If the module is in a DEChub ONE docking station, the OBM feature allows you to manage your module through the OBM port located on the DEChub ONE. To enable out-of-band management, you need to assign an OBM IP address.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
=================================================================

         OUT-OF-BAND INTERFACE IP ADDRESS CONFIGURATION

 Format: The standard 4 octet dotted decimal notation in which
         each octet of the address is represented as a decimal
         value, separated by a '.' character.

 .               example: 16.20.40.156

  To delete the address, enter 0 in the appropriate address
  field.

=================================================================
Interface      IP Address      Subnet Mask      Other Info
In-band        16.20.216.91   255.255.255.0   08-00-2B-A3-CD-08
OBM Port       16.20.66.156   255.255.255.0    Speed 9600 bps
=================================================================
 Enter the IP address [16.20.66.156] : 16.20.54.155 <Return>
 Enter the Subnet Mask [255.255.255.0] : 255 255 192 0 <Return>

    Press Return for IP Configuration Menu...
```

[4] Set Default Gateway

This option sets the default gateway, if necessary, for the in-band interface. This is the address of a router that the module uses when communicating with a remote host. The default gateway address must be an address in the same subnet as your in-band address.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
============================================================
         SET IN-BAND INTERFACE DEFAULT GATEWAY ADDRESS

Format: The standard 4 octet dotted decimal notation in which
         each octet of the address is represented as a decimal
         value, separated by a '.' character.

                   example: 16.20.40.156

    To delete the address, enter 0 in the appropriate
    address field.
============================================================
     Default Gateway [] : 16.126.16.254 <Return>

     Default Gateway Address Set.

         Press Return for IP Configuration Menu . . .
```

[5] Go to Local Console

To perform additional configurations on the module, select `[5] Go To Local Console` from the `VNswitch 900CC INSTALLATION MENU.`

The system will display the copyright statements and the following prompt:

```
MOS Operator Control

*
```

From the `*` prompt, you can perform additional configuration. Refer to the *DIGITAL VNswitch 900 Series Switch Management* for further configuration information.

[6] Product-Specific Options

To view or clear the module's error log entries, select [6] Product-Specific Options from the VNswitch 900CC INSTALLATION MENU:

```
  VNswitch 900CC
 ============================================================

              VNswitch 900CC Product Specific Options

          [1]  Clear CRASH and DIAGNOSTIC Error Logs
          [2]  List CRASH and DIAGNOSTIC Error Logs
          [3]  Return to Main Menu


 ============================================================

          Enter selection:  n  <Return>
```

If you select [2] List CRASH and DIAGNOSTIC Error Logs, the screen shows the list of messages recorded to both logs. Select option [1] to clear the information in the logs. Select option [3] to return to the VNswitch 900CC INSTALLATION MENU.

Configuring the Module in a DIGITAL MultiSwitch 900

Overview

Introduction

This chapter describes how to configure your DIGITAL VNswitch 900CC module when it is installed in a DIGITAL MultiSwitch 900 chassis.

In This Chapter

This chapter contains the following topics:

Assigning an IP Address

After installing the module in a DIGITAL MultiSwitch 900 chassis, and connecting the cables, you need to assign an IP address. Do this using one of the following methods:

- A Telnet session to access the command line interface

- Through the command line interface, which is accessed through a terminal connected to the setup port on the MultiSwitch 900 chassis

- Through clearVISN MultiChassis Manager

To perform a Telnet session, you must assign an IP address. To do this, complete the following steps:

Step	Action
1	Install the module into a slot on the DIGITAL MultiSwitch 900.
2	Redirect the DIGITAL MultiSwitch 900 Chassis Manager setup port to the VNswitch 900CC slot.
3	Select the IP Configuration option from the menu.
4	Set the in-band IP address.
5	Set the default gateway, if necessary.
6	Return to the VNswitch 900CC INSTALLATION MENU and select [2] Restart with Current Settings.
7	Open a Telnet session into the module from the management station for further configuration. The system displays copyright statements and the following prompt:

```
MOS Operator Control
*
```

After the system prompt (*) appears, refer to the *DIGITAL VNswitch 900 Series Switch Management* for further configuration information.

DIGITAL MultiSwitch 900 INSTALLATION MENU

The following example shows the DIGITAL MultiSwitch 900 INSTALLATION MENU.

