HUBwatch

Installation and Configuration

Part Number: AA-Q3S8D-TE

May 1995

This book explains how to install and start the HUBwatch management software. It also explains how to configure network modules for HUBwatch management.

Revision/Update Information:	This is a revised document
Operating System and Version:	MS-DOS Version 6.0 or higher Microsoft Windows Version 4.0 or higher OpenVMS VAX Version 5.4 or higher DEC OSF/1 AXP (Digital UNIX) Version 2.0 or higher
Software and Version:	HUBwatch for Windows Version 4.0 HUBwatch for OpenVMS Version 4.0 HUBwatch for OSF/1 AXP Version 4.0

CONTENTS

HUBWATCH FOR DEC OSF/1 AXP INSTALLATION 3-1

Preface

Purpose of This Book

This manual explains how to install and start the HUBwatch™ application under the Microsoft® Windows™, OpenVMS™, and DEC OSF/1 AXP™ (Digital UNIX) operating systems. HUBwatch manages the DEChub™ family of products as well as the GIGAswitch™ family of products.

This manual also explains how to configure SNMP agents and network modules so that the HUBwatch software can manage them.

Finding GIGAswitch Information

If you are using the HUBwatch software to manage a GIGAswitch, refer to the documentation supplied with the GIGAswitch system for GIGAswitch configuration information.

Finding Firmware Information

Each of your hubs and modules need to run the most recently released version of the firmware. Because Digital is continuously improving the quality of the DEChub product family, periodic releases of firmware will become available. To find information about the latest firmware releases:

- Contact your local Digital reseller or your local Digital sales office.
- Read the README file found in the /pub/DEC/hub900 directory at ftp.digital.com.

Firmware updates are customer installable. To register for automatic notification of new firmware releases, return the Business Reply Card supplied with this product, or send your name, title, and mailing address to dechub_notice@lkg.dec.com.

Organization of This Book

This book is organized as follows:

- Chapter 1 describes how to install and start the HUBwatch for Windows software and the online tutorial. It includes hardware and software requirements.
- Chapter 2 describes how to install and start the HUBwatch for OpenVMS software. It includes hardware and software requirements. It also includes installation troubleshooting information.
- Chapter 3 describes how to install and start the HUBwatch for DEC OSF/1 AXP software. It includes hardware and software requirements.
- Chapter 4 describes configuration considerations before you configure modules.
- Chapter 5 describes configuration procedures for SNMP agents and network modules.
- Appendix A describes how to run the HUBwatch for OpenVMS and DEC OSF/1 AXP software as an add-on application to the POLYCENTER network management platform. It also describes how to launch HUBwatch for Windows from HP® OpenView.
- Appendix B describes how to run the HUBwatch for Windows software with the Serial Line Internet Protocol (SLIP) protocol.
- Appendix C explains how to run the HUBwatch for Windows software with a PATHWORKS network.
- Appendix D gives troubleshooting information for the HUBwatch for Windows installation.
- Appendix E lists the modules you can manage with the HUBwatch software.

Related Documentation

The following table lists documentation that is related to the HUBwatch software. See the ordering information at the back of this manual.

For Information About...	See...
DEChub Firmware Updates	`/pub/DEC/hub900/README at ftp.digital.com`
DECagent 90	*DECagent 90 User's Information*
Hub Manager	*DEChub 900 MultiSwitch Owner's Manual*
GIGAswitch System	*GIGAswitch/FDDI System Manager's Guide*
	GIGAswitch/FDDI System Out-of-Band Management (OBM) Guide
	GIGAswitch/FDDI System SNMP Guide
	GIGAswitch/FDDI Installation Service Guide
	GIGAswitch/FDDI Special Features Guide
DEChub and HUBwatch	*DEChub 90 Owner's Manual*
	DEChub 900 MultiSwitch Owner's Manual
	HUBwatch USE
	HUBwatch USE for Windows
	HUBwatch for Windows Quick Start
DECbridges	*DECbridge 90 Owner's Manual*
	DECbridge 90FL Owner's Manual
	DECbridge 900MX Owner's Manual
	RoamAbout Access Point Owner's Manual
	RoamAbout Access Point Installation
DECbrouters	*DECbrouter 90T1 Owner's Manual*
	DECbrouter 90T2 Owner's Manual
	DECbrouter 90T2A Owner's Manual

For Information About...	See...
DECswitches	*DECswitch 900EE Installation*
	DECswitch 900EF Installation
	PEswitch 900TX Installation
DECrepeaters	*DECrepeater 90C Owner's Manual*
	DECrepeater 90T Owner's Manual
	DECrepeater 90TS Installation and Configuration
	DECrepeater 90FA Owner's Manual
	DECrepeater 90FS Installation and Configuration
	DECrepeater 90FL Owner's Manual
	DECrepeater 900GM Installation and Configuration
	DECrepeater 900TM Installation and Configuration
PORTswitches	*PORTswitch 900FP Installation and Configuration*
	PORTswitch 900CP Installation and Configuration
	PORTswitch 900TP Installation and Configuration
Access Servers	*DECserver 90L Owner's Manual*
	DECserver 90L+ Owner's Manual
	DECserver 90TL and 90M Owner's Manual
	DECserver 900TM Owner's Manual
	DECserver 900TH Installation and Configuration

For Information About...	See...
DECconcentrators	*DECconcentrator 900MX Installation and Configuration*
	DECconcentrator 900TH Installation and Configuration
	DECmau 900TH Installation and Configuration
DECwanrouters	*DECwanrouter 90/150/250 Management*
Miscellaneous	*OPEN DECconnect Applications Guide*
	OPEN DECconnect Building Wiring Components and Application Catalog
	DECconnect System Planning and Configuration Guide
	Network Buyer's Guide
	Bridge Extended LAN Reference

Conventions

This book uses the following conventions.

Convention	Meaning
<Return>	A key name enclosed in angle brackets indicates that you press that key. In this example, you would press the Return key.
Italic type	Emphasizes important information, indicates variables, and indicates complete titles of documents.
Boldface type	Boldface type in examples indicates user input.
`Monospaced type`	Text that the system displays on the screen.
Click on	To press and release a mouse button when the pointer is positioned on an active object.
[ ]	Brackets contain default responses to prompts. To accept the default response to a prompt, simply press Return.
Ctrl/*x*	Indicates that you press the Control key while you type the key represented by *x*.
Ethernet	The term *Ethernet* is used in this manual to refer to the IEEE 802.3 standard.
Token Ring	The term *Token Ring* is used in this manual to refer to the IEEE 802.5 standard.
00.00.00.00	Represents an IP address in examples and figures.
08-00-2B-00-00-00	Represents a MAC address in examples and figures.

Documentation Comments

If you have comments or suggestions for this book or any of the HUBwatch documents, you can submit them in two ways:

- Mail the Reader's Comment form on the last page of this document to the address on the reverse side of the form.
- If you have access to the Internet, mail your comments electronically to the HUBwatch writing group within Digital at the following address:

  `doc_quality@lkg.mts.dec.com`

1

HUBwatch for Windows Installation

Overview

Introduction

This chapter provides information for installing the HUBwatch for Windows application.

In This Chapter

This chapter includes the following topics:

- Pre-installation considerations.
- Installing HUBwatch for Windows.
- Installing the HUBwatch online tutorial.
- Post-installation tasks.

HUBwatch Software References

In this book, the term "HUBwatch" refers to the HUBwatch for Windows, HUBwatch for OpenVMS, and HUBwatch for DEC OSF/1 AXP (Digital UNIX) software.

Valid Configurations

You can install the HUBwatch for Windows software in the following configurations:

- To run as a standalone application.
- To run under Digital ManageWORKS Workgroup Administrator software.
- To run under HP® OpenView software.
- To run under Novell NetWare® Management System (NMS) software.

Pre-Installation Considerations

Introduction

Before starting the installation procedure, you need:

- The correct hardware.
- The latest firmware.
- The correct software.
- Network parameters (if the network is not already installed).
- A complete HUBwatch installation kit.

Hardware Requirements

The HUBwatch software should be able to accommodate any configuration that meets the hardware requirements in this section. For details about specific devices and software packages recommended for Microsoft Windows, refer to the Windows Version 3.1 or higher Application Reference List and Hardware Compatibility List.

- A 386 processor running at a minimum of 33 megahertz or a 486 processor running at a minimum of 25 megahertz.
- A minimum of 8 megabytes of random-access memory (RAM). Additional memory improves performance and is highly recommended for hubs with high port counts.
- A 3½-inch 1.44-megabyte diskette drive.
- A minimum of 8 megabytes of available disk space.
- A mouse that is compatible with Windows Version 3.1 or higher. A mouse is required for use with HUBwatch. If you do not use a mouse, then you will not have point-and-click control over network elements.
- A color VGA or SVGA monitor.

Optional Hardware: If you plan to use in-band communications, you need a network interface card (NIC) with an NDIS driver. You can use the Serial Line Internet Protocol (SLIP) for out-of-band communications, in which case you do not need a network card.

Firmware Requirements

Each of your hubs and modules needs the most recently released version of the firmware. See the HUBwatch release notes for the minimum revision software that HUBwatch supports.

Because Digital is continuously improving the quality of the DEChub product family, periodic releases of firmware will become available. To find information about the latest firmware releases:

- Contact your local Digital reseller or your local Digital sales office.
- Read the README file found in the /pub/DEC/hub900 directory at ftp.digital.com.

Firmware updates are customer installable. To register for automatic notification of new firmware releases, return the Business Reply Card supplied with this product, or send your name, title, and mailing address to dechub_notice@lkg.dec.com.

Software Requirements

You need the following software to install HUBwatch for Windows:

- MS-DOS® Version 6.0 or higher
- Microsoft Windows Version 3.1 or higher
- An NDIS driver for the network interface card (if you plan to use in-band communications)
- A working WINSOCK Version 1.1 compatible TCP/IP network stack (for example, PATHWORKS 5.x).

Network Parameters

When installing with the network for the first time you need to obtain information about the following network parameters:

Network Parameters

The name of your PC _____

The IP address of your PC _____

The IP address of the default gateway (a router or a brouter) _____

Your Local IP Domain Name _____

The IP address of the network name server _____

The network subnet mask _____

Your user name _____

Network Interface Card (NIC) type (see Note) _____

Note: If your NIC is not an EtherWorks 3, DEPCA, DEFEA, SMCMAC, 3c503, 3c503-B, 3c509, I82593, or Exp16, you also need to know the drive and path of the NIC driver. Refer to the list of network adapters in *Step 7: Specifying Network Configuration Parameters.*

Is the Distribution Kit Complete?

The HUBwatch installation kit should contain the following items:

- HUBwatch management station software on three 3½-inch 1.44-megabyte diskettes.
- HUBwatch online tutorial software on two 3½-inch 1.44-megabyte diskettes as follows:

  a. Tutorial for HUBwatch for DEChubs.

  b. Tutorial for GIGAswitch/FDDI.
- A READ_ME.TXT and READ_ME.PS file on disk 1. This file provides information about product features and may contain last-minute installation information. Please read this file before installing HUBwatch.
- *HUBwatch Installation and Configuration* book (this book).
- *HUBwatch for Windows Use* book.

Installing HUBwatch for Windows

About This Procedure

The steps described in this procedure assume you are installing HUBwatch, HUBloader, and NETrider Loader only, or HUBwatch, HUBloader, NETrider Loader, and the network (the first and second options on the Main menu). The steps for installing just the network are a subset of these steps. **If you have a TCP/IP network configured on your PC, choose install HUBwatch only as your install option.** You should use any existing TCP/IP stack before using a HUBwatch stack.

For PATHWORKS Users: Users of PATHWORKS Version 4.x with a DECnet only network will need to install HUBwatch, HUBloader, NETrider Loader, and the network. Choose NDIS network and SLIP when asked for the type of network to install. Appendix C has additional instructions about using HUBwatch with PATHWORKS.

Step 1: Starting the Procedure

Do the following to start the installation procedure.

Step	Action
1	Turn on your personal computer (PC) and run Windows.
2	Put the HUBwatch diskette 1 in drive A (or drive B, as appropriate).
3	Choose the Run option from the Program Manager's File menu.
4	Enter A:INSTALL in the Command Line field of the Run text box.
5	Click the OK button.
	Result: The HUBwatch installation Main menu appears. Follow the instructions on the screen to select an installation option.
	Stopping the procedure: To stop the procedure at any time, press Esc. You return to the procedure's Main menu.

Step 2: Selecting the Installation Option

Select one of the following installation options when the Main menu appears.

Option	Result
1. Install HUBwatch, HUBloader, and NETrider Loader only	Installs HUBwatch, HUBloader, and NETrider Loader and, if you want, automatically updates AUTOEXEC.BAT and installs the HUBwatch, HUBloader, and NETrider Loader icons. Sets up HP Open View and NMS, if present. If your PC does not have an IP network, you can install HUBwatch, HUBloader, and NETrider Loader, but you cannot run them. Use this option if you are upgrading your HUBwatch, HUBloader, and NETrider Loader software or if you already have a TCP/IP network configured. See *Step 9: Digital ManageWORKS Workgroup Administrator* in this chapter for more information.
2. Install HUBwatch, HUBloader, NETrider Loader, and network	Installs HUBwatch, HUBloader, and NETrider Loader and installs and configures the network. Sets up HP Open View and NMS, if present. If you want, this option will automatically update AUTOEXEC.BAT and install the HUBwatch, HUBloader, and NETrider Loader icons. Use this option if you do not have a TCP/IP network configured. See *Step 7: Specifying Network Configuration Parameters* and *Step 9: Digital ManageWORKS Workgroup Administrator* in this chapter for information.
3. Install and configure the network	Installs and configures an IP network on your PC. Use this option if you want to use the TCP/IP network stack that the HUBwatch distribution kit contains. See *Step 7: Specifying Network Configuration Parameters* in this chapter for information about network parameters.
4. Install HUBwatch, HUBloader, and NETrider Loader icons	Creates icons for starting HUBwatch, HUBloader, and NETrider Loader and allows you to place them in an existing Windows icon group or in their own group. The alternative to starting HUBwatch, HUBloader, or NETrider Loader with an icon is to run HUBWATCH.EXE , HUBload.exe or loader.exe from the File Manager or Program Manager.
5. Set path to User Data file	Modifies the AUTOEXEC.BAT file's SET HUBWATCH_LIBRARY command, which points to the directory for the file HW_AGENT.DAT containing agent information needed by HUBwatch (see *Step 5: Do You Want to Modify System Files?* in this chapter). The installation places this file in the \USERDATA subdirectory of the directory you select for HUBwatch. This menu choice allows different users to have their own versions of this file. HUBwatch edits the file, invisibly to the user, when you enter agent information into the HUBwatch Community Table window.
6. Set up for Digital ManageWORKS Workgroup Administrator	Installs the required files so you can launch HUBwatch from the Digital ManageWORKS Workgroup Administrator application. See *Step 9: Digital ManageWORKS Workgroup Administrator* for more information.
7. Set up for HP OpenView	Installs the required files so you can launch HUBwatch from the HP OpenView application.

Option	Result
8. Set up for Novell NMS	Installs the required files so you can launch HUBwatch from Novell NMS.
9. Set network configuration parameters	Allows you to modify your network configuration parameters. See *Step 7: Specifying Network Configuration Parameters* in this chapter for information about network parameters.
Exit	Exits from the installation.

Step 3: Specifying the Installation Files Location

If you selected either option 1 or option 2 from the list of options in Step 2, take the following steps to specify the drive and directory where you want the installation files to reside.

Step	Action
1	A window asks you to select an installation drive to receive the software and displays the available space on each fixed drive. Choose the drive where you want the files to reside.
	Result: A window asks you to choose an installation directory and displays the default directory C:\HUBWATCH. If you choose a nonexistent directory, the installation procedure creates it for you. The procedure also creates subdirectories under the main installation directory.
	For More Information: See Are the Files Where They Belong? in this chapter.
2	Choose the directory where you want to install HUBwatch, if different from the default.
	Result: The installation procedure copies the files to the directory.
	If you previously installed the HUBwatch IP network, several windows inform you that files already exist and prompt you if you want to replace them. Do not replace them at this time. You will have the opportunity to change them later in the installation procedure.
3	Choose the directory where you want to install HUBloader, if different from the default.

Step 4: Selecting an Icon Option

If you selected Options 1, 2, or 4 from the Main menu, choose one of the following when the Install Icon menu appears.

Choice	Result
Install icons in HUBwatch Windows Group	Creates the HUBwatch, HUBloader, and NETrider Loader icons and the HUBwatch application group. Places the icons in the group. When you open Windows, the HUBwatch group will be the top group.
Install icons in an existing group	Displays a list of the existing Windows application groups. When you select a group, the procedure creates the HUBwatch, HUBloader, and NETrider Loader icons and places them in the selected group.
Do not install icons	Unless an icon already exists for HUBwatch, you must start it by running HUBWATCH.EXE from the File Manager or Program Manager.

Step 5: Do You Want to Modify System Files?

After you select your icon option, a window informs you that changes may be necessary in your AUTOEXEC.BAT, CONFIG.SYS, and WIN.INI files.In particular, you should set the environment variable HUBWATCH_LIBRARY to the path of your user data file. Choose one of the following file-modification methods.