To access the module's setup screen, you must choose option [9] Start Redirect Mode.

```
DIGITAL MultiSwitch 900
=====================================================

        DIGITAL MultiSwitch 900 INSTALLATION MENU

        [1]   Restart with Factory Defaults
        [2]   Restart with Current Settings
        [3]   Show Current Settings
        [4]   Configure IP ...
        [5]   Dump Error Log
        [6]   Downline Upgrade
        [7]   Configure Out-of-Band Port ...
        [8]   Start Event Display Mode
        [9]   Start Redirect Mode
        [10] Product-Specific Options ...

=============================================================
      Enter selection number: 9 <Return>

           Press Return for Main Menu ...
```

[9] Start Redirect Mode

The Start Redirect Mode option redirects the DIGITAL MultiSwitch 900 Chassis Manager setup port to the setup port of any network module (such as the VNswitch 900CC) that is installed into the MultiSwitch 900. This option allows you to configure or obtain status of an installed network module by accessing the specified network module's installation menu.

After you choose the Start Redirect Mode option from the DIGITAL MultiSwitch 900 INSTALLATION MENU, the screen prompts you for a slot number, as shown in the following example. After you enter the number of the slot in which the VNswitch 900CC is installed, the console is redirected to this slot.

NOTE

The slot number may change to reflect the slot number in which your module is installed.

The following example shows you how to redirect the console to a specific slot:

```
Enter the slot number for redirection (1-8):  3 <Return>
Console redirected to 3: VNswitch 900CC
Attempting connection [Ctrl/C to Abort]...
```

If the redirection is successful, after you press Return, the VNswitch 900CC INSTALLATION MENU appears on your screen. If redirection is not successful, for example, you entered a number for an empty slot, you can press Return to start again at the DIGITAL MultiSwitch 900 INSTALLATION MENU.

Using Menus to Configure the Module

The following screen shows the options available from the VNswitch 900CC INSTALLATION MENU when the module is operating in a MultiSwitch 900 configuration. Depending on the configuration state of the module, some options may not appear.

Note that when your module is installed in the MultiSwitch 900, the slot number where the module is installed appears at the top of the menu.

```
 VNswitch 900CC - slot 3
==========================================================

           VNswitch 900CC INSTALLATION MENU

        [1]  Restart with Factory Defaults
        [2]  Restart with Current Settings
        [3]  Show Current Settings
        [4]  Configure IP
        [5]  Go to Local Console
        [6]  Product-Specific Options...

  [Ctrl/C] Return to Chassis Manager Installation Menu

==========================================================
     Enter selection:  n  <Return>
```

[1] Restart with Factory Defaults

This option reboots the module, causing its configured Nonvolatile Random Access Memory (NVRAM) parameters to be initialized to factory default values followed by a module reset. Allow approximately three minutes for the module to reboot and complete self-test. To reset the module without losing the settings, use option [2] Restart with Current Settings.

CAUTION

This action deletes all configured settings and replaces them with factory default values. All configuration settings will be lost.

The following example shows the dialog associated with this option:

```
 VNswitch 900CC - slot 3
 ==========================================================

               RESTART WITH FACTORY DEFAULTS


  * * * * * * * * * * * * * * * * * * * * * * * * * * * *
         IMPORTANT!    IMPORTANT!    IMPORTANT!
  * * * * * * * * * * * * * * * * * * * * * * * * * * * *
     This selection will delete the current configuration
     settings and reset the system with the factory default
     settings. All configuration settings will be lost.
  * * * * * * * * * * * * * * * * * * * * * * * * * * * *
 ==========================================================
      Press Y to confirm [N]:    <Return>

      Press Return for Main Menu...
```

[2] Restart with Current Settings

This option resets the module but leaves the module's configured nonvolatile configuration storage parameters at their current values.

NOTE

Allow approximately 1 minute for the module to restart.

The following example shows the dialog associated with this option:

```
 VNswitch 900CC - slot 3
 =============================================================
                 RESTART WITH CURRENT SETTINGS

  This selection will reset your system with the current
  configuration settings.
 =============================================================
Press Y to confirm [N] :   <Return>

Press Return for Main Menu...
```

[3] Show Current Settings

This option shows the module's current settings. If the module is being configured for the first time, some fields will be blank. The read/write community name is case sensitive.

The following example shows the display associated with this option: **(Check this screen with designers.)**

```
  VNswitch 900CC - slot 3
  ====================================================================
  VNswitch 900CC, 16 FastEth, DME Pass 4, HW=,RO=x,#525, SW=V2.2
   SysUpTime                          : 6 days 00:03:18   2 resets
   SNMP Read/Write Community      : public
   Deafult Gateway:                  : not configured

   Interface      IP Address      Subnet Mask      Other Info

   In-Band        16.20.216.91    255.255.255.0    08-00-2B-A6-0E-05

   OBM Port       16.20.66.156    255.255.255.0    Speed 9600 bps
  ====================================================================
         Press Return for Main Menu...
```

[4] Configure IP

This option provides you with IP configuration selections.

NOTE

For any of the IP Configuration menu options to take effect, the module needs to be reset. Use [2] Restart with Current Settings from the VNswitch 900CC INSTALLATION MENU. Allow approximately 1 minute for the module to restart and complete self-test.

The following example shows the dialog associated with this option:

```
VNswitch 900CC
=========================================================
                   IP CONFIGURATION
   * * * * * * * * * * * * * * * * * * * * * * * * * * *
   Configuration will not take effect until module is
   restarted
   * * * * * * * * * * * * * * * * * * * * * * * * * * *

       [1]  Set SNMP Read/Write Community
       [2]  Set In-Band Interface IP Address
       [3]  Set Out-of-Band Interface IP Address
       [4]  Set Default Gateway
       [5]  Return to Main Menu
=========================================================
     Enter selection number : n    <Return>
```

The following pages describe the IP Configuration options:

Topic	Page
[1] Set SNMP Read/Write Community	**5-10**
[2] Set In-Band Interface IP Address	**5-11**
[3] Set Out-of-Band Interface IP Address	**5-12**
[4] Set Default Gateway	**5-13**

[1] Set SNMP Read/Write Community

This option prompts you to enter the module's read/write community name. The community name can be used for read/write access control. The read/write community name is case sensitive. The default is public.

The following example shows the dialog associated with this option:

```
VNswitch 900CC - slot 3
==================================================================
                    SET SMNP READ/WRITE COMMUNITY

Format:  The format for a community name is a string,
         consisting of 4 to 31 printable ASCII characters, that
         describes the relationship between an SNMP agent and
         one or more SNMP managers. The string defines the
         authentication mechanism that is employed to validate
         the use of the community by the sending SNMP entity.
==================================================================
    Enter the community string [public] : <Return>

    SNMP Read/Write community string set.

       Press Return for IP Configuration Menu...
```

[2] Set In-Band Interface IP Address

This option prompts you to change or enter the module's in-band IP address, subnet mask, and default gateway for the in-band interface. If an IP address was previously configured, the screen displays an in-band IP address. The factory default setting is no in-band address.

You do not need to configure the module with a subnet mask for SNMP communications with management stations located on the same subnet as the module.

The following example shows the dialog associated with this option:

```
VNswitch 900CC - slot 3
=================================================================

            IN-BAND INTERFACE IP ADDRESS CONFIGURATION

 Format: The standard 4 octet dotted decimal notation in which
          each octet of the address is represented as a decimal
    .     value, separated by a '.' character.

                      example: 16.20.40.156


To delete the IP address, enter 0 in the appropriate address
field.

Interface      IP Address      Subnet Mask       Other Info

 In-Band      16.20.216.91    255.255.255.0     08-00-2B-A3-CD-08
 OBM Port     16.20.66.156    255.255.255.0     Speed 9600 bps

=================================================================

Enter the IP address [16.20.126.24] : 16.20.54.156 <Return>

Enter the Subnet Mask [255.0.0.0] : 255.255.0 0 : <Return>


          Press Return for IP Configuration Menu.....
```

[3] Set Out-of-Band Interface IP Address

This option prompts you to change or enter the IP address and subnet mask for the out-of-band interface. The module does not need to be configured with a subnet mask for SNMP communications when management stations are on the same subnet as the module.

The format for these values is the standard 4-octet dotted decimal notation, where each octet of the address is represented as a decimal value, separated by a decimal point (.).

If the module is in a MultiSwitch 900, the OBM feature allows you to manage your module through the OBM port located on the MultiSwitch 900. To enable out-of-band management, you need to assign an OBM IP address.

The following example shows the dialog associated with this option:

```
VNswitch 900CC - slot 3
==================================================================

          OUT-OF-BAND INTERFACE IP ADDRESS CONFIGURATION

 Format: The standard 4 octet dotted decimal notation in which
          each octet of the address is represented as a decimal
          value, separated by a '.' character.

  .                  example: 16.20.40.156

  To delete the address, enter 0 in the appropriate address
  field.
==================================================================
Interface      IP Address      Subnet Mask       Other Info

In-band        16.20.216.91   255.255.255.0    08-00-2B-A3-CD-08

OBM Port       16.20.66.156   255.255.255.0    Speed 9600 bps
==================================================================
Enter the IP address [16.20.66.156] : 16.20.54.155 <Return>

Enter the Subnet Mask [255.255.255.0] : 255 255 192 0 <Return>

   Press Return for IP Configuration Menu...
```

[4] Set Default Gateway

This option sets the default gateway, if necessary. This is the address the module uses when communicating with a remote host. The default gateway address must be in the same subnet as your in-band address.