Choice	Result
Go ahead and modify	The procedure creates a backup copy of the file with the extension 0*x*, where *x* is an integer. Then the procedure asks you for the information it needs and edits the file.
Create example files	The procedure allows you to modify the file, but assists you by first creating sample files named AUTOEXEC.EXM and CONFIG.EXM. If you select this option, you must remember to make the modifications yourself when you exit from the installation procedure.
Bypass these changes	The procedure does not modify or create any files. Select this option *only* if you have previously installed HUBwatch, and you chose the same drive and directory this time.

Step 6: Selecting the Boot Drive and System File Path

A window asks you to indicate the drive from which the system boots. This is the drive whose root directory contains the AUTOEXEC.BAT and CONFIG.SYS files. Do the following.

Step	Action	Result
1	Enter the boot drive and click on OK.	Windows displays the drives where the AUTOEXEC.BAT and CONFIG.SYS (or AUTOEXEC.EXM and CONFIG.EXM) files are located.
2	Indicate the correct paths and click on OK.	The Set Network Configuration Parameters dialog box appears.

Step 7: Specifying Network Configuration Parameters

Do the following to provide the network parameters.

Step	Action
1	Before you start this procedure, get the network parameters from your system or network administrator. Supply the following information: • The name of your PC. • The IP address of your PC. • The IP address of the default gateway (a router or brouter). • Your local IP domain name. • The IP address of the network name server. • The network subnet mask. • Your user name. **Result:** A window asks you to specify the type of network with which you will be using HUBwatch.
2	Select one of the following and click on OK: • **NDIS network and SLIP** - Sets up NDIS and SLIP services • **SLIP network only** - Sets up SLIP services only **Result:** If you selected an NDIS network, a window asks you to specify the type of network card you will be using. Go to step 3 in this table. Otherwise go to step 8 of the installation procedure.

Step	Action
3	Choose one of the following: • **EtherWORKS 3 network card -** Places the driver EWRK3.DOS and the protocol file EWRK3.PRO in the \IPSTACK subdirectory of your HUBwatch directory. For ODI support, EWRK3.COM and EWRK3.NC (net.cfg) are placed in the \IPSTACK directory. • **Ethernet (DEPCA) network card -** Places the driver DEPCA.DOS and the protocol file DEPCA.PRO in the \IPSTACK subdirectory of your HUBwatch directory. For ODI support, DEPCA.COM and DEPCA.NC (net.cfg) are placed in the \IPSTACK directory. • **DEC FDDIcontroller/EISA (DEFEA) network card** - Places the driver DEFEA.DOS and the protocol file DEFEA.PRO in the \IPSTACK subdirectory of your HUBwatch directory. • **SMC EtherCard PLUS Elite16 (SMCMAC) network card** - Places the driver SMCMAC.DOS and the protocol file SMCMAC.PRO in the \IPSTACK subdirectory of your HUBwatch directory. • **3COM EtherLink II Adapter (3c503) network card** - Places the driver ELNKII.DOS and the protocol file ELNKII.PRO in the \IPSTACK subdirectory of your HUBwatch directory. For ODI support, ELNKII.COM and ELNKII.NC (net.cfg) are placed in the \IPSTACK directory. • **3COM EtherLink Plus Adapter (3c505-B) network card** - Places the driver ELNKPL.DOS and the protocol file ELNKPL.PRO in the \IPSTACK subdirectory of your HUBwatch directory. For ODI support, ELNKPL.COM and ELNKPL.NC (net.cfg) are placed in the \IPSTACK directory. • **3COM EtherLink III Adapter (3c509) network card** - Places the driver ELNK3.DOS and the protocol file ELNK3.PRO in the \IPSTACK subdirectory of your HUBwatch directory. • **Intel 82593 Demo Card (I82593) network card** - Places the driver I82593.DOS and the protocol file I82593.PRO in the \IPSTACK subdirectory of your HUBwatch directory. • **Intel Ether Express 16 Adapter (Exp16) network card** - Places the driver Exp16.DOS and the protocol file Exp16.PRO in the \IPSTACK subdirectory of your HUBwatch directory. • **Other -** Choose this option if you plan to use an "other" network card that is not in this list. This option asks you to supply the path to and the file name of the driver for your network interface card. Enter the information and click on OK. You need a properly defined PROTOCOL.INI file in the same directory as the network driver. You also need to know the network interface card type. See Appendix D for further instructions about using an "other" network card and editing the PROTOCOL.INI file. **Result:** A window informs you that you must run the STRTNDIS.BAT file (if you installed an NDIS network) or the STRTSLIP.BAT file (if you installed a SLIP network) to start your network. The window asks whether you want the command to run the file added to AUTOEXEC.BAT. **Important:** If you do not put the network startup command in AUTOEXEC.BAT, you will have to remember to execute the command before starting Windows.

Special File Editing Considerations: Depending on the options you choose, you may need to do some special editing.

1. If you earlier chose to update the AUTOEXEC.BAT file yourself, rather than have the procedure do it automatically, the command will be added to the file AUTOEXEC.EXM, and not to AUTOEXEC.BAT.
2. If you chose to install an NDIS network, you are allowed to run a SLIP network. However, the installation does not automatically add the STRTSLIP startup command to AUTOEXEC.BAT (or AUTOEXEC.EXM) unless you chose to install a SLIP network only.

Step 8: Specifying the Network Startup Command Location

Specify where you want to place the network startup command. Do the following.

Step	Action
1	Choose whether to put the network startup command in AUTOEXEC.BAT (or AUTOEXEC.EXM).
	Result: A list of the files modified by the installation procedure appears, including files that the procedure creates.
2	Click on OK to dismiss the list of files.
	Result: The Main menu appears.
3	If you want to have an HW_AGENT.DAT file different from other users, choose Set Path to User Data File.
	Result: A window asks for the path to the user data file.
4	Enter the path you want and click on OK.
	Result: The choices shown in step 5 of this installation procedure appear. Do steps 5 and 6. The Main menu appears.

Step 9: Digital ManageWORKS Workgroup Administrator Option

Important: Installation integration requires HUBwatch for Windows 4.0 and Digital ManageWORKS Workgroup Administrator 2.0. If you are using a TCP/IP stack from Digital, the HUBwatch IP stack version 4.0 or PATHWORKS 5.1 TCP/IP stack is required.

Do the following to install Digital ManageWORKS Workgroup Administrator.

Task 1 - Pre-installation requirements:

1. You must install Digital ManageWORKS Workgroup Administrator 2.0 prior to integrating HUBwatch for Windows 4.0.

   Note: If you **do not have an IP Stack installed** prior to installing Digital ManageWORKS Workgroup Administrator and plan to **use the HUBwatch V4.0 IP Stack**, you **MUST** perform the following steps. These steps would occur during the Digital ManageWORKS Workgroup Administrator installation of the Management Module Setup SNMP Management option in the TCP/IP Stack Selection Window:

   1. **Select** Digital PATHWORKS TCP/IP V5.1 (enabled by default)
   2. **Deselect** the Perform Compatibility Test On TCP/IP Stack check box by clicking with the mouse on the X in the box. The X in the box is removed. Continue with the Digital ManageWORKS Workgroup Administrator installation.

   ---

2. If you are using PATHWORKS 5.1 TCP/IP stack, you must install the stack before integrating HUBwatch for Windows 4.0.

   Note: If you are running Windows for Workgroups and PATHWORKS Version 5.1 TCP/IP stack, you must edit the C:\WINDOWS\PROTOCOL.INI files [DATALINKE] sections LG_BUFFERS=26 statement for Digital ManageWORKS Workgroup Administrator to work correctly.

   If you would like to use the HUBwatch IP 4.0 stack, the installation procedure installs the HUBwatch IP stack and Digital ManageWORKS Workgroup Administrator integration simultaneously.

3. Digital ManageWORKS Workgroup Administrator requires that you install SNMP Management to work with HUBwatch. To install Digital ManageWORKS Workgroup Administrator SNMP Management, do the following tasks:

    1. Select the Management Module Setup icon
    2. Select Install SNMP Management

    Refer to your Digital ManageWORKS Workgroup Administrator documentation for further information.

Task 2 - Installation:

Take the following steps to integrate with Digital ManageWORKS Workgroup Administrator.

Step	Action
1	Choose OK when the window asks if you want support for Digital ManageWORKS Workgroup Administrator integration. (The default is CANCEL. If you choose CANCEL, the installation terminates.)
2	The installation procedure searches all the devices for the location of the Digital ManageWORKS Workgroup Administrator installation directory. **Result:** An installation window displays the location of the HUBwatch installation directory. You must verify the location.
3	Once the installation directories of Digital ManageWORKS Workgroup Administrator are located and verified, the installation procedure modifies the appropriate Digital ManageWORKS Workgroup Administrator files to support the HUBwatch integration.
4	You are asked to verify if a PATHWORKS TCP/IP stack is being utilized. **Result:** • If you choose NO, the integration terminates with a message indicating HUBwatch Digital ManageWORKS Workgroup Administrator are integrated. • If you choose YES (default), the installation continues to start verifying PATHWORKS information.
5	The installation procedure searches the PATH and all devices for the location of the PATHWORKS installation directory. The location should be the \IPSTACK subdirectory if it is installed with the HUBwatch 4.0 IP stack. **Result:** You are requested to verify the location.
6	Once you have located and verified the installation directory of PATHWORKS, the installation modifies the appropriate PATHWORKS files and a message appears, indicating that HUBwatch and Digital ManageWORKS Workgroup Administrator are integrated.

Digital ManageWORKS Workgroup Administrator Modifications:

HUBwatch integration into Digital ManageWORKS Workgroup Administrator results in the following modifications to Digital ManageWORKS Workgroup Administrator.

The \MWORKS\DATABASE\SNMPOMM.INI file is modified in the [HUBWATCH] section with binary= statement to indicate the HUBwatch for Windows 4.0 installation directory.

PATHWORKS Modifications (including HUBwatch IP stack):

HUBwatch integration into Digital ManageWORKS Workgroup Administrator results in the following modifications to PATHWORKS.

> **Note:** The modification of these files and settings may affect other network applications. Modifying your PATHWORKS settings to work with Digital ManageWORKS Workgroup Administrator may affect other "network view type" of applications such as HP OpenView. Keep this in mind if you are using several types of these applications, or if you suddenly have problems with other applications.

Step	Modification
1	The \PW\TCPIP.INI or \HUBWATCH\IPSTACK\PWTCP.INI file is modified in the [TCPIP] section with the following statements: • TCPMaxSock=32 • UDPMaxSock=10 • UDPMaxInputBuf=10 A backup of the modified file is maintained with the *.BCK extension. **Note:** The installation modifies the first occurrence of these statements. Therefore, if you have statements embedded in comments, and the comments appear first, the comment is modified instead of the actual statement.

Step	Modification
2	The \PW\PROTOCOL.INI or \HUBWATCH\IPSTACK\PROTOCOL.INI file is modified in the [DATALINK] section with the following statement: LG_BUFFERS=26 A backup of the modified file is maintained with the *.BCK extension. **Note:** The installation modifies the first occurrence of these statements. Therefore, if you have this statement embedded in a comment, and the comment appears first, the comment is modified instead of the actual statement.
3	A new version of the following files is copied to the \PW or \HUBWATCH\IPSTACK directory: • DNR.EXE • WINSOCK.DLL
4	A new version of DECPW.386 is copied to the \WINDOWS\SYSTEM directory.
5	A backup of each modified file is maintained with the *.BCK extension. These files are **REQUIRED** to successfully use Digital ManageWORKS Workgroup Administrator and the PATHWORKS TCP/IP stack.

If the Name Server is not running or configured properly (that is, you are in an isolated LAN), you must add your PC IP address information to your local HOSTS. file. The ManageWORKS Workgroup Administrator Event Dispatcher requires this information.

Step 10: Exiting the Installation Procedure

From the Main menu choose Exit, and click on OK.

Result: One of the following occurs.

- If you installed a network, a message informs you to run the network startup file (STRTNDIS.BAT or STRTSLIP.BAT, depending on the type of network you chose) to connect your PC to the network. Click on OK to dismiss the message.
- If you chose to modify AUTOEXEC.BAT yourself, a message reminds you to do it before starting HUBwatch. You also need to reboot your computer for the modifications to take effect.

Installing the Online Tutorial

Introduction

The HUBwatch distribution kit includes two online tutorials. Using realistic simulations, they present highlights of the software features.

Steps: Installing

Use the following actions to install the online tutorial.

Step	Action
1	Put the HUBwatch tutorial diskette in drive A (or drive B, as appropriate).
2	Choose the Run option from the Program Manager's File menu.
3	Enter A:SETUP in the Command Line field of the Run text box.
	Result: A dialog box prompts you to enter a directory specification.
4	Press Return to accept the default directory, or enter a directory where you want to install the tutorial files.
	Result: The tutorial icon appears in the same program group as the HUBwatch icon. Click on the icon to start the tutorial.

Steps: Using

Do the following to move through the tutorial.

Click on This Button...	To...
→(right arrow)	Move to the next window
←(left arrow)	Move to the previous window
Jump	Either of the following: • Display a window with a list of topics. Click on the topic you want. • Set the speed of the mouse cursor.
Quit	Exit the tutorial.

Moving Text Boxes: Text boxes with instructional information appear in some tutorial windows. To move the text boxes, position the mouse cursor on the text box title bar, press the left mouse button and drag the text box to a new location.

Post-Installation Tasks

Introduction

After you complete the installation, confirm that the HUBwatch files are in the correct directory, and then start the application.

The following is an example of an AUTOEXEC.BAT running Windows for Workgroup and PATHWORKS Version 5.1. The bold text reflects entries specific for HUBwatch.

```
REM ****************** Start AUTOEXEC.BAT ************************
REM *** HUBLOADER and HUBWATCH ENVIRONMENT VARIABLES  ***
set HUBWATCH_HUBLOADER=C:\HUBLOAD
REM set HUBWATCH_SYSTEM=C:\HUBWATCH
set HUBWATCH_LIBRARY=C:\HUBWATCH\USERDATA
set WSAVERS=1.1

REM** Do not display AUTOEXEC.BAT commands as executed **
@ECHO OFF

REM ** Set DOS command line prompt to location **
PROMPT=$P$G

REM **Specify path for directories to be searched for executables
REM and order **
PATH C:\;C:\DOS;C:\WINDOWS;c:\pw;c:\mouse;

REM ** Load Disk Caching, perform double buffering (faster access to
REM hard disk) **
LH SMARTDRV /V /X 512 128

REM ** Load Mouse driver for DOS applications **
MOUSE CENHANCE

REM ** Load command line recall and default is INSERT mode **
LH DOSKEY/insert

REM ** Install file sharing and locking for disk and network drives
REM **
LH SHARE

REM ** Set TEMP to WINDOWS\TEMP directory environment variables **
SET TEMP=C:\WINDOWS\TEMP
SET TMP=C:\WINDOWS\TEMP

REM ** Load Microsoft Windows for Workgroup's network components
C:\WINDOWS\NET START
REM ** Start PATHWORKS TCP/IP stack and components **
if exist C:\PW\STARTNET.BAT call C:\PW\STARTNET.BAT
```

```
REM ** Start Windows for Workgroups **
WIN
REM ****************** End AUTOEXEC.BAT *************************
```

The following is an example of the modifications to the previous AUTOEXEC.BAT example if you are running Windows for Workgroup and HUBwatch Version 4.0 IP stack.

```
REM ** COMMENT OUT Microsoft Windows for Workgroup's network
REM components
REM C:\WINDOWS\NET START
REM ** Start HUBwatch V4.0 IP stack and components **
if exist C:\HUBWATCH\IPSTACK\STRTNDIS.BAT call
C:\HUBWATCH\IPSTACK\STRTNDIS.BAT
```

The following is an example of the modifications to the previous AUTOEXEC.BAT example if you are running Windows 3.1 and PATHWORKS Version 5.0 TCP/IP stack.

```
REM ** NOTE: No reference to NET START **
REM ** Start PATHWORKS TCP/IP stack and components **
if exist C:\PW\STARTNET.BAT call C:\PW\STARTNET.BAT
```

The following is an example of an CONFIG.SYS running Windows for Workgroup and PATHWORKS Version 5.1 or HUBwatch Version 4.0 IP stack:

```
REM ************** Start CONFIG.SYS *************************
REM ** Manage the use of extended memory **
DEVICE=C:\DOS\HIMEM.SYS

REM ** Simulate expanded memory and provide access to Upper Memory
REM area **
DEVICE=C:\DOS\EMM386.EXE

REM ** Memory reserved for transferring info to and from disks **
BUFFERS=30,0

REM ** Number of FILES open at one time **
FILES=40

REM ** Specifies MS-DOS will use HIGH memory and Upper Memory Block
REM **
DOS=HIGH,UMB

REM ** Number of valid drive letters **
LASTDRIVE=Z

REM ** Load MS-DOS version table in memory **
DEVICE=C:\DOS\SETVER.EXE

REM ** Checks for CNTRL/C and CNTRL/BREAK key combinations **
BREAK=ON

REM ** Memory reserved for processing h/w interrupts **
STACKS=9,256

REM ** Specifies and configures Command Interpreter **
SHELL=C:\COMMAND.COM C:\ /P /E:1024
```

```
REM ** Provide real-mode support for the Installable File System
REM manager which is **
REM ** responsible for passing data to the appropriate device **
DEVICE = C:\WINDOWS\IFSHLP.SYS

REM ***************** End CONFIG.SYS *************************
```

The following is an example of the modifications to the previous CONFIG.SYS example if you are running Windows 3.1 and PATHWORKS Version 5.0 TCP/IP stack or HUBwatch Version 4.0 IP stack.

```
REM ** NOTE: No reference to DEVICE = C:\WINDOWS\IFSHLP.SYS **
```

Are the Files Where They Belong?

The HUBwatch installation procedure creates a default directory structure. Check this to confirm that the HUBwatch files are in the correct directory.

The following table lists the directories and their contents unless you specified otherwise during the installation procedure.

This Directory...	Contains...
C:\HUBWATCH	HUBWATCH.EXE and other files used by HUBwatch, including the subdirectories \USERDATA, \IPSTACK, \HUBWMWRK, \HUBWOV, \HUBWNMS, \HUBLOAD, and \NETRIDER\LOAD.
C:\HUBWATCH\USERDATA	The user's Agent file, HW_AGENT.DAT, unless you have specified a different directory for this file.
C:\HUBWATCH\IPSTACK	The network service files, if you installed the HUBwatch network.
C:\HUBWATCH\HUBWMWRK	The Digital ManageWORKS Workgroup Administrator files for HUBwatch integration and PATHWORKS support.
C:\HUBWATCH\HUBWOV	The HP Openview files for HUBwatch integration.
C:\HUBWATCH\HUBWNMS	The Novell NMS files for HUBwatch integration.
C:\HUBLOAD	The HUBloader files.
C:\NETRIDER\LOAD	The NETrider Loader files.

Note: See the table in the section Files Changed and Created During Installation later in this chapter for a list of changes to the AUTOEXEC.BAT and CONFIG.SYS files during the installation process.

Steps Prior to Starting HUBwatch for Windows

Do the following before you start HUBwatch.

Step	Action
1	Start the network. If you installed the network using the HUBwatch installation procedure, do one of the following before starting Windows: • For NDIS networks, type: *hubwatch-drive*:*hubwatch-path*\IPSTACK\STRTNDIS **Example:** `c:\nets\hubwatch\ipstack\strtndis`. • For SLIP networks, see Appendix B. • For PATHWORKS networks, see Appendix C. • If managing DECbrouters 90T1, 90T2, or 90T2A on a PATHWORKS network, see Appendix C before starting the application.

Starting HUBwatch with the Specify Agent Dialog Box

Do the following to start HUBwatch with the Specify Agent dialog box.

Step	Action
1	Start HUBwatch in one of the following ways: • From the application group where the HUBwatch icon resides, double click on the HUBwatch icon. • From the File Manager, double click on HUBWATCH.EXE. **Result:** The Specify Agent dialog box presents a list of agents. (This list is in the HW_AGENT.DAT file.) When you first run HUBwatch, the list is empty. In that case, get the information from your network administrator and enter it manually. The Specify Agent dialog box requests the following information about the agent you want: • *IP Address* - an integer in the format *d.d.d.d* where *d* is a decimal number less than 256. • *Community*-The community name used in requests to the agent. The default is public. • *Timeout* - The number of seconds that the PC waits for a response after sending a request to the agent. The default is 5 seconds. • *Retries* - The number of times that the PC resends a request to the agent after a timeout. The default is 1. **Required Information:** Only the IP address is required when starting HUBwatch. All other information is optional unless the device's community name is not public.
2	Click on the name of the agent you are invoking, or fill the IP address in manually, together with any other information you want to supply. Click on OK, or double click on the entry itself. **Result:** The information is recorded in the Specify Agent dialog box. Next, a copyright message appears. After a short pause, the Hub Front Panel window opens. If you have entered incorrect information, an error message appears. Click OK to dismiss the message, and try again. The Hub Front Panel window differs, depending on whether you started HUBwatch with the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, or a standalone module. The *HUBwatch for Windows Use* book has pictures of the Hub Front Panel windows that appear for the DEChub 900MS and the DECagent 90.

Starting HUBwatch with Command Line Parameters

Do the following to start HUBwatch using command line parameters.

Step	Action
1	From the Program Manager menu or the File Manager menu, choose Run. **Result:** A text box asks you to enter a command.
2	Enter the following command: *drive:path*\HUBWATCH -x *ip-address* -a *agent-name* -c *community* -t *n* -r *n* **Command Variables:** The command variables are: • *drive* - the drive where HUBWATCH.EXE resides. If the current drive is the correct drive, you do not need to enter the drive. • *path* - the location of HUBWATCH.EXE. If the current directory is the correct directory, you do not need to enter the path. • -x *ip-address* - an integer in the format *d.d.d.d*, where *d* is a decimal number less than 256. The IP address is required the first time you start HUBwatch. Once you add entries for the agents you want to use to the Agent List window (see *SNMP Agents* in Chapter 4), you can enter this command with an agent's name and no IP address. • -a *agent-name* - the name assigned to the agent module (for example, agent1). You need not include the agent name if you include its IP address. • -c *community* - the community name used in requests to the agent. The default is public. • -t *n* - the number of seconds that the PC waits for a response after sending a request to the agent. The default is five seconds. • -r *n* - the number of times that the PC resends a request to the agent after a timeout. The default is 1. **Required Information:** Only the drive, path, and IP address or agent name are required parameters. **Result:** The Hub Front Panel window appears. The Hub Front Panel window differs, depending on whether you started HUBwatch with the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, or a standalone module. The *HUBwatch for Windows Use* book has pictures of the Hub Front Panel windows that appear for the DEChub 900MS and the DECagent 90.

Files Changed and Created During Installation

Introduction

During installation, HUBwatch changes some of your system files if you select that option. This section lists the commands added to the system files.

Files Changed

The installation procedure changes the following files.

In This File...	HUBwatch Makes This Change...
AUTOEXEC. BAT	Sets the following environment variables. SET HUBWATCH_HUBLOADER=C:\HUBLOAD REM SET HUBWATCH_SYSTEM=C:\HUBWATCH SET HUBWATCH_LIBRARY=C:\HUBWATCH\USERDATA SET WSAVERS=1.1
CONFIG.SYS	Removes packet driver information if you previously used HUBwatch for Windows Version 1.1
SYSTEM.INI	Adds network driver information if you chose to install HUBwatch and the network. Adds to the end of the `network=` line as follows: `network= ...,DECpw.386`
OVWIN.INI (For HP OpenView only)	HUBWOV=C:\HUBWATCH\HUBWOV\HUBWOV.EXE **New File Created:** The installation procedure also creates the HUBWOV.INI file in a \HUBWATCH\HUBWOV subdirectory. This file specifies the location of the HUBwatch icon files.
WIN.INI	• Adds the path for the HUBWATCH.EXE file for use with HP OpenView and Novell NMS. • Adds the path for the HUBLOAD.EXE file for use with HUBloader.

Files Provided

The installation procedure provides the following files.

This File...	Does This..
PWTCP.INI	Sets up the system's IP address and related information if you chose to install the HUBwatch network stack.
STRTNDIS.BAT	Starts the NDIS network.
STRTSLIP.BAT	Starts the SLIP network.
STOPNET.BAT	Stops the network.

2

HUBwatch for OpenVMS Installation

Overview

Introduction

This chapter describes how to install the HUBwatch for OpenVMS software using the VMSINSTAL procedure.

In This Chapter

The chapter includes the following topics:

- Pre-installation requirements.
- Pre-installation tasks.
- VMSINSTAL overview.
- Installing HUBwatch for OpenVMS.
- Installation error messages.
- Post-installation tasks.
- Starting HUBwatch for OpenVMS as a standalone application.

HUBwatch Software References

In this book, the term "HUBwatch" refers to the HUBwatch for Windows, HUBwatch for OpenVMS and HUBwatch for DEC OSF/1 AXP software.

Valid Configurations

You can install the HUBwatch software in the following configurations.

- To run as a standalone application.
- To run HUBwatch as an application under POLYCENTER™ or DECmcc™ Version 1.2 network management software. (Unless otherwise noted, further references to POLYCENTER also apply to DECmcc Version 1.2.)

Pre-Installation Requirements

Installation Time

On OpenVMS VAX™ systems, the HUBwatch software installation procedure takes approximately 10 minutes. If you are running the DEC™ TCP/IP Services for OpenVMS VAX, you may need more time

DEC TCP/IP Services for OpenVMS Information: See Pre-Installation Tasks in this chapter for information about using it with HUBwatch.

Hardware Requirements

For a list of VAXstations that are compatible with HUBwatch, refer to the HUBwatch for OpenVMS VAX Software Product Description (SPD 45.74.00-XX).

Software Requirements

The system must have the following software installed and operating:

- OpenVMS VAX operating system Version 5.4 or later.
- DECwindows™ Motif® Version 1.1 or later.
- OpenVMS DECwindows Motif Bookreader™ Version 4.0 or later.
- DEC TCP/IP Services for OpenVMS VAX Version 2.0 or later, or TGV MultiNet™ Version 3.2 or later.

  To verify that you have the DEC TCP/IP Services for OpenVMS software, type UCX at the system prompt. The UCX prompt appears (`UCX>`). Press Ctrl/Z to return to the system prompt.

Verifying Product Version Numbers: Do the following to verify your product version numbers.

For This Product...	Enter This Command...
OpenVMS VAX software	$ **SHOW SYSTEM** **Result:** The version appears in the first line of output.
DECwindows Motif	From the Session Manager window, click on the Help menu and choose On Version.
OpenVMS DECwindows Motif Bookreader™	From the Help menu, select Product Information.
DEC TCP/IP Services for OpenVMS	$ **UCX** UCX> **SHOW VERSION**
TGV MultiNet	$ **MULTINET SHOW/VERSION**

Optional Software

To use HUBwatch with the POLYCENTER network management platform, you must have one of the following products installed:

- POLYCENTER Framework Version 1.3 or later.
- POLYCENTER Network Manager 200 Version 1.3.
- POLYCENTER Network Manager 400 Version 2.3.
- DECmcc Director Version 1.2.
- DECmcc Basic Management System Version 1.2.
- DECmcc Enterprise Management Station Version 2.2.

Firmware Requirements

Each of your hubs and modules needs the most recently released version of the firmware. See the HUBwatch release notes for the minimum revision firmware that HUBwatch supports.

Because Digital is continuously improving the quality of the DEChub product family, periodic releases of firmware will become available. To find information about the latest firmware releases:

- Contact your local Digital reseller or your local Digital sales office.
- Read the README file found in the /pub/DEC/hub900 directory at ftp.digital.com.

Firmware updates are customer installable. To register for automatic notification of new firmware releases, return the Business Reply Card supplied with this product, or send your name, title, and mailing address to dechub_notice@lkg.dec.com.

Memory Requirements

See the HUBwatch Software Product Description (SPD) for the recommended minimum memory requirements for HUBwatch. See the HUBwatch release notes for virtual memory requirements.

Do the following to check available memory, global sections, and global pages.

To Check...	Enter This Command...
System memory	$ **SHOW MEM**
Global sections	$ **WRITE SYS$OUTPUT F$GETSYI ("FREE_GBLSECTS")**
Global pages	$ **WRITE SYS$OUTPUT F$GETSYI ("FREE_GBLPAGES")**

Disk Space Requirements

See the HUBwatch release notes for the recommended minimum disk space for HUBwatch. Make sure that you have enough free blocks on the system disk. Otherwise, the installation fails.

Finding Free Block Amount: To find out how many free blocks exist on the system disk, enter:

```
$ SHOW DEVICE SYS$SYSDEVICE:
```

If the number of required blocks exceeds the number of free blocks, clear space on the system disk.

Account Privileges and Quotas

See the HUBwatch release notes for the recommended process quotas and SYSGEN parameter values. You need system privileges for the account from which you plan to install HUBwatch to change system parameters.

Do the following to view and change these values.

To See Current...	Enter These Commands...	And Change Values with These Commands...
System privileges	$ **SHOW PROCESS /PRIVILEGES**	$ **SET PROCESS/PRIV=ALL**
Process quotas	$ **SET DEFAULT SYS$SYSTEM** $ **RUN SYS$SYSTEM:AUTHORIZE** UAF> **SHOW**	If you do not have the required quotas, enter: UAF> **MODIFY *user-name* -** _UAF> ***/quota-name=value*** Press Ctrl/Z to return to the system prompt. You must log out and log in again for the new values to take effect.
SYSGEN parameters	$ **SET DEFAULT SYS$SYSTEM** $ **RUN SYS$SYSTEM:SYSGEN** SYSGEN> **SHOW /ALL**	SYSGEN> **SET *param-name* -** _SYSGEN> ***value*** SYSGEN> **WRITE CURRENT** Press Ctrl/Z to return to the system prompt. You must reboot the system for the new values to take effect.

Pre-Installation Tasks

Introduction

This section describes the tasks you perform before you start the installation procedure.

Read the Release Notes

A number of installation requirements will not be known exactly until after this book is printed. The HUBwatch release notes list those requirements. Do not install HUBwatch unless your system satisfies those requirements. Step 3 in Installing HUBwatch for OpenVMS explains how to install and print the release notes. Be sure to read them before completing the HUBwatch installation.

Requirements in Release Notes: The installation requirements listed in the release notes include minimum values for the following:

- Disk space.
- Process quotas.
- SYSGEN parameters.
- Virtual memory.

For POLYCENTER Users: If you plan to run HUBwatch as an add-on application to POLYCENTER, you must use the minimum values required for POLYCENTER if they are higher than those listed in the HUBwatch Release Notes. Refer to the POLYCENTER documentation. (Unless otherwise noted, further references to POLYCENTER also apply to DECmcc.)

Is the Distribution Kit Complete?

The HUBwatch installation kit should contain the following items:

- One TK50 tape cartridge labeled HUBWAT.
- *HUBwatch Installation and Configuration* book (this book).
- *HUBwatch Use* book.

If any item is missing, contact your local Digital representative.

Back Up the System Disk

Before starting the installation procedure, back up the disk onto which you will install the HUBwatch software. Use the following command to back up the disk.

```
$ BACKUP/IMAGE/VERIFY/LOG SYS$SYSDEVICE:[*...]*.*;* -
_$ backup-device:SYSTEM.SAV /SAVE
```

Command Variable: The *backup-device* variable is the device to which you are copying the HUBwatch files.

Install the HUBwatch License

You cannot use HUBwatch software unless the HUBwatch license is installed. To check for the HUBwatch license, type:

```
$ SHOW LIC HUBWATCH
```

Installing the License: If the license is installed, see *Installing HUBwatch* in this chapter. Do the following if the license is not installed.

Step	Action
1	Obtain the HUBwatch Product Authorization Key (PAK) delivered with the software distribution kit.
2	Log in to the system account.
3	Enter the following command to start the OpenVMS VAX license command procedure: `$ @SYS$UPDATE:VMSLICENSE.COM`
4	In response to the prompts, enter the information from the PAK.

Set Up DEC TCP/IP Services for OpenVMS VAX

If you are running DEC TCP/IP Services for OpenVMS VAX, enter the following OpenVMS commands before installing HUBwatch.

```
$ create sys$sysdevice:[ucx$snmp]ucx$snmp.log
<Ctrl/Z>
$ set file /version_limit=5 sys$sysdevice:[ucx$snmp]ucx$snmp.log
$ purge sys$sysdevice:[ucx$snmp]*.log
```

Purge Time: If you have a large number of log files, the purge command may take up to an hour to execute.

VMSINSTAL Overview

Introduction

VMSINSTAL is an interactive procedure that displays a series of questions. You use the VMSINSTAL command procedure to install the HUBwatch software on an OpenVMS VAX system. This procedure copies files from the distribution media to the installation disk.

Additional Information: See the OpenVMS/VAX documentation for a complete description of VMSINSTAL. See to the HUBwatch release notes for a list of files and logical names that the HUBwatch installation procedure adds or modifies.

VMSINSTAL Guidelines

Basic guidelines for using VMSINSTAL are as follows:

- After each question, the default response, if there is one, appears in brackets ([ ]). At the end of each question, either a colon (:) or a question mark (?) appears. Respond in one of the following ways.
  - To get help after a question, type a question mark (?). After the help display, the same question reappears.
  - To select the default response, press Return.
  - To enter information, type it immediately after the colon or question mark, and press Return.

  You can type Y for Yes and N for No.
- To abort the installation procedure at any time, press Ctrl/Y.

  The installation procedure deletes all files that it has created up to that point and returns to the Digital Command Language (DCL) level. Invoke VMSINSTAL again to restart the installation procedure.

Installing HUBwatch for OpenVMS

Step 1: Starting the Procedure

Do the following to start the HUBwatch installation procedure.

Step	Action
1	Log in to the system account. **Result:** The system prompt appears.
2	Mount the HUBwatch distribution tape on the tape drive. For instructions about mounting and removing a TK50 tape cartridge, see the system documentation.

3	Start VMSINSTAL with the following command.
	`$ @SYS$UPDATE:VMSINSTAL HUBWATCH device-name: OPTIONS N`
	Command Variables: The VMSINSTAL command variables are as follows.
	• HUBWATCH names the save set on the distribution media.
	• *device-name*: names the device where the distribution media is mounted (for example, MKB300:).
	• OPTIONS N provides the option of printing the on-line HUBwatch release notes. If you are reinstalling the same version of HUBwatch software and you have already read the release notes, you can omit OPTIONS N.
	Result: The procedure displays the following.
	`VAX/VMS Software Product Installation Procedure Version n.n.`
	`It is dd-mmm-yyyy at hh:mm.`
	`Enter a question mark (?) at any time for help.`
	The procedure displays a message like the following to tell you what processes are active on your system.
	`%VMSINSTAL-W-ACTIVE, The following processes are still active:`
	`DAVID`
	`DECW$TE_0118`
	`DINANT`
	`DECW$BANNER`
	`DECW$MWM`
	`NML_8299`
	`* Do you want to continue anyway [NO]?`

4	Type Yes and press Return. **Result:** The procedure continues; go to *Step 2: Confirming System Disk Backup.*

Step 2 - Confirming System Disk Backup

The procedure displays the following message:

```
* Are you satisfied with the backup of your system disk [YES]?
```

Do one of the following:

- If you are not satisfied with the backup, type N and press Return to terminate the installation procedure. Then back up your system disk and reenter the VMSINSTAL command:

  $ **@SYS$UPDATE:VMSINSTAL HUBWATCH *device-name*: OPTIONS**

  If you stop the procedure to back up the system disk and then restart the procedure, the procedure displays the introductory prompts.