The following example shows the dialog associated with this option:

```
VNswitch 900CC  - slot 3
===========================================================
         SET IN-BAND INTERFACE DEFAULT GATEWAY ADDRESS


Format: The standard 4 octet dotted decimal notation in which
         each octet of the address is represented as a decimal
         value, separated by a '.' character.

                   example: 16.20.40.156

    To delete the address, enter 0 in the appropriate
    address field.
 ===========================================================

     Default Gateway [] : 16.126.16.254 <Return>

     Default Gateway Address Set.

         Press Return for IP Configuration Menu . . .
```

[5] Go to Local Console

To perform additional configurations on the module, select [5] Go To Local Console from the VNswitch 900CC INSTALLATION MENU.

The system will display the copyright statements and the following prompt:

```
MOS Operator Control
*
```

From the * prompt, you can perform additional configuration. Refer to the *DIGITAL VNswitch 900 Series Switch Management* for further configuration information.

[6] Product-Specific Options (VNswitch 900CC)

To view or clear the module's error log entries, select [6] Product-Specific Options from the VNswitch 900CC INSTALLATION MENU:

```
  VNswitch 900CC
 ============================================================

   VNswitch 900CC Product Specific Options

          [1]  Clear CRASH and DIAGNOSTIC Error Logs
          [2]  List CRASH and DIAGNOSTIC Error Logs
          [3]  Return to Main Menu


 ============================================================

         Enter selection:  n  <Return>
```

If you select [2] List CRASH and DIAGNOSTIC Error Logs, the screen shows the list of messages recorded to both logs. Select option [1] to clear the information in the logs. Select option [3] to return to the VNswitch 900CC INSTALLATION MENU.

[10] Product-Specific Options (MultiSwitch 900)

This option provides product-specific selections when you are using a MultiSwitch 900. When selected, the option allows you to enable and disable the automatic VNbus connection.

```
 DIGITAL MultiSwitch 900
 ========================================================

                PRODUCT-SPECIFIC OPTIONS

        [1] Enable/Disable Automatic VNbus Connection
        [2] Return to Main Menu


            Enter selection:
```

If you select the option `[1] Enable/Disable Automatic VNbus`

`Connection` the following menu appears:

```
DIGITAL MultiSwitch 900
 =====================================================================
          ENABLE / DISABLE AUTOMATIC VNbus CONNECTION

 Enabling Automatic VNbus Connection means that certain backplane
 channels will be reserved for a VNbus. The channels will be reserved
 reserved as soon as this feature is Enabled, and will remain
 reserved until this feature is Disabled. When a VNswitch module
 is inserted into the chassis, it will connect automatically to the
 VNbus. The Enable function will return an error if backplane channels
 cannot be reserved due to existing conditions.


 Disabling Automatic VNbus Connection means that no backplane channels
 will be reserved for a VNbus. Inserting VNswitch modules will not
 create connections to a VNbus. If any VNswitch modules are
 connected to a VNbus when the Disable mode is selected, the VNbus
 will remain until the last VNswitch module is removed from the chassis.

=====================================================================
Automatic VNbus connection is Enabled. Would you like to Disable it? [N]
       Press Return for Product-Specific Options Menu ...
```

Chapter 6

Removing the Module

Overview

Introduction

This chapter describes how to remove the DIGITAL VNswitch 900CC module from a DIGITAL MultiSwitch 900 chassis.

To remove the VNswitch 900CCmodule from a DEChub ONE or a DEChub ONE-MX docking station, refer to the *DEChub ONE* or *DEChub ONE-MX Installation* manual.

In This Chapter

This chapter contains the following topics:

Topic	Page
Removing the Cables	**6-2**
Unseating the Module	**6-3**

Removing the Cables

Before the module is unseated, the UTP/ScTP and LDM cables must be removed from the module. To remove the cables (**Figure 6-1** and **Figure 6-2**), complete these steps:
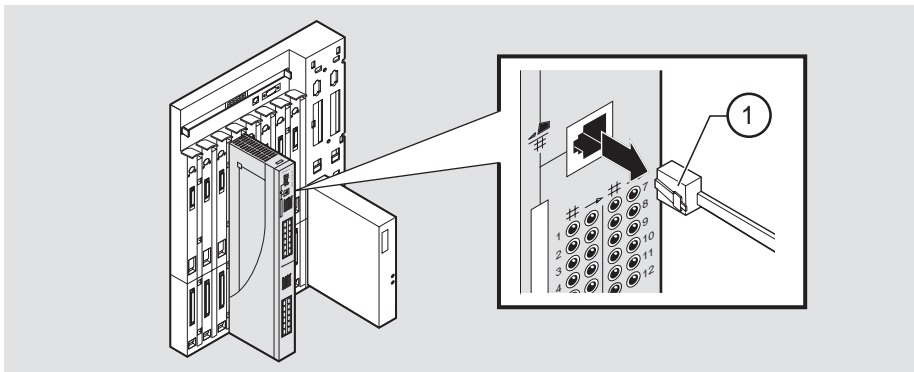
Step	Action
1	Push in the release tab **(1)** on the side of the connector.
2	Pull out the cable(s).

Figure 6-1: Removing UTP/ScTP Cables
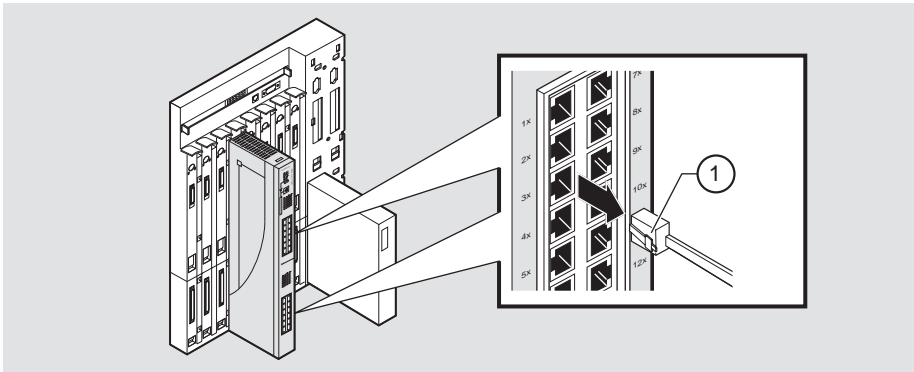
NPB-0467-96F

**Figure 6-2: Removing the LDM Port Cable**

NPB-0491-96F

Unseating the Module

To unseat the module from the DIGITAL MultiSwitch 900 chassis (**Figure 6-3**), complete the following steps:

Step	Action
1	Lift the release lever **(1)** at the top of the DIGITAL MultiSwitch 900 slot.
2	While holding up the release lever **(2)**, pivot the module back on its bottom mounting tab.
3	Lift the module **(3)** from the backplane.

Figure 6-3: Unseating the Module
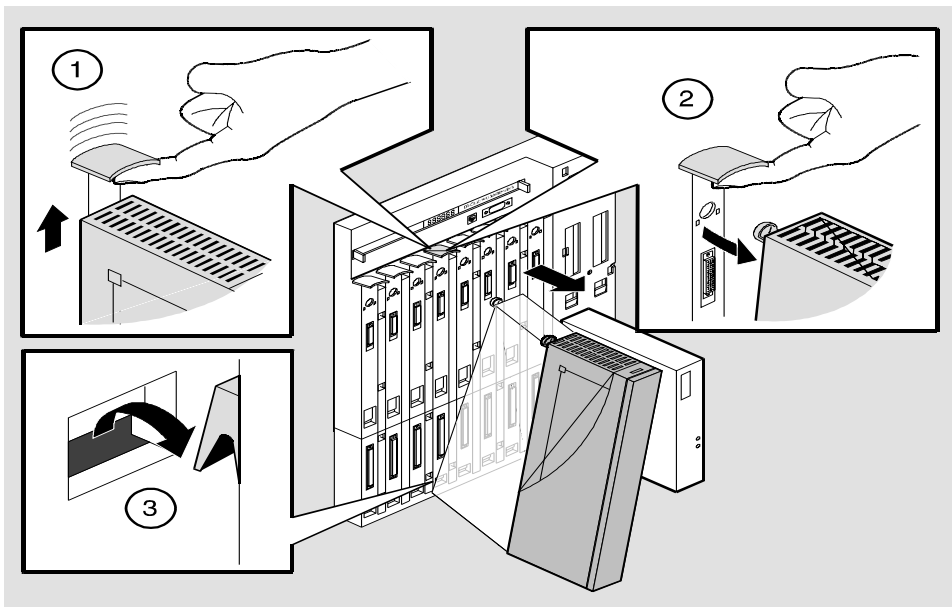
NPG-0008-95F

Appendix A

Problem Solving

Overview

Introduction

This appendix describes how to diagnose and solve problems with the module using the light-emitting diodes (LED) displays.

In This Appendix

This appendix contains the following topics:

Normal Power-Up

When the module's power is initially turned on, the following events occur:

Event	Description
1	The module's Power LED lights as soon as power is applied to the unit.
2	The module initiates its built-in self-test. Flashing Port State LEDs and Port Activity LEDs indicate that the module is running various subroutines as part of the self-test.
3	After the successful completion of self-test (within three minutes after power is applied), the Module OK LED becomes lit.
4	The remaining LEDs now indicate their operational status.