- If your system disk is fully backed up, press Return to answer Yes. The procedure continues; go to *Step 3: Reading the Release Notes*.

Step 3: Reading the Release Notes

After you confirm the system backup status, the procedure displays the following messages:

```
The following products will be processed:
HUBWATCH Version 4.0
                 Beginning installation of HUBWATCH Version 4.0 at
09:15
%VMSINSTAL-I-RESTORE, Restoring product saveset A. . .
```

If you included OPTIONS N in the VMSINSTAL command, the procedure displays a list of options.

```
Release notes included with this kit are always copied to SYS$HELP.
Additional Release Notes Options:
 1. Display release notes
 2. Print release notes
 3. Both 1 and 2
 4. None of the above
* Select option [2]:
* Queue name [SYS$PRINT]:
```

Do the following to select a release note option.

Step	Action
1	Select the release note option you want. **Result:** The procedure displays the following message: `* Do you want to continue the installation [NO]?`

2	Type Yes and press Return.
	Result: The following messages appear:
	`%VMSINSTAL I - RELMOVED, The product's release notes have been moved to SYS$HELP`
	`------------------------------------------------------------------`
	`HUBwatch for OpenVMS for VAX - Version 4.0`
	`VMSINSTAL installation procedure`
	`Copyright © 1995  by`
	`DIGITAL EQUIPMENT CORPORATION, Littleton Mass, USA`
	`All rights reserved`
	`------------------------------------------------------------------`
	`Product:  HUBWATCH`
	`Producer:  DEC`
	`Version  4.0`
	`Release Date:`
	`* Does this product have an authorization key  registered and loaded?`

3	Type Yes and press Return. **Result:** The procedure continues; go to *Step 4: Do You Want to Run the IVP?*.

Step 4 : Do You Want To Run the IVP?

The installation verification procedure (IVP) verifies that all files from the distribution kit are in the proper directories, that the release notes are in the SYS$HELP directory, and that the HUBwatch software can be started.

After you select the release notes option, the procedure displays the following prompt:

```
* Do you want to run the IVP after the installation [YES]
```

Type Yes and press Return if you want the IVP to run automatically. The installation procedure will start the IVP after all other tasks are complete (see *Step 8: Provide SNMP Information*). If you prefer to start the IVP manually, see *Post-Installation Tasks* in this chapter.

Step 5: Purging Files

When the procedure continues, it displays the following prompt:

```
* Do you want to purge files replaced by this installation [YES]?
```

Press Return to answer Yes. The procedure continues with HUBwatch-specific questions; go to *Step 6: Answering HUBwatch-Specific Questions.*

Step 6 : Answering HUBwatch-Specific Questions

The procedure displays the following messages:

```
The logical name HUBWATCH$LIBRARY should be defined as the directory
which contains or which will contain the HUBwatch agents file and the
HUBwatch events agents file.

SYS$STARTUP:HUBWATCH$STARTUP.COM will define the system-wide logical
name HUBWATCH$LIBRARY as SYS$LOGIN.  To assign a different system-wide
translation for HUBWATCH$LIBRARY, enter it below.  You may also edit
SYS$STARTUP:HUBWATCH$STARTUP.COM at a later time.

* System-wide translation for HUBWATCH$LIBRARY: [SYS$LOGIN]:
```

Do the following to answer the installation questions.

Step	Action

1	Do one of the following:
	• Press Return to accept the default translation for HUBWATCH$LIBRARY.
	• Enter a different translation and press Return.
	Result: The procedure displays the following:
	`The logical name HUBWATCH$ALARM_FILES may be defined as the directory which will be used for HUBwatch event polling and alarm logfiles.`
	`SYS$STARTUP:HUBWATCH$STARTUP.COM will define the system-wide logical name HUBWATCH$ALARM_FILES as SYS$SYSTEM. To assign a different system-wide translation for HUBWATCH$ALARM_FILES enter it below. You may also edit SYS$STARTUP:HUBWATCH$STARTUP.COM at a later time.`
	`* System-wide translation for HUBWATCH$ALARM_FILES:  [SYS$SYSTEM]:`

Step	Action

2	Do one of the following:
	• Press Return to accept the default translation for HUBWATCH$ALARM_FILES.
	• Enter a different translation and press Return.
	Result: The procedure then displays the following:
	`The HUBwatch poller is a background process which queries a list of DEChubs and DEChub modules for selected MIB information. This information is then used by the HUBwatch alarms component The poller may be started manually at any time by using the`
	`WATCH /POLLER START [/FILE=<alarm_agents_file>]`
	`DCL command, or it may be started automatically in the HUBwatch system startup procedure SYS$STARTUP:HUBWATCH$STARTUP.COM.`
	`* Automatically start the HUBwatch poller? (YES|NO) [YES]`

3	Do one of the following: • Press Return if you want to start the poller automatically when you start HUBwatch. • Enter No and press Return if you do not want the poller started automatically. If you enter No, you can start the poller later by entering the command `$ WATCH /POLLER START [/FILE=alarm-agents-file]` **Result:** If you chose to start the poller automatically, the procedure displays the following. `The HUBwatch poller reads agent information from a file. If the poller is interactively invoked through the WATCH/POLLER START command, and an alarmed agents file is not specified, then it will use HUBWATCH$LIBRARY:HUBWATCH_ALARMED_AGENTS.DAT.When the poller is invoked through HUBWATCH$STARTUP.COM, it uses the SYS$MANAGER directory.` `To use a different filename, enter it below. You may also edit SYS$STARTUP:HUBWATCH$STARTUP.COM at a later time.` `* HUBwatch poller agents file:[SYS$MANAGER:HUBWATCH_ALARMED_AGENTS.DAT]`

Step	Action
4	Do one of the following: • Press Return to accept the default file name. • Enter a different file name and press Return. **Result:** If you are running a version of OpenVMS prior to Version 6.0, the procedure displays a message similar to the following: `ATTENTION SYSTEM MANAGER:` `After HUBwatch installation completes, you must add the following line to SYS$MANAGER:SYSTARTUP_V5.COM` `$ @SYS$STARTUP:HUBWATCH$STARTUP.COM` If you are running OpenVMS Version 6.0 or later, the procedure displays a message similar to the following: `ATTENTION SYSTEM MANAGER:` `After HUBwatch installation completes, you must add the following line to SYS$MANAGER:SYSTARTUP_VMS.COM` `$ @SYS$STARTUP:HUBWATCH$STARTUP.COM` The procedure then displays a message similar to the following and pauses: `ATTENTION HUBwatch USERS:` `If HUBwatch Version 2.0 or earlier is in use at this site, users should make a backup copy of their agents file before running HUBwatch Version 4.0. HUBwatch Version 4.0 will automatically convert agents files into a new format. However, this new format is not compatible with pre-Version 3.0 versions of HUBwatch.` `* Press <Return> to continue.`
5	Press Return. **Result:** The procedure continues; go to *Step 7: Reading Installation Messages*.

Step 7: Reading Installation Messages

The procedure then displays the following informational messages:

```
%HUBWATCH-I-NOMOREQUES, No more questions will be asked
during the installation phase.
%HUBWATCH-I-COMPTIME, HUBwatch installation will typically
complete in about 5 minutes.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...

%HUBWATCH-I-FILES, Copying image file...

%HUBWATCH-I-FILES, Copying message, option files..., and data
files...

%HUBWATCH-I-FILES, Copying command procedures

%HUBWATCH-I-FILES, Copying help files and documentation

%HUBWATCH-I-FILES, Creating customized HUBwatch startup
procedure...

questionnaire...

%VMSINSTAL-I-RESTORE, Restoring product save set C

%HUBWATCH-I-FILES, Copying DECwindows UID files...

        If any users on the system are using HELP right now,
        the installation will be delayed for up to 5 minutes.
  ...  HUBwatch HELP installed.
```

If the POLYCENTER or DECmcc network management application is installed on your system, the procedure displays the following messages:

```
To launch HUBwatch from DECmcc version 1.2, all DECmcc users
  need to modify their own MCC_RESOURCE.DAT file according
  to the instructions in MCC_SYSTEM:MCC_HUBWATCH.COM.


DECmcc version 1.3 users will be able to launch HUBwatch
  directly from DECmcc's Applications menu with no other
  changes necessary.
```

The procedure then displays this message:

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...

------------------------------------------------------
HUBwatch for OpenVMS for VAX, Version 4.0
Installation verification procedure.


Copyright © 1995  by
DIGITAL EQUIPMENT CORPORATION, Littleton, Mass, USA
All rights reserved.
------------------------------------------------------
```

Step 8: Providing SNMP Information

The procedure then prompts you to provide SNMP information. The procedure displays the following message:

```
Enter a question mark (?) for help on any of the following
questions
or type <Ctrl/Z> to exit the verification procedure at any time.
*  What is the IP address of the SNMP agent?
```

Do the following to supply the SNMP information.

Step	Action
1	Enter the IP address in the format *d.d.d.d*, where *d* is a decimal number less than 256. Then press Return. **Result:** The procedure displays the following message. `* What is the r/w Community Name for the agent [public]?`
2	Press Return to use the default name of public or enter the community name of the agent and press Return. The community name is case sensitive. **Result:** The procedure continues with the IVP if you specified this in step 4 of the installation procedure. Otherwise, the installation procedure completes.

Step 9: Running the IVP

When the procedure starts the IVP, it displays the following messages:

```
Device:    WSA1:  [exec]

Node:      0

Transport: LOCAL

Server:    0

Screen:    0

HUBwatch will now be run on the above display.
When the front-panel view for your hub comes up, move the
   pointer to the `File` menu, and press and hold mouse
   button 1.  Slide the pointer down to `Exit` in the menu
   which will appear below File, and release mouse button 1.


If HUBwatch fails to come up, check that the display
   information shown above is correct...

* Hit the <Return> key to start HUBwatch or <Ctrl/z> to abort:
```

Do the following to run the IVP.

Step	Action

1	Press Return.
	Result: The procedure continues by starting HUBwatch. HUBwatch begins by displaying hub management and configuration information.
	Example:
	`WATCH /AGENT 00.00.00.00 -`
	`/COMMUNITY="public" -`
	`/TIMEOUT=5 /RETRIES=2 /VIEW=PHYSICAL`
	`(I) HUBWATCH$LIBRARY = SYS$LOGIN`
	Result: The procedure displays the following.
	`HUBwatch for OpenVMS Revision 4.0`
	If you have not previously installed and used HUBwatch, you receive warning messages like the following (which you can ignore):
	`(W) Current agent not in the agent table`
	`(W) Unresolved agent node IP name`
	`(W) Agent type DETMM found for 00.00.00.00`
	As part of the IVP, HUBwatch software displays the Hub Front Panel window. The Hub Front Panel window differs, depending on whether you started HUBwatch with the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, a GIGAswitch, or a standalone module. The *HUBwatch Use* book has pictures of the Hub Front Panel windows that appear for the DEChub 900MS and the DECagent 90.

2	Exit the Hub Front Panel window. Click on the File menu and then click on Exit.
	Result: The procedure displays the following.
	`The HUBwatch events viewer will now be verified.`
	`When the HUBwatch viewer window appears on the display, move`
	`the pointer to the `File` menu, and press and hold mouse button 1.`
	`Slide the pointer down to `Exit` in the menu which will appear`
	`below File, and release mouse button 1.`
	`*  Hit the <Return> key to start the events viewer, or <ctrl/z> to`
	`abort:`
	`$  WATCH /VIEWER`

3	Press Return to verify the events viewer. **Result:** The HUBwatch software displays the Events Viewer window.

Step	Action

4	Exit the Events Viewer window. Click on the File menu and then click on Exit.
	Result: The procedure completes and displays the following messages.
	`Exiting HUBwatch`
	`HUBwatch Version 4.0 Installation verification complete.`
	`Installation of HUBWATCH V4.0 completed at 09:58`
	`VMSINSTAL procedure done at 09:58`

Installation Error Messages

Introduction

This section lists error messages specific to HUBwatch that you may receive while installing the application. Each message in this section is followed by an explanation and a recommended user action.

HUBWATCH-E-BADVMSVER

Message Text: `HUBWATCH-E-BADVMSVER, This kit requires version 5.4 or later of OpenVMS VAX.`

Explanation: Your version of OpenVMS VAX is too low.

User Action: Install OpenVMS VAX Version 5.4 or later before installing HUBwatch.

HUBWATCH-E-INSGBLPGS

Message Text: `HUBWATCH-E-INSGBLPGS, Insufficient global pages. HUBwatch needs at least` *`nnn`* `free global pages.`

`HUBWATCH-I-CURGBLPGS, Only` *`nn`* `global pages are available.`

Explanation: You do not have the minimum required global pages as specified in the release notes for the HUBwatch installation.

User Action: Increase the SYSGEN GBLPAGES parameter and reboot the system before installing HUBwatch. Increase the GBLPAGES by at least the current value plus the number listed in the release notes.

HUBWATCH-E-INSGBLSCT

Message Text:: `HUBWATCH-E-INSGBLSCT, Insufficient global sections.  HUBwatch needs at least` *`nn`* `free global sections.`

`HUBWATCH-I-CURGBLSCT, Only` *`nn`* `global sections are available.`

Explanation: You do not have sufficient available global sections to install HUBwatch.

User Action: Increase the SYSGEN GBLSECTIONS parameter to at least the number listed in the release notes, and reboot the system before you install HUBwatch.

HUBWATCH-E-INSSYSSPC

Message Text: `HUBWATCH-E-INSSYSSPC, Insufficient space on system disk to install HUBwatch.`

`HUBWATCH-I-TOTSYSSPC, nnn,000 blocks are needed.`

Explanation: You do not have sufficient free blocks on the system disk to install HUBwatch.

User Action: Clear enough space on the system disk before you install HUBwatch (see the release notes for disk requirements).

HUBWATCH-E-UCXNOTFOUND

Message Text: `UCX$IPC_SHR.EXE network software not found on system.`

`HUBWATCH-I-UCXREQ, Either DEC TCP/IP Services for OpenVMS (UCX) or TGV MultiNet is prerequisite software for HUBwatch.`

Explanation: Prerequisite software, DEC TCP/IP Services for OpenVMS VAX, is not installed on the system.

User Action: Install DEC TCP/IP Services for OpenVMS VAX before you install HUBwatch (see *Software Requirements* in Chapter 2).

HUBWATCH-W-ERRMCC

Message Text: `HUBWATCH-W-ERRMCC, Error copying DECmcc launch files to MCC_COMMON:`

Explanation: HUBwatch detected that POLYCENTER or DECmcc was installed on the system, but it could not copy the HUBwatch launch files (MCC_HUBWATCH.COM and MCC_APPL_HUBWATCH.DEF) to the MCC_COMMON directory. Instead, HUBwatch copied those files to the SYS$LIBRARY: directory.

User Action: At a later time, copy those files to the MCC_COMMON directory.

HUBWATCH-W-HELPINUSE

Message Text: HUBWATCH-W-HELPINUSE, System HELP library in use. HUBwatch help not installed.

Explanation: An individual is using OpenVMS Help; therefore, the installation procedure cannot add HUBwatch Help to the OpenVMS Help library at this time.

User Action: Add help for the HUBwatch startup command, WATCH/AGENT, at a later time. Use the following command:

```
$ LIBRARY /REPLACE /HELP SYS$HELP:HELPLIB SYS$HELP:HUBWATCH.HLP
```

Post-Installation Tasks

Introduction

This section describes post-installation procedures.

About the IVP

If you did not select to run the installation verification procedure (IVP) when installing HUBwatch, you must run it before using HUBwatch to verify that the software is ready. You can also run the IVP after a system failure to ensure that HUBwatch is still ready.

IVP Failure: If the IVP fails, run it again. If it still fails, contact your Digital representative.

Running the IVP Separately

Do the following to run the IVP separately from the installation procedure.

Step	Action

1	Enter the following command:
	`$ @SYS$TEST:HUBWATCH$IVP`
	Result: The following messages appear:
	`------------------------------------------------------------------`
	`HUBwatch for OpenVMS for VAX, Version 4.0`
	`Installation verification procedure.`
	`Copyright © 1995  by`
	`DIGITAL EQUIPMENT CORPORATION, Littleton, Mass, USA`
	`All rights reserved.`
	`------------------------------------------------------------------`
	`Enter a question mark (?) for help on any of the following  questions,`
	`   or type <CTRL/Z> to exit the verification procedure at any time.`
	`*  What is the IP address of the SNMP agent?`

2	Enter the IP address in the format *d.d.d.d*, where *d* is a decimal number less than 256. Then press Return. **Result:** The procedure displays the following: `*  What is the r/w Community Name for the agent?`
3	Enter the community name for the agent, (for example, "public"). The community name is case sensitive. **Result:** The procedure displays the following: `*   Hit the <Return> key to start HUBwatch or <ctrl/z> to abort:`

Step	Action

4	Press Return to start HUBwatch.
	Result: The procedure displays the following:
	`Device:  WSA1:  [exec]`
	`Node:  0`
	`Transport: LOCAL`
	`Server:  0`
	`Screen:  0`
	
	`HUBwatch will now be run on the above display.`
	`When the front-panel view for your hub comes up, move the pointer to the `File` menu, and press and hold mouse button 1. Slide the pointer down to `Exit` in the menu which will appear below File, and release mouse button 1.`
	`If HUBwatch fails to come up, check that the display information shown above is correct...`
	`* Hit the <Return> key to start HUBwatch or <ctrl/z> to abort:`

5	Press Return.
	Result: The procedure then continues by starting HUBwatch. HUBwatch begins by displaying hub management and configuration information.
	Example:
	`WATCH /AGENT 00.00.00.00 -`
	`/COMMUNITY="public" -`
	`/TIMEOUT=5 /RETRIES=2 /VIEW=PHYSICAL`
	`(I) HUBWATCH$LIBRARY = SYS$LOGIN`
	The procedure then displays the following:
	`HUBwatch for OpenVMS Revision 3.1`
	If you have not previously installed and used HUBwatch, you will receive warning messages like the following, which you can ignore:
	`(W) Current agent not in the agent table`
	`(W) Unresolved agent node IP name`
	`(W) Agent type DETMM found for 00.00.00.00`
	As part of the IVP, HUBwatch software displays the Hub Front Panel window. The Hub Front Panel window differs, depending on whether you started HUBwatch with the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, or a standalone module. The *HUBwatch Use* book has pictures of the Hub Front Panel windows that appear for the DEChub 900MS and the DECagent 90.

Step	Action

6	Exit the Hub Front Panel window. Click on the File menu and then click on Exit.
	Result: The procedure displays the following:
	`The HUBwatch events viewer will now be verified.`
	`When the HUBwatch viewer window appears on the display, move the pointer to the `File` menu, and press and hold mouse button 1. Slide the pointer down to `Exit` in the menu which will appear below `File`, and release the mouse button.`
	`*  Hit the <Return> key to start the events viewer, or  <ctrl/z> to abort:`
	`$   WATCH /VIEWER`

7	Press return to verify the events viewer. **Result:** The HUBwatch software displays the Events Viewer window.

8	Exit the Events Viewer window. Click on the File menu and then click on Exit.
	Result: The procedure displays the following:
	`Exiting HUBwatch`
	`HUBwatch Version 4.0 Installation verification complete.`

Installing HUBwatch Help Files Separately

If anyone on the system was using OpenVMS help while you were installing HUBwatch, the installation did not add HUBwatch help to the OpenVMS help library. To add help for the HUBwatch startup command, WATCH/AGENT, at a later time, use the following command:

```
$ LIBRARY /REPLACE /HELP SYS$HELP:HELPLIB SYS$HELP:HUBWATCH.HLP
```

Editing the System Startup Command Procedure

To start HUBwatch after the installation is complete, you must add the following line to SYS$STARTUP:SYSTARTUP_V5.COM or, for OpenVMS Version 6.0 or later, SYS$MANAGER:SYSTARTUP_VMS.COM:

```
$ @SYS$STARTUP:HUBWATCH$STARTUP.COM
```

Modifying DECmcc Version 1.2 Files

To launch HUBwatch from DECmcc Version 1.2, all DECmcc users need to modify their own MCC_RESOURCE.DAT files according to the instructions in MCC_SYSTEM:MCC_HUBWATCH.COM.

Users of POLYCENTER Version 1.3 or later can launch HUBwatch from the POLYCENTER Applications menu without editing any files.

For More Information: See Appendix A for details about using HUBwatch with the POLYCENTER software.

Starting HUBwatch as a Standalone Application

Introduction

This section describes how to start HUBwatch for OpenVMS as a standalone application. Appendix A describes how to start HUBwatch as an add-on application to the POLYCENTER Network Management platform.

Command Syntax

Use the following command to start HUBwatch:

```
$ WATCH/AGENT agent-name or ip-address/COMMUNITY=comm-string
_$ /RETRIES=n /TIMEOUT=n /VIEW=logical (or physical)
```

Command Use: When you start HUBwatch, you can use all or part of the full startup command. Which you use depends on whether you previously used HUBwatch to add entries for the agents you want to use to the Agent List box in the Community window.

For More Information: See *SNMP Agents* in Chapter 4 for information about adding agent entries.

Command Variables

These are the start command variables.

This Variable...	Specifies..
agent-name	The name assigned to the agent module
	Example: agent1.
ip-address	The Internet address in the form *d.d.d.d*, *d* being a decimal number less than 256.
comm-string	The name assigned to the community. When you enter the community name, use quotation marks.
	Example: Community="public".
/RETRIES=*n*	An integer that sets the number of retries allowed.
/TIMEOUT=*n*	The timeout period in seconds.
/VIEW=*n*	Whether a logical or physical view of the hub appears in the Hub Front Panel window. The physical view is the default.

The First Time You Start HUBwatch

The first time you invoke HUBwatch, the startup command must at least include an agent's IP address.

Example: $ **WATCH/AGENT 00.00.00.00**

HUBwatch will use default values for the remaining parameters. (The default community name is public. If the requested agent has a different community name, you must specify that name.)

Starting Subsequent HUBwatch Sessions

Once you are running HUBwatch, add entries for the agents you want to use with the Add Agent window. Then, you can invoke HUBwatch with the name of an agent from the Agent List box.

Example: $ **WATCH/AGENT HUBMAN**

Information About Adding Agents: See *SNMP Agents* in Chapter 4.

Initial Display

When you execute the startup command, the Hub Front Panel window appears. The Hub Front Panel window differs, depending on whether you started HUBwatch with the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, a GIGAswitch, or a standalone module. The *HUBwatch Use* book has pictures of the DEChub 900MS and DECagent 90 Hub Front Panel windows.

Steps

Do the following to start HUBwatch.

Step	Action
1	Is the logical name HUBWATCH$LIBRARY defined as the directory that contains or will contain the Agent file, HUBWATCH_AGENTS.DAT? • If yes, go to step 2. • If no, define the logical name as the correct directory. See the *HUBwatch Use* book for details.
2	Are you currently using HUBwatch Version 2.0 or earlier? • If no, go to step 3. • If yes, make a backup copy of your Agents file before running HUBwatch Version 4.0. The first time you add or delete an agent in your Agents file, HUBwatch Version 4.0 automatically converts the Agents file into a new format. The new format is not compatible with earlier versions of HUBwatch. The Agents file is located in HUBWATCH$LIBRARY:HUBWATCH_AGENTS.DAT
3	Enter the HUBwatch start command.

Starting the Poller and the Events Viewer

Introduction

The HUBwatch poller is a background process which queries a list of DEChubs and DEChub modules for selected MIB information. This information is then used by the HUBwatch alarms component

The events viewer allows you to view this information.

Poller Command Syntax

Use the following command to start the poller:

```
$ WATCH/POLLER START [/FILE=alarmed-agents-file-name]
```

Command Variable: The FILE=*alarmed-agents-file-name* variable tells HUBwatch to read the specified file without starting the Alarms Setup window.

Disabling the Poller: To disable the poller, enter the following command:

```
$ WATCH/POLLER STOP
```

Events Viewer Command Syntax

Use the following command to start the events viewer:

```
$ WATCH/VIEWER
```

3

HUBwatch for DEC OSF/1 AXP Installation

Overview

Introduction

This chapter describes how to install the HUBwatch for DEC OSF/1 AXP (Digital UNIX) software using the `setld` utility.

In This Chapter

This chapter includes the following topics:

- Pre-installation requirements.
- Installing HUBwatch for OSF/1 AXP.
- Post-installation tasks.
- Starting HUBwatch for OSF/1 AXP as a standalone application.

HUBwatch Software References

In this book, the term HUBwatch refers to the HUBwatch for Windows, HUBwatch for OpenVMS, and HUBwatch for DEC OSF/1 AXP software.

Valid Configurations

You can install the HUBwatch software in the following configurations:

- To run as a standalone application.
- To run HUBwatch as an application under POLYCENTER NetView network management software.

Pre-Installation Requirements

Installation Time

On OSF/1 AXP systems, the HUBwatch installation procedure takes approximately 10 minutes.

Is the Distribution Kit Complete?

The HUBwatch installation kit should contain the following items.

- One CD-ROM optical disk.
- A CD-ROM booklet and CD-ROM read-me first letter.
- *HUBwatch Installation and Configuration* book (this book).
- *HUBwatch for Windows Use* book.

If any item is missing, contact your local Digital representative.

Back Up the System Disk

Before starting the installation procedure, back up the system disk onto which you will install the HUBwatch software. See the DEC OSF/1 AXP system documentation for instructions.

Hardware Requirements

You need the following:

- Software distribution device (if installing from media).

  Locate the CD-ROM drive for the CD-ROM software distribution media. The CD-ROM booklet or the documentation for the CD-ROM driver you are using explains how to load the CD-ROM media.

- Terminal to communicate with the operating system and respond to prompts from the installation procedure.

See the HUBwatch for OSF/1 AXP Version 4.0 Software Product Description (SPD 46.65.xx) for additional hardware requirements.

Memory Requirements

The system on which you are installing the software must have a minimum of 64 megabytes of memory.

Disk Space Requirements

To install the software, there must be a minimum of 33,000 kilobytes of free space. Space used in specific subdirectories is as follows.

Subdirectory	Space Used
/usr/kits	27,000 Kbytes
/usr/lib	5,000 Kbytes
/usr/man	20 Kbytes

Checking Available Space: To find out whether you have enough free space, use the df command. For example:

```
# df /usr/kits <Return>
```

If the space required exceeds the space available, clear sufficient space.

Firmware Requirements

Each of your hubs and modules needs the most recently released version of the firmware. See the HUBwatch release notes for the minimum revision firmware that HUBwatch supports.

Because Digital is continuously improving the quality of the DEChub product family, periodic releases of firmware will become available. To find information about the latest firmware releases:

- Contact your local Digital reseller or your local Digital sales office.
- Read the README file found in the /pub/DEC/hub900 directory at ftp.digital.com.

Firmware updates are customer installable. To register for automatic notification of new firmware releases, return the Business Reply Card supplied with this product, or send your name, title, and mailing address to dechub_notice@lkg.dec.com.

Software Requirements

The system must have the following software installed and operating.

- DEC OSF/1 AXP Version 2.0 or Version 2.1 operating system including the following subsets
  (* indicates any subset subversion number):

  OSFBASE2*
  OSFX11*
  OSFCLINET2*
  OSFINET2*

Optional Software

To use HUBwatch for OSF/1 AXP software with POLYCENTER network management software, you must have POLYCENTER NetView for DEC OSF/1 AXP. Refer to the HUBwatch for OSF/1 AXP Software Product Description (SPD 46.65.xx) for details.

License Requirements

You cannot use the HUBwatch software unless the HUBwatch license is installed. To check for the HUBwatch license, as root, type:

```
# lmf list <Return>
```

Example: The following example displays what licenses are installed.

```
Product           Status       Users:     Total  Active
HUBWATCH-FOR-OSF  active       unlimited
```

Installing the License: If the license is not installed, do the following.

Step	Action
1	Obtain the HUBwatch Product Authorization Key (PAK) delivered with the software distribution kit.
2	Log in as superuser on the system where you are installing the software.
3	Invoke LMF as follows. `# lmf register` **Result**: The LMF utility displays a blank template and a file name.
4	Use vi or another editor to insert the information from the HUBwatch PAK into the template.
5	Exit from the editor.
6	Enter the following command to copy the license details from the License Database (LDB) to the kernel cache: `# lmf reset`
7	Check the license by entering the following command. # **lmf list <Return>** **Result:** The system displays the following message. `Product HUBWATCH-FOR-OSF Status active Users: unlimited Total Active`

LMF Information: For information on using LMF and for LMF error messages, see the *Guide to Software License Management* and the *lmf(8)* reference page.

Reinstalling or Upgrading the HUBwatch for OSF/1 AXP Software

Deleting Subsets

On OSF/1 AXP systems, before reinstalling HUBwatch software or upgrading to a new version, you must delete the existing HUBwatch subsets, manual reference pages, and SNMP agent examples.

To delete the existing subsets, enter the setld command followed by the names of the subsets.

Command Example

This example shows how to delete the HUBwatch for OSF/1 AXP Version 3.1 subsets.

```
# setld -d HBWTCH310
```

Installing HUBwatch for OSF/1 AXP From the Distribution Media

Introduction

This section explains how to install HUBwatch for OSF/1 software on the local system from the CD-ROM.

Read the Release Notes before you install: Before installing the software, read the HUBwatch release notes in the file `usr/kits/HUBwatch/hubwatch.release_notes`.

Steps

To install the HUBwatch for OSF/1 AXP software, do the following.

Step	Action
1	Log in as superuser (login name root) to the system where you are installing HUBwatch software.
2	Make sure that you are at the root (/) directory by entering the following command: # **cd /**

3	If your CD-ROM optical disc is not already in its caddy, follow the instructions in the *Compact Disc User's Guide*.
	To determine the drive where the CD-ROM device is located, use the following command:
	# **file /dev/rrz*c**
	Information from the file command is displayed.
	Example:
	`/dev/rrzlc: character special (8/1026) SCSI #0 RZ25 disk #8 (SCSI ID #1)`
	`/dev/rrz2c: character special (8/2050) SCSI #0 RZ25 disk #16 (SCSI ID #2)`
	`/dev/rrz3c: character special (8/3074) SCSI #0 RZ26 disk #24 (SCSI ID #3)`
	`/dev/rrz4c: character special (8/4098) SCSI #0 RRD42 disk #32 (SCSI ID #4)`
	In this output from the file command, RRD indicates the CD-ROM device.
	To mount the distribution media, enter the following command. This example shows the that CD-ROM device is located on the c partition of the rz4 disk.
	# **mount -rd /dev/rz4c /mnt**

Step	Action

4	Enter setld with the -l option (for the load function) and the directory of the mounted file system where the HUBwatch subset resides.
	Example:
	# **setld -l /mnt**
	Result: The installation procedure displays the following information and prompt:
	`The subsets listed below are optional:`
	`There may be more optional subsets than can be presented on a single screen. If this is the case, you can choose subsets screen by screen or all at once on the last screen. All of the choices you make will be collected for your confirmation before any subsets are installed.`
	`1) HUBwatch for OSF/1 AXP V4.0`
	`Or you may choose one of the following options:`
	`2) ALL of the Above`
	`3) CANCEL selections and redisplay menus`
	`4) EXIT without installing any subsets`
	`Enter your choices or press RETURN to redisplay menus.`
	`Choices (for example, 1 2 4-6):`

Step	Action

5	Enter your choice and press Return.
	Result: The installation procedure prompts you to verify your choice with the following message.
	`You are installing the following optional subsets:`
	`HUBwatch for OSF/1 AXP Version 4.0`
	`Is this correct? (y/n):`

6	Enter Yes and press Return.
	Result: The procedure displays the following message.
	`Checking file system space required to install selected subsets:`
	`File system space checked OK.`
	`HUBwatch for OSF/1 AXP Version 4.0`
	`Copying from . cdrom/AXP/hubwatch/bin (disk)`
	`Working....Fri Oct 27 14:46:19 EDT 1995`
	`Verifying`
	`Configuring “HUBwatch for OSF/1 AXP Version 4.0” (HBWTCH400)`
	`Installation Configuration for`
	`(HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0`
	`Rebuilding the whatis data structures for man -k and apropos.`
	`Rebuild complete.`
	`Do you want to install the necessary files for launching HUBwatch from POLYCENTER NetView for DEC OSF/1 AXP Version 2.1 (y/n):`

Step	Action

7	Do you want to run HUBwatch as an add-on to a POLYCENTER NetView for DEC OSF/1 AXP Version 2.1?
	• If yes, enter Yes and press Return.
	Result: The system displays the following message.
	`THERE ARE NO MORE QUESTIONS TO ANSWER`
	`The installation will continue automatically from this point. The installer is ADVISED to read all notes printed during the installation process for important information on the proper operation of (HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0.`
	`The installation and configuration of HUBwatch has completed.`
	`Copyright (c) Digital Equipment Corporation, 1995 All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States.`
	`#`
	• If no, enter No and press Return.
	Result: The system displays the following message.
	`You have chosen NOT to configure your system to run HUBwatch for OSF/1 AXP Version 4.0 from POLYCENTER Netview for DEC OSF/1 AXP on this system at this time.`
	`When you decide to configure HUBwatch for OSF/1 AXP Version 4.0 to run from POLYCENTER Netview for DEC OSF/1 AXP on this system, issue the command:`
	`setld -c HBWTCH400 INSTALL`
	`THERE ARE NO MORE QUESTIONS TO ANSWER`
	`The installation will continue automatically from this point. The installer is ADVISED to read all notes printed during the installation process for important information on the proper operation of (HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0.`
	`The installation and configuration of HUBwatch has completed.`
	`Copyright (c) Digital Equipment Corporation, 1995 All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States.`
	`#`

8	Once the subsets are installed, unmount the distribution media by entering the following command: # **umount /mnt**

Installing HUBwatch for OSF/1 AXP from a Remote Installation Server

Introduction

This section explains how to install HUBwatch from a remote installation server (RIS). The installation procedure loads the HUBwatch files onto a disk on the system where you perform the installation.

Read the Release Notes before you install: Before installing the software, read the HUBwatch release notes. The HUBwatch release notes are in the file `/usr/kits/HUBwatch/hubwatch.release_notes.`

Steps

To install HUBwatch for OSF/1 AXP from a RIS (where the subsets reside in a /etc/ris distribution area), do the following.

Step	Action
1	Log in as superuser.
2	Make sure that you are at the root (/) directory by entering the following command: # **cd /**
3	Enter setld with the -l option (for the load function) and the name of the RIS server system where the HUBwatch subsets reside. **Example:** If you are loading HUBwatch subsets from a RIS distribution area on the node BIGSYS, enter the following command. # **setld -l bigsys:**

Step	Action

4	The installation procedure displays the names of the subsets available on the remote system and asks you to specify the subsets you want to load as follows:
	`The subsets listed below are optional:`
	`There may be more optional subsets than can be presented on a single screen. If this is the case, you can choose subsets screen by screen or all at once on the last screen. All of the choices you make will be collected for your confirmation before any subsets are installed.`
	`1) HUBwatch for OSF/1 AXP Version 4.0`
	`Or you may choose one of the following options:`
	`2) ALL of the Above`
	`3) CANCEL selections and redisplay menus`
	`4) EXIT without installing any subsets`
	`Enter your choices or press RETURN to redisplay menus.`
	`Choices (for example, 1 2 4-6):`

5	Enter your choice and press Return.
	Result: The procedure displays the following.
	`HUBwatch for OSF/1 AXP Version 4.0 (HBWTCH400)`
	`Copying from . BIGSYS`
	`Working....Fri Oct 27 14:46:19 EDT 1995`
	`Verifying`
	`Configuring “HUBwatch for OSF/1 AXP Version 4.0” (HBWTCH400)`
	`Installation Configuration for`
	`(HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0`
	`Rebuilding the whatis data structures for man -k and apropros.`
	`Rebuild complete.`
	`Do you want to install the necessary files for launching HUBwatch from POLYCENTER NetView for DEC OSF/1 AXP Version 2.1 (y/n):`

Step	Action

6	Do you want to run HUBwatch software as an add-on to a POLYCENTER NetView for DEC OSF/1 AXP Version 2.1?
	• If yes, enter Yes and press Return.
	THERE ARE NO MORE QUESTIONS TO ANSWER.
	`The installation will continue automatically from this point. The installer is ADVISED to read all notes printed during the installation process for important information on the proper operation of (HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0.`
	`The installation and configuration of HUBwatch has completed.`
	`Copyright (c) Digital Equipment Corporation, 1995 All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States.`
	`#`
	• If no, enter No and press Return.
	Result: The procedure displays the following.
	`You have chosen NOT to configure your system to run HUBwatch for OSF/1 AXP Version 4.0 from POLYCENTER Netview for DEC OSF/1 AXP on this system at this time.`
	`When you decide to configure HUBwatch for OSF/1 AXP Version 4.0 to run from POLYCENTER Netview for DEC OSF/1 AXP on this system, issue the command:`
	`setld -c HBWTCH400 INSTALL`
	THERE ARE NO MORE QUESTIONS TO ANSWER.
	`The installation will continue automatically from this point. The installer is ADVISED to read all notes printed during the installation process for important information on the proper operation of (HBWTCH400) HUBwatch for OSF/1 AXP Version 4.0.`
	`The installation and configuration of HUBwatch has completed.`
	`Copyright (c) Digital Equipment Corporation, 1995 All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States.`
	`#`

Installation Errors

Conditions That Cause Installation Problems

If errors occur during the installation, the system displays failure messages. Errors can occur if any of the following conditions exist:

- The operating system version is incorrect.
- The prerequisite software version is incorrect.
- There is insufficient disk space.
- The system parameter values for successful installation are insufficient.

Where to Find Error Message Descriptions

See the DEC OSF/1 AXP documentation on system messages, recovery procedures, and the DEC OSF/1 AXP software installation. See *Software Requirements* in this chapter for information about system software requirements.

Post-Installation

Introduction

After you install HUBwatch for OSF/1, run the installation verification procedure (IVP) to verify that the software is available on your system. You might also want to run the IVP after a system failure to be sure that users can access HUBwatch.

IVP Command

Enter the following command to run the IVP:

```
# setld -v HBWTCH400
```

Starting HUBwatch for OSF/1 AXP as a Standalone Application

Set the Environment Variable

Before you enter the start command, set the environment variable HUBWATCH_LIBRARY to the directory where the `hubwatch_agents` file resides. Use the appropriate set command for your shell. For example, the C shell uses `setenv`, and the Bourne shell uses `set`.

Command Example:

```
# setenv HUBWATCH_LIBRARY /usr/users/xyz
```

Command Syntax

Use the following command syntax to start HUBwatch.

```
# hubwatch -x IP-address -c comm-string \
> -a agent-name -r retry-count -t timeout -l
```

Command Variables

The following are the command variables for the start command.

Variable	Description
IP-address	The internet address in the form *d.d.d.d* , *d* being a decimal less than 256.
comm-string	The name assigned to the community. Use quotation marks when you enter the community name.
	Example: "public"
agent-name	The name assigned to the agent module, **Example**: agent1.
retry-count	An integer that sets the number of retries allowed.
timeout	The timeout period in seconds.

4

Preparing for Configuration

Configuration Overview

Introduction

Before you can use the HUBwatch software to manage your hub and network modules, become familiar with the SNMP agents that HUBwatch uses and the hub configuration procedures described in this chapter.

In This Chapter

This chapter contains the following topics:

- SNMP agents.
- Configuring hubs.

Terminology

The configuration chapters in this book apply to all operating systems under which the HUBwatch software runs. The following terminology applies to all configuration chapters.

Term on Windows...	Term on OpenVMS...
Window	Window and dialog box
Click on *option*	Click on the *option* button
Menu	Pull-down

SNMP Agents

Introduction

Before using the HUBwatch software to manage your hub or network modules, you must determine the correct SNMP agent for each module you want to manage.

Agent Selection Guidelines

The agent you choose depends on the types of modules and hub that you will manage with the HUBwatch software. The following rules apply:

- A DEChub 90 or a Digital stackable product requires a DECagent 90, DEC repeater 90FS, or DEC repeater 90TS. A DECagent 90 can manage up to 16 interconnected hub communities and 48 network modules. A DEC repeater 90FS and DEC repeater 90TS do not support multiple communities and can manage other DEC repeater 90 modules only.
- The recommended agent for managing DECrepeaters 90C, 90FA, 90T, 90T-16, and 90T+ when installed in the DEChub 900MS is the DEChub 900MS Hub Manager.
- You can also use a DECrepeater 90TS, DECrepeater 90FS, and DECagent 90 to manage DECrepeaters 90C, 90FA, 90T, 90T-16, and 90T+. If the DECagent 90 is not in the same hub as the repeater module, you must install a DECbridge 90 or 90FL in the same hub as the repeater.

HUBwatch Agent Requirements

The following table lists the agents that HUBwatch uses and their requirements.

This Agent...	Requires...
DEChub 900MS Hub Manager - In-band management	IP services module in the hub
DEChub 900MS Hub Manager - Out-of-band management	SLIP support at the remote host
DECagent 90 - In-band management	If managing a repeater in a remote hub DEChub 90, requires a DECbridge 90 or 90FL installed in the repeater's hub
DECagent 90 - Out-of-band management	SLIP support at the remote host, also if managing a repeater in a remote hub DEChub 90, requires a DECbridge 90 or 90FL installed in the repeater's hub
DECrepeater 90FS and 90TS	If managing a repeater only, a DEChub90 or a Digital stackable product
Built-in agent for: • 900-series modules • DECbrouter 90T1, 90T2, or 90Ta • DECrepeater 90FS or 90TS • DECserver 90TL or 90M	No requirements

90 Agents in a DEChub 900MS

If you lack the necessary IP services module for the Hub Manager or SLIP support from a remote host, you can use a DECagent 90 (on the same LAN segment) in a DEChub 900MS to manage the following:

- DECbridges 90 and 90FL.
- DECrepeaters 90C, 90FA, 90FL, 90T, 90T+, and 90T-16.
- DECservers 90L and 90L+.

You also can use a DECrepeater 90FS or DECrepeater 90TS (on the same LAN segment) in the DEChub 900MS to manage DECrepeaters 90C, 90FA, 90FL, 90T, 90T+, and 90T-16.

Recommendation: Use a Hub Manager to manage 90-series repeaters in a DEChub 900MS unless the Hub Manager does not have an IP address.

Standalone Modules and Their Agents

The following table lists the modules that you can install as standalone (not installed DEChub 900MS or DEChub 90) and require specific SNMP agents.

WHEN This Module Is Standalone...	THEN Use This Agent...
DECagent 90	Built-in agent
DECbridge 90 or 90FL	DECagent 90 on the same LAN segment
DECbrouter 90T1, 90T2, or 90T2A	Built-in agent
DECrepeater 90FS or 90TS	Built-in agent
DECserver 90L or 90L+	DECagent 90 on the same LAN
DECserver 90TL, 90M, or 900TM	Built-in agent
All other 900-series modules that HUBwatch can manage	Built-in agent; installed in a DEChub ONE

Configuring Hubs

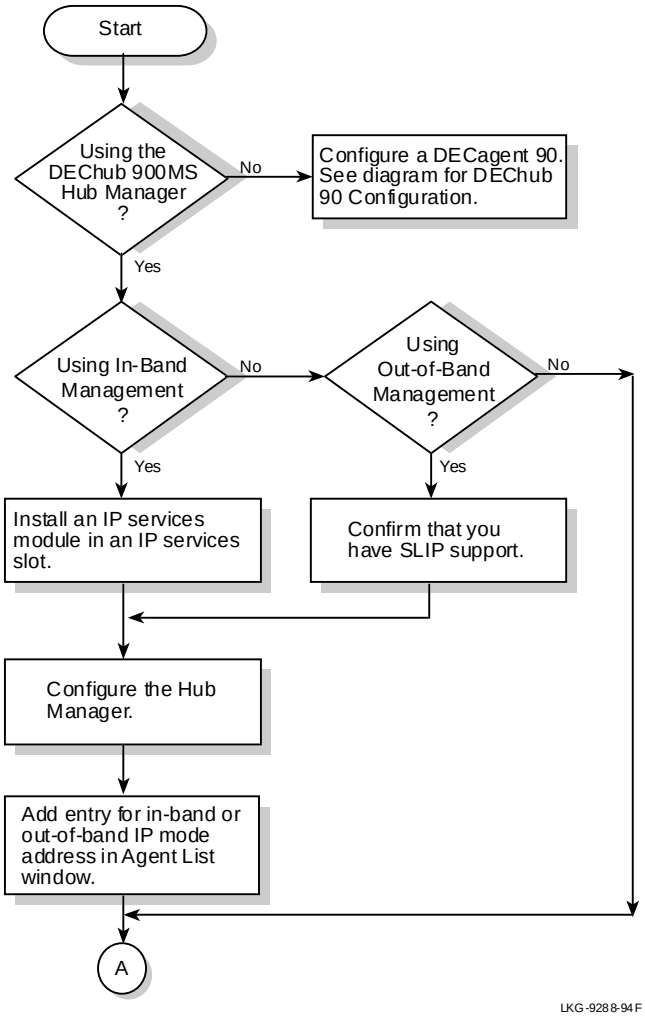
Introduction

The type of hub or module you want HUBwatch to manage determines the configuration procedures you use. The diagrams in this section illustrate these procedures.

Chapter 4 contains the procedures for configuring your network modules as SNMP agents and for HUBwatch management.

Diagram: DEChub 900MS Configuration

This diagram illustrates the steps you take when you configure a DEChub 900MS.



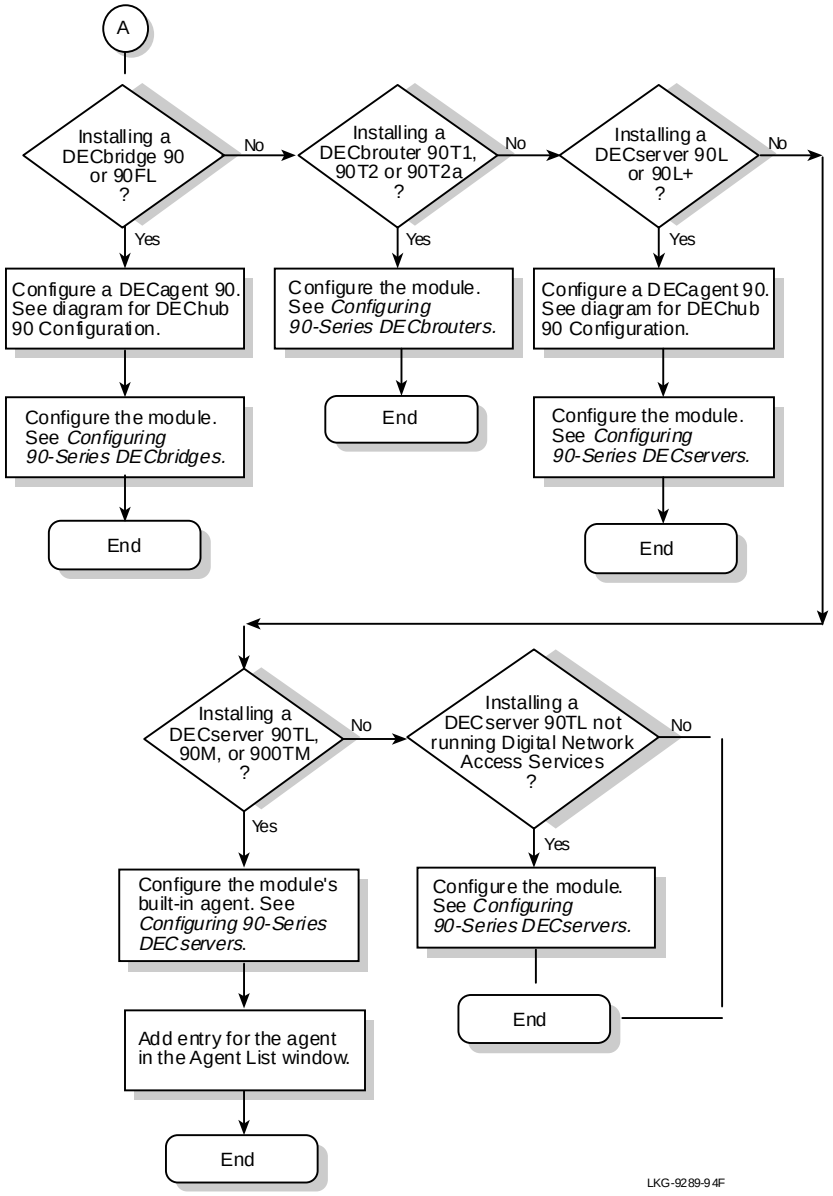

A
Installing a DECbridge 90 or 90FL ?
No
Installing a DECbrouter 90T1, 90T2 or 90T2a ?
No
Installing a DECserver 90L or 90L+ ?
No
Yes
Yes
Yes
Configure a DECagent 90. See diagram for DEChub 90 Configuration.
Configure the module. See Configuring 90-Series DECbrouters.
Configure a DECagent 90. See diagram for DEChub 90 Configuration.
Configure the module. See Configuring 90-Series DECbridges.
End
Configure the module. See Configuring 90-Series DECservers.
End
End
Installing a DECserver 90TL, 90M, or 900TM ?
No
Installing a DECserver 90TL not running Digital Network Access Services ?
No
Yes
Yes
Configure the module's built-in agent. See Configuring 90-Series DECservers.
Configure the module. See Configuring 90-Series DECservers.
End
Add entry for the agent in the Agent List window.
End
LKG-9289-94F

Diagram: DECrepeater 90FS and 90TS Configuration

This diagram illustrates the steps you take when you configure a DECrepeater 90FS or 90TS. See *90 Agents in a DEChub 900MS* in this chapter for information about using a DECrepeater 90FS and 90TS.

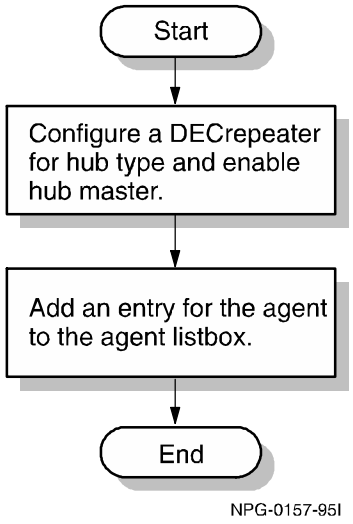


Diagram: DECagent 90 Configuration

This diagram illustrates the steps you take when you configure a DECagent 90. See *90 Agents in a DEChub 900MS* in this chapter for information about using a DECagent 90 in a DEChub 900MS

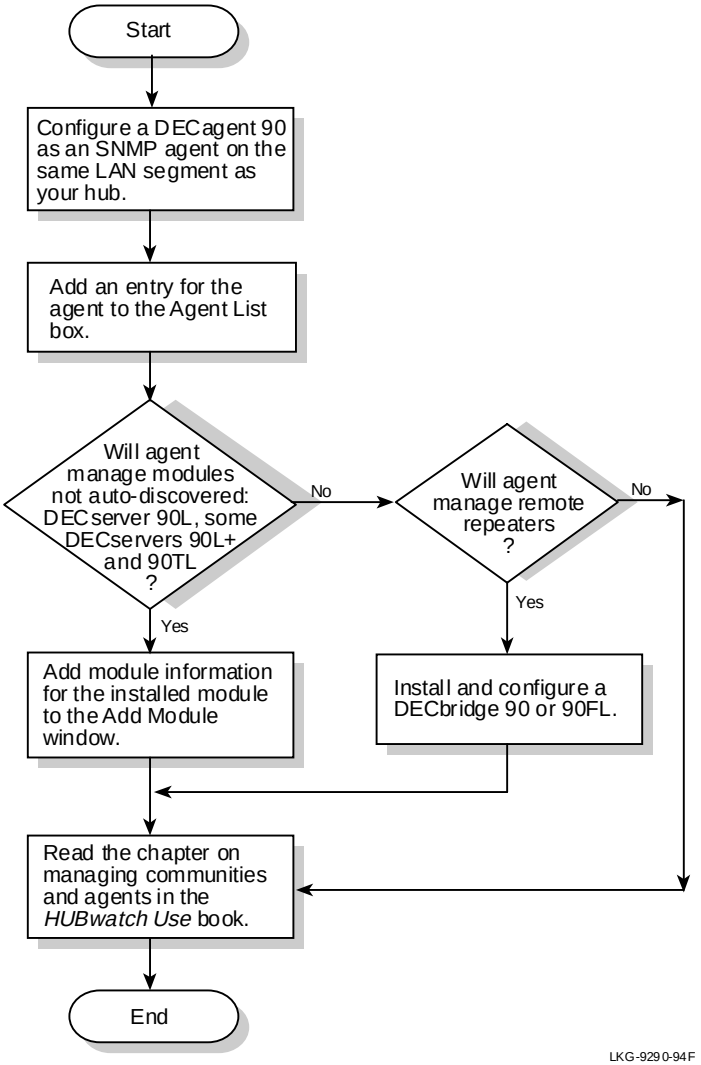
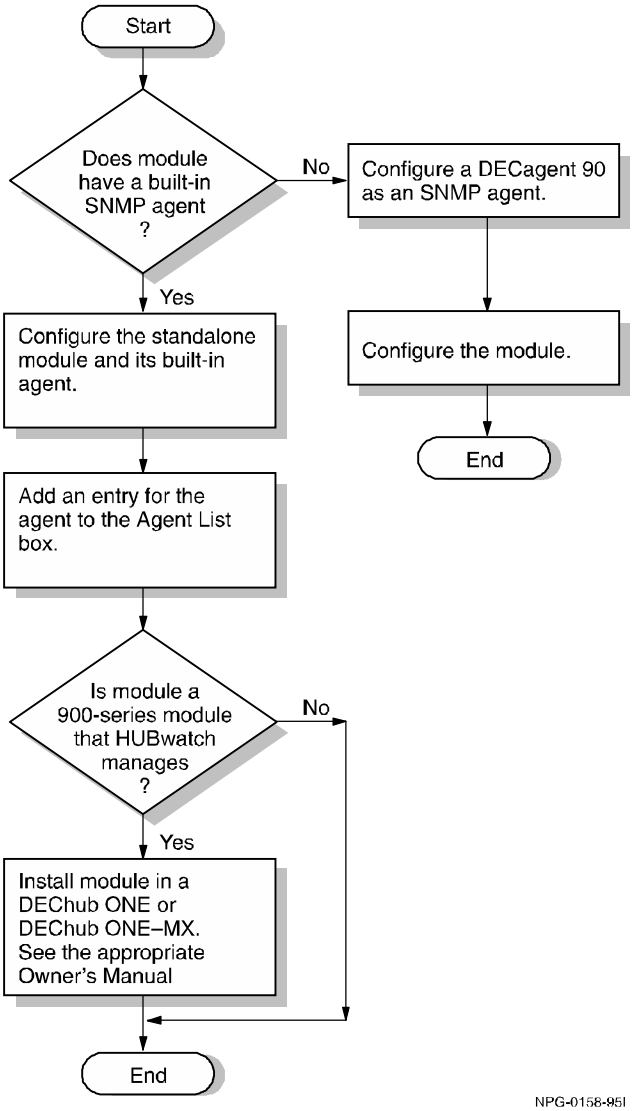


Diagram: Standalone Module Configuration

This diagram illustrates the steps you take when you configure standalone modules.



5

Network Module Configuration

Overview

Introduction

Once you know which modules you want the HUBwatch application to manage and have determined the SNMP agent that the module requires, you are ready to configure the module. To configure the network modules for use with HUBwatch, you must install and start the HUBwatch application.

In This Chapter

This chapter covers the following topics:

- Configuration considerations.
- Configuring SNMP agents.
- Adding agent information.
- Adding module information.
- Configuring 900-series modules.
- Configuring a DECagent 90.
- Configuring 90-series DECbridges.
- Configuring 90-series DECbrouters.
- Configuring 90-series DECrepeaters.
- Configuring 90-series DECservers.

Configuration Considerations

Modules Not Directly Manageable In This HUBwatch Version

The following modules are not not directly manageable through HUBwatch views. However, if you install them in a hub, they appear on the Hub Front Panel window.

- DECpacketprobe 90. If you double click on the module, HUBwatch attempts to bring up Probewatch, if installed.
- DECpacketprobe 900RR. If you double click on the module, HUBwatch attempts to bring up Probewatch, if installed.
- RouteAbout Access 1. If you double click on the module, you start a telnet session.
- RouteAbout. If you double click on the module, you start a telnet session.

When You Configure

After you install a network module, you need to configure it so that HUBwatch can manage it. Make sure that:

- You have the latest firmware.
- The required SNMP agent for the module is configured.
- The agent information is added to HUBwatch.

To configure the module for HUBwatch management, you:

- Complete the module-specific procedures described in this chapter.
- Add module-specific information by using the Add Module window, if required.
- Read the *HUBwatch Use* book for information about using the interface.

References

See the following for more information about SNMP agents and related procedures.

IF You Need to Know About...	THEN See This Section...
Selecting the correct SNMP agent	*SNMP Agents* in Chapter 4
Adding agent information to HUBwatch	*Adding Agent Information* in this chapter
Adding module information to HUBwatch	*Adding Module Information* in this chapter

Configuring SNMP Agents

Introduction

This section describes the SNMP agent configuration procedures for:

- The DEChub 900MS Hub Manager.
- 900-Series Modules.
- The DECagent 90.
- DECbrouters 90T1, 90T2 and 90T2A.
- DECrepeaters 90FS and 90TS.
- DECservers 90TL, 90M, and 900TM.

DEChub 900MS Hub Manager Requirements

If you have a DEChub 900MS, you can manage the modules in the hub through the DEChub 900MS Hub Manager. The Hub Manager permits both in-band and out-of-band management.

In-Band Management Requirements: For in-band management, you need to install an IP services module in the hub that provides the IP interface for the Hub Manager. The IP services module must be reachable from the HUBwatch management station. Currently, the following modules are capable of providing IP services:

- DECbridge 900MX.
- DECconcentrator 900MX and 900TH.
- DECrepeater 90FS and 90TS.
- DECrepeaters 900GM, 900FP, and 900TM.
- DECswitches 900EE and 900EF.
- PEswitch 900TX.
- DECserver 900GM.

- DECrepeater 900TL, 900FL, and 900SL.
- DECmau 900TL.
- DECmau 900TH.
- PORTswitch 900TP, 900CP, and 900FP.

Out-of-Band Management Requirements: Out-of-band management uses the OBM port on the DEChub 900MS (the DEChub 900MS hardware documentation describes the OBM port). The OBM port supports the SLIP protocol only.

To enable management of the hub through the DEChub 900MS Hub Manager, you must create a minimum default configuration for the Hub Manager. When you configure the Hub Manager for both in-band and out-of-band management, you must supply different IP addresses for the in-band and out-of-band paths.

Procedure: DEChub 900MS Hub Manager Configuration

Do the following to configure the Hub Manager.

Step	Action
1	Connect a terminal to the DEChub 900MS setup port. The setup port is an RJ45 connector located on the hub.