Refer to **Table A-1** for a list of states that are possible for each of the module's LEDs.

LED Descriptions

The module's LEDs provide dynamic indications of the module's status. The LEDs can be in various states (on, off, or flashing), and can change color (green or yellow) depending on the operational status of the module or the level of activity on the network.

Table A-1 shows the states that are possible for each of the module's LEDs. **(Check)**

Table A-1: Module LED States

LED	Off	On (Green)	On (Yellow)	Flashing
Power LED	No power or not enough power available in the MultiSwitch 900.	Module is receiving power.	N/A	N/A
Module OK LED	Self-test has failed or is in progress.	Module passed self-test.	N/A	Indicates a downline load or a nonfatal failure.
VNbus Status LED	No connection.	Module is properly attached to one of the backplane VNbuses.	See release notes.[1]	**(Green)** VNbus is disconnected by management software.
VNbus Activity LED	No traffic.	N/A	Heavy traffic. See release notes.[1]	**(Yellow)** Port is receiving/ transmitting traffic on the backplane.
LDM Port Status LED	No link established.	Proper link established.	N/A	Disabled.

[1] The VNbus Status and Activity LEDs have different indications during a load state. Refer to the release notes for current descriptions.

LED Name	Off	On (Green)	On (Yellow)	Flashing
LDM Activity LED →	N/A	Indicates high traffic.	N/A	Transmitting or receiving packets.
Port Status LEDs	No valid link being received on the port. No cable is attached. Port is broken.	Port is enabled onto the front panel and is receiving a valid link.	Port failure.	**(Green)** Port is management disabled for forwarding but is still receiving a valid link.
Port Activity LEDs →	No traffic is being received/ transmitted to the port.	Port is enabled onto the front panel and is receiving a valid link.	Port is enabled onto a back panel channel and is receiving a valid link. (In a DEChub ONE or MultiSwitch 900.)	**(Green)** Port is receiving/ transmitting traffic on the front panel. **(Yellow)** Port is receiving/ transmitting traffic on the back panel.

Problem Solving Using LEDs

When diagnosing a problem with the module, note that the problem is often indicated by the combined states of the module LEDs. **Table A-2** lists the typical combined states of the LEDs for various error conditions that can occur during initial installation of the device, along with probable causes and corrective actions to take.

NOTE

If any of the following problems persist after taking corrective action, either replace the module or contact your DIGITAL service representative.

Table A-2: Problem Solving Using the LEDs

Symptom	Probable Cause	Corrective Action
Power LED is off.	The module is not receiving +5 Vdc.	Check the power status on the Chassis Manager status display.
		If the Chassis Manager status display indicates that power is available for this module, press the release lever and reseat or remove the module.
		Inspect the module's 48- or 160-pin connector for bent or broken pins. If any are bent or broken, replace the module.
Module OK LED is off.	Self-test failed.	If the LED does not light within 3 minutes, lift and reseat the release lever momentarily to repeat the self-test.
Module OK LED is flashing, but module continues to operate normally.	A nonfatal error occurred.	Contact your DIGITAL service representative.

(continued on next page)

Symptom	Probable Cause	Corrective Action
VNbus Status LED is off.	No connection.	Check that the module is properly attached to one of the backplane VNbuses and that the VNbus is connected by management software.
VNbus Activity LED is off.	There is low traffic activity or no traffic activity.	Ensure that there is traffic activity. If the VNbus Activity LED fails to turn on, then turn the module off momentarily by removing it from the power supply. Check that the VNbus Activity LED blinks momentarily during the LED power–up self–test.
	The module or any other unit in the MultiSwitch 900 may not be connected to an active VNbus channel.	Connect a known active VNbus channel to any unit in the MultiSwitch 900.
	If the module is connected to an active VNbus and the VNbus Activity LED is off, the module is defective.	Replace the module.
LDM Port Status LED is off.	No link established.	Check that a proper link has been established.
Port Status LEDs are off.	No cable attached or port is broken.	Check cable type.
Port Activity LEDs are off.	There is low or no port activity.	Ensure that the port is present. If the Port Activity LED stills fails to turn on, then turn the module off momentarily by removing it from the power supply. Check that the Port Activity LEDs blink momentarily during the LED power-up self-test.
	Ensure that the cable has activity on it. If the LED still fails to turn on, the module is defective.	Replace the module.

Appendix B

Connectors and Adapters

Overview

This appendix shows detailed illustrations of the connectors and their pin assignments, and adapters used on the DIGITAL VNswitch 900CC module.

In This Appendix

This appendix contains the following topics:

| Topic	Page
Connectors and Pin Assignments	**B-2**
Adapters	**B-4**

Connectors and Pin Assignments

100BaseTX Port (8-pin MJ) Crossover Connector

(Check on this section.)

The DIGITAL VNswitch 900CC uses crossover connectors for its sixteen 100BaseTX front panel ports. **Figure B-1** shows the 8-pin MJ crossover connector and its pin assignments.

Figure B-1: 8-pin MJ Crossover Connector
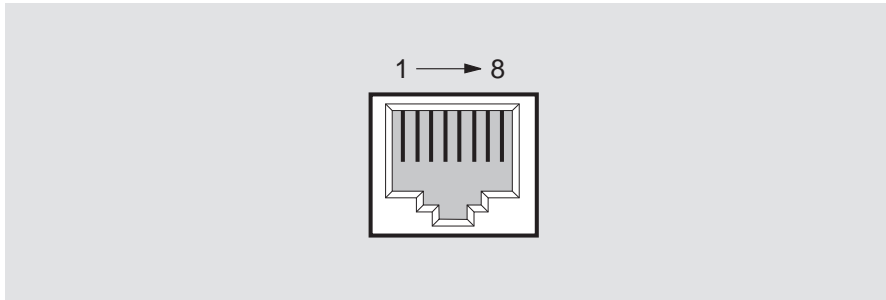
NPG-8719-95F

Table B-1 lists the pin assignments for the 8-pin MJ crossover connector.
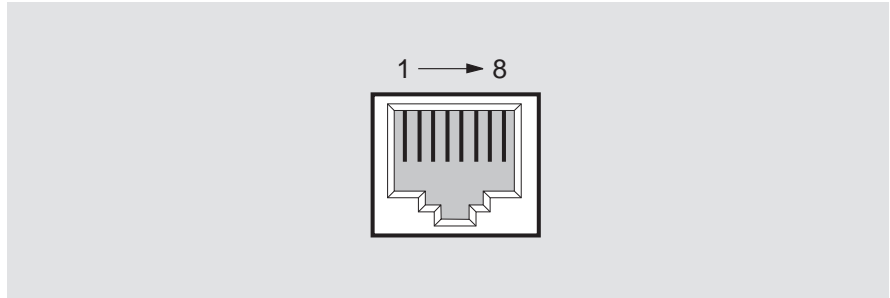
Table B-1: 8-pin MJ Crossover Connector Pin Assignments

Pin	Assignment
1	RX+
2	RX-
3	TX+
4	no connection
5	no connection
6	TX-
7	no connection
8	no connection

10BaseT Port (8-pin MJ) Straight-through Connector

The VNswitch 900CC uses a straight-through connector for its LDM 10BaseT front panel port. **Figure B-2** shows the 8-pin MJ straight-through port connector and its pin assignments.

Figure B-2: 8-pin MJ Straight-through Connector

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Table B-2 lists the pin assignments for the 8-pin MJ straight-through connector.

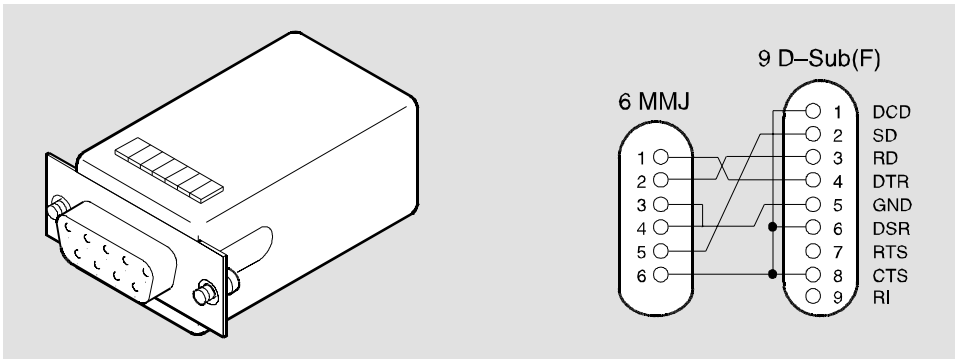**Table B-2: 8-pin MJ Straight-through Connector Pin Assignments**

Pin	Assignment
1	TX+
2	TX-
3	RX+
4	no connection
5	no connection
6	RX-
7	no connection
8	no connection