2	Set the terminal parameters as follows. **Parameter** — **Setting** Transmit speed — 9600 baud Character format — 8 bits, no parity Stop bits — 1 **Note:** There is no flow control. Some terminal parameter settings, such as smooth scroll, may cause problems.
3	If you have not yet installed an IP services module in the hub, do so now. **Multiple IP Services Modules:** If you have more than one module that can provide IP services in the hub, put the one used as the IP interface into a slot with a larger number to ensure that it gets higher priority for power.
4	At the terminal prompt, press Return or Ctrl/C. **Result:** The DEChub 900MS Main menu appears. **Reference:** See the DEChub 900MS hardware documentation for information about using the DEChub 900MS Main menu.
5	Are you using in-band management? • If no, go to step 6. • If yes, do the following: a. Select the option for setting the in-band management IP address. b. Enter the IP address for in-band management in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255. c. Enter the slot number of the module that will supply the IP services for the Hub Manager. **Moving the IP Services Module**: If you later move the IP services module to a different slot, you must reconfigure the hub to utilize the new slot by performing the steps in this procedure again.

Step	Action
6	Are you using out-of-band management? • If no, go to step 7. • If yes, do the following: a. Select the option for setting the out-of-band management IP address. b. Enter the IP address for out-of-band management in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255. **Important:** *The IP addresses for in-band and out-of-band management must differ*. c. If you are using HUBwatch for Windows for out-of-band management, refer to Appendix B for instructions on how to configure HUBwatch for Windows to run over a SLIP connection.
7	Do you want a read-write community name other than "public"? • If no, go to step 8. • If yes, do the following: a. Select the option for setting the SNMP community name. b. Enter the read-write community name. The community name consists of 4 to 32 printable characters and functions as a password giving a sending SNMP entity read-write access to the Hub Manager.
8	Is there a router between the HUBwatch management station and the module that provides the IP interface? • If no, you are finished with the procedure. • If yes, do the following: a. Select the option for redirect mode. b. Enter the slot number of the IP services module. The module's Main menu appears (see the module's hardware documentation). c. Select the option for setting the in-band gateway address. d. Enter the IP address for the default gateway address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.
9	Start HUBwatch and add an entry for the Hub Manager by using the Add Agent window. **Adding Agent Information:** See Adding Agent Information in this chapter.

Procedure: 900-Series Module Configuration

Perform the following procedure on each 900-series module manageable by HUBwatch (see Appendix E) to configure it as an SNMP agent.

Step	Action
1	Install the module in a DEChub ONE, DEChub ONE MX, or a DEChub 900MS.
2	Connect a terminal to the setup port on the DEChub ONE or the DEChub 900MS. **References:** See the DEChub ONE hardware documentation or the DEChub 900 MultiSwitch hardware documentation for information about using the setup port.
3	Set the terminal parameters as follows. **Parameter Setting** Transmit speed 9600 baud Character format 8 bits, no parity Stop bits 1
4	Access the module's Installation menu. How you access the menu depends on whether the module is in a DEChub 900MS or a DEChub ONE. If the module is in a DEChub ONE, press Return at the terminal. If the module is in a DEChub 900MS, do the following: a. Select the option for redirect mode on the DEChub 900MS Installation menu. b. Enter the slot number of the module. The module's Installation menu appears. **References:** See the DEChub 900MS hardware documentation for information about redirect mode. See the module's hardware documentation for information about the module's Installation menu.
5	Are you using in-band management? • If no, go to step 6. • If yes, do the following: a. Select the menu option for setting the in-band IP address. b. Enter the in-band IP address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255. c. Return to the Hub Manager Installation menu.
6	Are you using out-of-band management? • If no, go to step 7. • If yes, do the following: a. Select the menu option for setting the out-of-band IP address. b. Enter the out-of-band IP address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255. **Important**: *The IP addresses for in-band and out-of-band management must differ.*

Step	Action
7	Do you want a read-write community name other than "public"? • If no, you are finished with this procedure; exit the Installation menu. • If yes, do the following: a. Select the menu option for setting the community name. b. Enter the read-write community name. c. The community name consists of 4 to 32 printable characters and functions as a password giving a sending SNMP entity read-write access to the module. d. If there is a router between the HUBwatch management workstation and the module, select the menu option for setting the in-band gateway address. e. Enter the IP address for the default gateway in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.

Procedure: DECagent 90 Agent Configuration

The DECagent 90 permits both in-band and out-of-band management. If you have a DEChub 900MS, Digital recommends that you manage it and its installed modules with the Hub Manager.

Do the following to configure the DECagent 90 as an SNMP agent.

Step	Action
1	Are you installing the DECagent 90 in a DEChub 90? • If yes, install it in slot 7 or 8 for a single backplane hub configuration, and slot 7, 8, 15, or 16 for an extended hub. • If no, go to Step 2.
2	Are you installing the DECagent 90 in a Digital stackable product? • If yes, install it in the Agent slot (set Digital stackable product back cover slot selector switch to agent). • If no, there are no slot restrictions.
3	Turn the power on and connect a terminal to the DECagent 90 setup port. **Reference:** See the DECagent 90 hardware documentation for information about the setup port.
4	At the terminal, press Return a few times.
5	Enter the module console password, if prompted to do so. The Main menu appears. **Reference:** See the DECagent 90 hardware documentation for information about using the Main menu.

In-band Management: For in-band management, create a minimum default configuration for your DECagent 90 module. Do the following.

Step	Action
1	Select the menu option for setting the IP address.
2	Enter the IP address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.A prompt allowing you to enter an optional default gateway appears after you enter the IP address. **Considerations:** Consider the following. • If your network has a BOOTP server that is set up to recognize the DECagent 90s MAC address, the DECagent 90s startup procedure will find the IP address and display it in the IP Address fields. In that case, you do not need to enter an IP address. Press Return to accept the address shown. • If the BOOTP server was set up to recognize the MAC address after you started the DECagent 90, the DECagent 90 will issue a BOOTP request for its IP address if you enter zero (0.0.0.0) at the IP address prompt. You will then be asked to restart the DECagent 90 module so that the BOOTP request can be issued. • If you attempt to set the DECagent 90 IP address to an address that is in a community trap address table, a warning message appears. If you want to use this address for the agent, you must remove it from the community trap address table. See the DECagent 90 hardware documentation.
3	Enter the IP address of the default gateway you want, or press Return if you do not want to specify a default gateway.
4	Do you want a read-write community name other than "public"? • If no, you are finished with this procedure. • If yes, do the following: a. Select the menu option for setting the community name. b. Enter the read-write community name. The community name consists of 4 to 32 printable characters and functions as a password giving a sending SNMP entity read-write access to the DECagent 90.

Out-of-Band Management: For out-of-band management, do the following.

Step	Action
1	Select the menu option for switching to SLIP mode.
2	Disconnect the cable from the terminal to the DECagent 90.
3	Connect the DECagent 90s serial port directly or through a modem to a station that supports SLIP.

Procedure: DECbrouter 90T1, 90T2, or 90T2A Configuration

If you have not already executed the DECbrouter first-time startup configuration, you will be asked a series of System Configuration Dialog questions. Refer to the DECbrouter documentation for more information about the System Configuration Dialog.

Do the following on each DECbrouter 90T1, 90T2, or 90T2A module to configure its built-in SNMP agent.

Step	Action
1	Connect a terminal to the setup port of the DECbrouter.

2	See if the brouter is running the IP protocol on the Ethernet port and to check its IP address and network mask, issue the following privileged mode commands to the brouter console.
	`Router#  ENABLE <Return>`
	`Password  <Return>`
	`Router# SHOW IP INTERFACE ETHERNET 0 <Return>`
	Result: The brouter will either respond with "Internet protocol processing disabled" or display detailed information about Internet processing on the Ethernet port.

Step	Action

3	If needed, enable IP or change the address or network mask. Do the following:
	a. Issue the following privileged command to the brouter console.
	`Router# CONFIG <Return>`
	Result: The following message appears.
	`Configuring from terminal, memory, or network [terminal]?`
	b. Press Return to select terminal.
	Result: The following messages appear:
	`Enter configuration commands, one per line.`
	`Edit with DELETE, CTRL/W, and CTRL/U; end with CTRL/Z.`
	c. Enter the following commands.
	Router# **INTERFACE ETHERNET 0 <Return>**
	Router# **IP ADDRESS *ddd.ddd.ddd.ddd mmm.mmm.mmm.mmm* <Return>**
	<Ctrl/Z>
	• The *ddd.ddd.ddd.ddd* variable is the Ethernet port's IP address.
	• The *mmm.mmm.mmm.mmm* variable is the port's network mask.

4	If needed, enable the SNMP server and define an SNMP community string for the brouter. Do the following:
	a. Issue the following privileged command to the brouter console:
	`Router# CONFIG <Return>`
	Result: The following message appears:
	`Configuring from terminal, memory, or network [terminal]?`
	b. Press Return to select terminal.
	Result: The following message appears:
	`Enter configuration commands, one per line.`
	`Edit with DELETE, CTRL/W, and CTRL/U; end with CTRL/Z.`
	c. Enter the following command:
	Router# **SNMP-SERVER COMMUNITY *comm-string* RW <Return>**
	Ctrl/Z>
	The *comm-string* variable is the community string for the brouter's SNMP server.