Adapters

H8571-J Adapter

Figure B-3 shows the H8571-J adapter (6-pin MMJ connector to 9-pin D-sub connector) and its pin assignments.
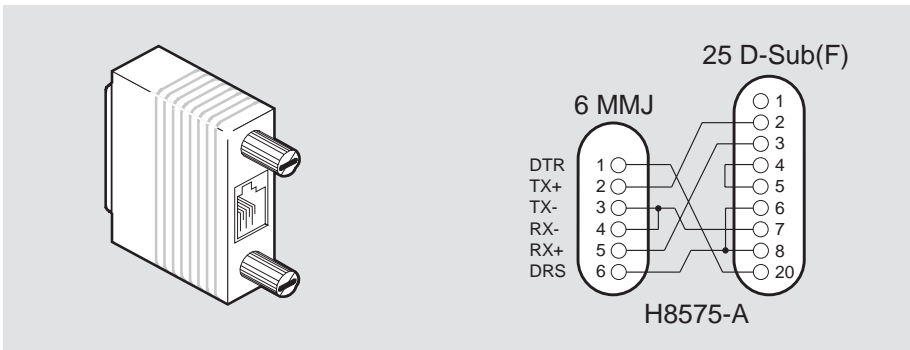
Figure B-3: H8571-J Adapter

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H8575-A Adapter

Figure B-4 shows the H8575-A adapter (6-pin MMJ connector to 25-pin D-sub connector) and its pin assignments.

Figure B-4: H8575-A Adapter

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Appendix C

Product Specifications

Overview

This appendix lists the product and acoustical specifications for the DIGITAL VNswitch 900CC module. It also provides a list of connectors on the VNswitch 900CC module, the MultiSwitch 900 chassis, and the DEChub ONE and DEChub ONE-MX docking stations.

In This Appendix

This appendix contains the following topics:

Product Specifications

Table C-1 lists the product specifications for the module.

Table C-1: Product Specifications

Parameter	Specification
Environment	
Operating temperature[1]	5°C to 50°C (41°F to 122°F)
Relative Humidity	10% to 95% noncondensing
Altitude	
• Operating	Sea level to 4,267 m (14,000 ft.)
• Nonoperating	Sea level to 12,192 m (40,000 ft.)
Power	50.5 W, total power 8.6 A, 5 Vdc 0.12 A, 12 Vdc 0.5 A, 15 Vdc
Physical	
Height	44.45 cm (17.5 in)
Width	4.45 cm (1.75 in)
Depth	15.25 cm (6 in)
Weight	1.83 kg (4.03 lb)
Shock (Class A/B for products weighing under 100 lbs)	10 G / 10 ms half sine pulse in three orthogonal axes
Vibration (Class C)	5 to 200 Hz sine sweep @ 0.25 G limited by 0.5mm (0.02 in) displacement DA* 200 to 500 Hz sine sweep @ 0.10 G
Certification	CE, CSA, FCC, TÜV, UL, cUL, VCCI, C-TICK

[1] For sites above 2400 m (8,000 ft), decrease the operating temperature specification by 1.8°C for each 1000 m or 3.2°F for each 3200 ft·

Acoustical Specifications

Table C-2 and **Table C-3** lists the acoustical specifications for the module in English and German.

Table C-2: Acoustical Specifications

Declared Values per ISO 9296 and ISO 7779[1]

Product	Sound Power Level L_{WAd}, B	Sound Pressure Level L_{pAm}, dBA (bystander positions)
	Idle/Operate	Idle/Operate
DVNCC	5.0	37.0

[1] Current values for specific configurations are available from Digital Equipment Corporation representatives. 1 B = 10 dBA.

Table C-3: German Acoustical Specifications

Schallemissionswerte Werteangaben nach ISO 9296 und ISO 7779/DIN EN27779[2]

Produkt	Schalleistungspegel L_{WAd}, B	Schalldruckpegel L_{pAm}, dBA (Zuschauerpositionen)
	Leerlauf/Betrieb	Leerlauf/Betrieb
DVNCC	5.0	37.0

[2] Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich. 1 B = 10 dBA.

Connectors

Table C-4 provides a list connectors for VNswitch 900CC module, the MultiSwitch 900 chassis, and the DEChub ONE and the DEChub ONE-MX docking stations.

Table C-4: Connectors

Connectors	Quantity
VNswitch 900CC:	
8-pin MJ (100BaseTX unshielded twisted pair)	16
8-pin MJ (10BaseT twisted pair)	1
MultiSwitch 900:	
8-pin MJ (setup Port)	1
DB-9 (OBM)	1
DEChub ONE:	
8-pin MJ (setup Port)	1
DB-9 (OBM)	1
15-pin D-Sub (AUI Connector)	1
DEChub ONE-MX:	
8-pin MJ (setup Port)	1
6-pin MJ (OBR)	1
DB-9 (OBM)	1
15-pin D-Sub (AUI Connector)	1
Redundant power connector (D-sub)	1
Mod PMD slots	2