5	Save this configuration in nonvolatile memory. Issue the following privileged command to the brouter console. `Router# WRITE MEMORY <Return>`
6	Verify the Internet and SNMP configuration of the brouter. Use the following command. `Router# SHOW CONFIG <Return>` **Result**: At the end of each page of configuration information displayed, the brouter issues a "-More-" prompt. Press the space bar to get the next page of information. Press any other key to discontinue the display.

Procedure: DECrepeater 90FS and 90TS Configuration

Do the following to configure a DECrepeater 90FS or 90TS as an SNMP agent.

Step	Action
1	Install the repeater in a DEChub ONE, a DEChub 90, a Digital stackable product, or a DEChub 900MS.
2	Connect a terminal to the repeater's setup port (see the repeater's hardware documentation) if the repeater is in a DEChub ONE, DEChub 90, or a Digital stackable product. Or connect a terminal to the DEChub 900MS setup port (see the DEChub 900 MultiSwitch hardware documentation) if the repeater is in a DEChub 900MS.
3	Set the terminal parameters as follows. **ParameterSetting** Transmit speed9600 baud Character format8 bits, no parity Stop bits 1
4	Access the repeater's Main menu. How you access the menu depends on whether the repeater is in a DEChub ONE, a DEChub 90, a Digital stackable product, or a DEChub 900MS. • If the repeater is in a DEChub ONE, a DEChub 90, or a Digital stackable product, press Return at the terminal. • If the repeater is in a DEChub 900MS, do the following: a. Select the Redirect Mode option on the DEChub 900MS Main menu (see the DEChub 900MS hardware documentation). b. Enter the slot number of the repeater. c. The repeater's Main menu appears (see the repeater's hardware documentation).
5	Are you using in-band management? • If no, go to step 7. • If yes, do the following: a. Select the menu option for setting the in-band IP address. b. Enter the in-band IP address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.
6	Do you want a read-write community name other than "public"? • If no, go to step 8. • If yes, do the following: a. Select the menu option for setting the community name. b. Enter the read-write community name. The community name consists of 4 to 32 printable characters and functions as a password giving a sending SNMP entity read-write access to the repeater.

Step	Action
7	Is there is a router between the HUBwatch management workstation and the repeater? • If no, go to step 8. • If yes, do the following. a. Select the menu option for setting the in-band gateway address. b. Enter the IP address for the default gateway in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.
8	Are you using out-of-band management? • If no, you are finished with the procedure. • If yes, do one of the following: a. If the repeater is in a DEChub 900MS, the Hub Manager is the agent for out-of-band management. Configure the Hub Manager according to the instructions in the Procedure: DEChub 900MS Hub Manager *Configuration* section in this chapter. b. If the repeater is in a DEChub ONE, a Digital stackable product, or a DEChub 90, do the following to configure the module for out-of-band management: i. Select the menu option for setting the out-of-band IP address. ii. Enter the out-of-band IP address in the form *ddd.ddd.ddd.ddd*, where the maximum value of *ddd* is 255.

Procedure: DECserver 90TL, 90M, 900TM, or 900GM Configuration

Do the following procedure for each DECserver 90TL, 90M, 900TM, or 900GM module to configure it as an SNMP agent.

Step	Action
1	Set privileges on a DECserver 90TL, 90M, 900TM, or 900GM port by connecting a terminal to port 1 and pressing Return until the following message appears. `Enter username:`
2	Enter a user name (can be any name) and press Return. **Result**: The following access server prompt appears: `Local>`
3	Enter the SET PRIVILEGES command and the password. **Example:** `Local>` **`SET PRIV <Return>`** `Password>` **`SYSTEM <Return>`** (Not echoed; SYSTEM is the factory-default password.)

Step	Action

4	Determine the access server's Internet address and subnet mask.
	Example:
	`Local> **SHOW INTERNET <Return>**`
	`Internet Address: 11.21.215.13`
	`Subnet Mask: 255.255.0.0`

5	Have your network administrator verify that these are the correct values. If the values are incorrect, reset them on the access server module by using either the DEFINE, SET, or CHANGE commands.
	Example:
	`Local> **DEFINE INTERNET SUBNET MASK 255.255.255.0 <Return>**`
	`Local> **DEFINE INTERNET ADDRESS 12.23.34.45 <Return>**`

6	Enter the SHOW command to display SNMP information. The displayed values should show the SNMP state is ENABLED, Address is set to either ANY or the address of the management workstation, and that the GET, GETNEXT, and SET are ENABLED for the given community.
	Example:
	`Local> **SHOW SNMP <Return>**`
	`SNMP State: ENABLED  Authentication Failure: ENABLED`
	`Community Name  Address  GET  GETNEXT SET  TRAP`
	`Any  ENA  ENA  ENA  DIS`

Step	Action

7	Are SNMP values set correctly?
	• If yes, go to step 8.
	• If no, use these commands to set the values as required:
	`Local> CHANGE SNMP STATE ENABLED`
	`Local> CHANGE SNMP COMMUNITY public GET ENABLE`
	`Local> CHANGE SNMP COMMUNITY public GETNEXT ENABLE`
	`Local> CHANGE SNMP COMMUNITY public SET ENABLE`
	`Local> CHANGE SNMP COMMUNITY public ADDRESS ANY`
	OR
	`Local> CHANGE SNMP COMMUNITY public ADDRESS d.d.d.d`
	• *d.d.d.d* is the Internet address of the network management workstation running the HUBwatch software (for example, 11.22.33.44).
	• public is the default SNMP community.
	Considerations: When entering this information, consider the following:
	• If you enter the address of a particular station, only that station will be able to use SNMP to communicate with the access server.
	• You may define a community string other than "public," but make sure that the community that you use here for the access server matches the community string that appears for the access server in the HUBwatch Agent List box (see Adding Agent Information in this chapter and you specify in the HUBwatch Add Module window (see Adding Module Information in this chapter).

8	Did you change either the Internet address or subnet mask (step 5)?
	• If no, you are finished with the procedure.
	• If yes, reset the access server. Enter this command:
	`Local> INIT DELAY nn`
	The delay time period (*nn*) can be from 0 to 1440 minutes.
	Result: The following message appears:
	`Local> -199- WARNING - Communications server shutdown in nn minutes`

After You Configure SNMP Agents

After you configure the SNMP agents, do the following:

- Start the HUBwatch application and use the Add Agent window from the Community Table window to add agent information for the modules you configured as SNMP agents.
- Read the chapter that describes managing communities and agents in the *HUBwatch Use* book. You manage communities somewhat differently depending on whether the agent HUBwatch uses is a DECagent 90, a DEChub 900MS Hub Manager, or a module's built-in SNMP agent.

Adding Agent Information

When to Use

Add agent information to HUBwatch when:

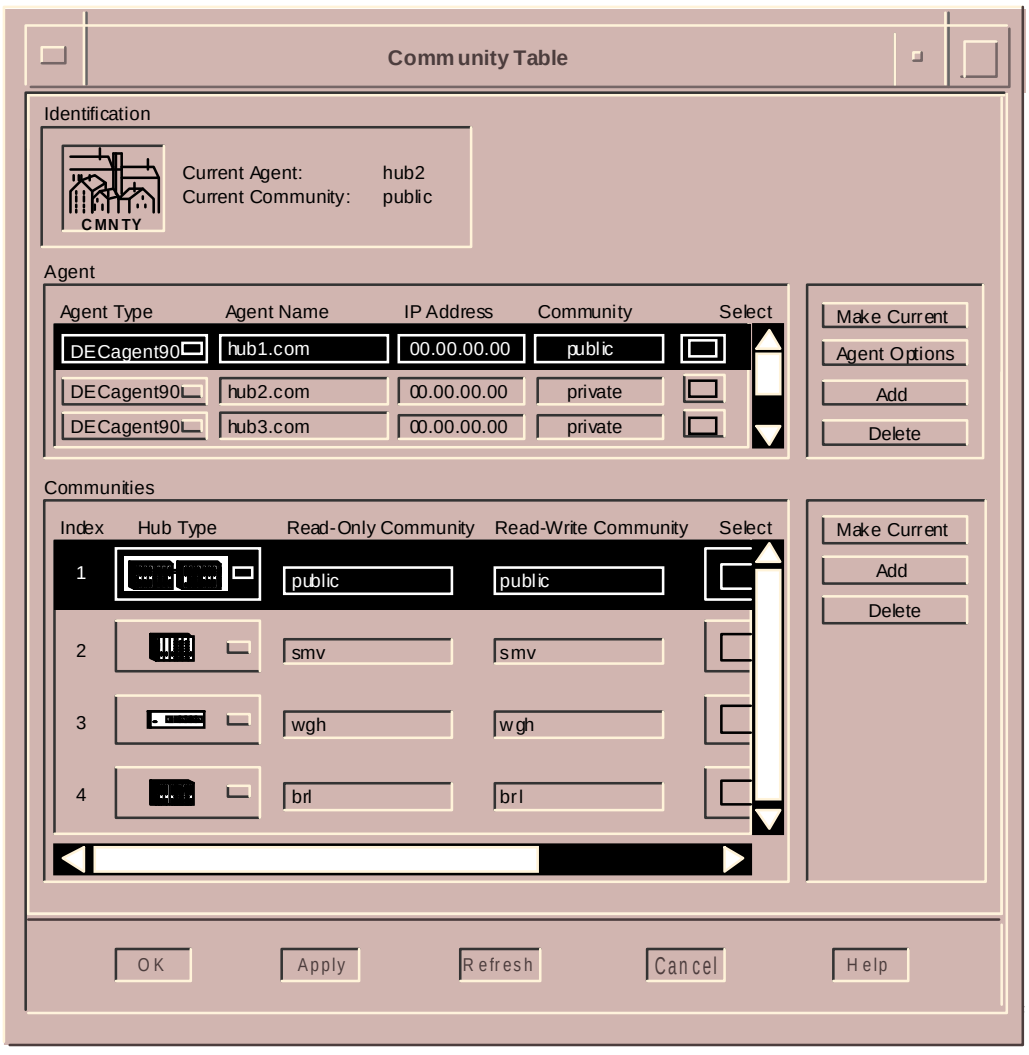
- Configuring a DECagent 90 as an SNMP agent for in-band or out-of-band management.
- Configuring the DEChub 900MS Hub Manager for in-band or out-of-band management.
- Configuring a network module's built-in agent.

Which Windows to Use

When adding agent information to HUBwatch, you use the Community Table window and the Add Agent window.

Community Table Window

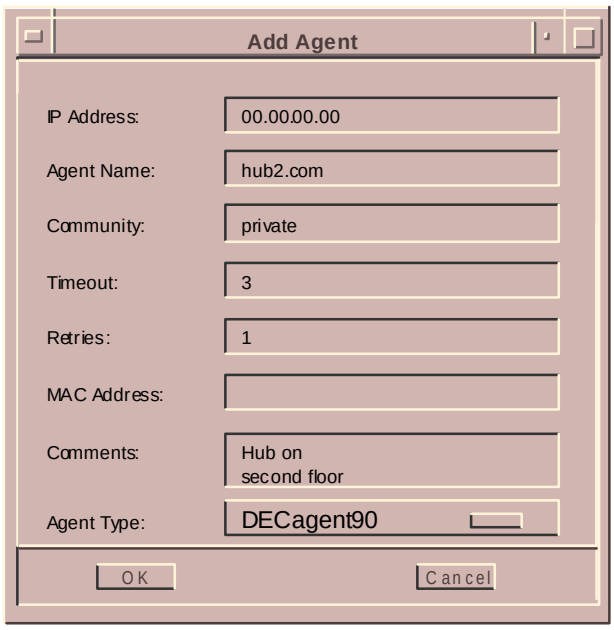
This is the Community Table window. The Agent List box shows which agents are configured for the hub (the entries in the agent file). Depending on the operating system you use, this window may appear slightly different on your screen.



LKG-7426-94F

Add Agent Window

This is the Add Agent window that you use to add agent information to the agent file. Depending on the operating system you use, this window may appear slightly different on your screen.



LKG-8022-94F

Steps: Adding Agent Information

Do the following to add agent information to HUBwatch.

Step	Action
1	From the Hub Front Panel, click on Community in the menu bar.
	Result: The Community menu appears.
2	Click on the Manage Table option.
	Result: The Community Table window appears. If you have not yet used the Community Table window to supply agent information, the fields in the window will be blank.

Step	Action
3	Click on Add located next to the Agent List box. **Result**: The Add Agent window appears.
4	Supply the following information and click on OK to execute the change (unless indicated information is optional): • IP address (required field). • Agent name. • Community name to use in HUBwatch SNMP requests; the default is "public." • A timeout value; the length of time that the network management station (NMS) waits for a response after sending a request to the agent. The default is 5 seconds. • The number of retries; the number of times that the NMS resends the request to the agent after a timeout. The default is 1. • MAC address, required if using the following: – DECagent 90 if installed in a DEChub 900MS. – DECbridges 90 and 90FL if installed in a DEChub 900MS. – DECbrouters 90T1, 90T2, and 90T2A if not managed as standalone modules. – DECservers 90L and 90L+ if installed in a DEChub 900MS. – DECservers 90TL and 90M, if not managed as standalone modules. – DECserver 900TM, if not managed as a standalone module (recommended, not required). Look for the MAC address on the module's front or rear bezel (see the module's owner's manual for exact location). The MAC address is a unique 48-bit binary number (usually represented as a 12-digit hexadecimal number) encoded in a device’s circuitry to identify it on a local area network. • Comments on the agent (for example, its physical location). • Agent type (for example, a DECagent 90). **Result**: The Add Agent window closes, HUBwatch adds the information to the agents file, and the Hub Front Panel remains displayed.

More Information

See the online help and the *HUBwatch Use* book for additional information about using the Community Table window and the Add Agent window.

Adding Module Information

When to Use

Add module information when configuring:

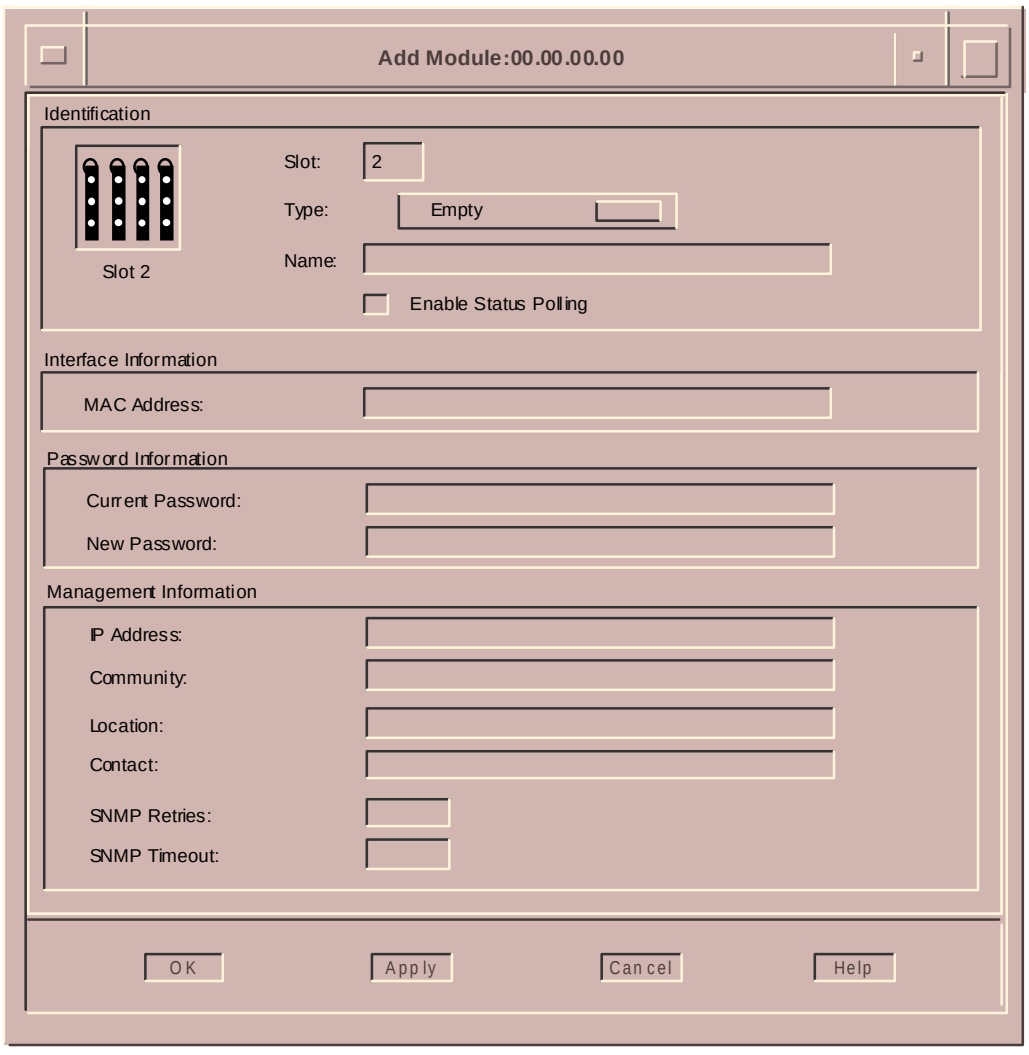
- DECbridges 90 and 90FL (not required if you install them in a DEChub 900MS with a Hub Manager configured).
- A DECserver 90L.
- Some DECservers 90L+ available prior to the release of HUBwatch Version 2.0. (If an installed DECserver 90L+ does not appear on the Hub Front Panel windows, you must supply the information manually. For a DECserver 90L+ that is autodiscovered, HUBwatch windows use the label 90L+2.)
- DECservers 90TL or 90M that are not running the DECserver Network Access Software.
- DECwanrouter 90 (to display it on the Hub Front Panel only; HUBwatch does not manage it).

What to Use

Use the Add Module window to add module information to HUBwatch.

Add Module Window

This is the Add Module window that you use to add module information to HUBwatch. Depending on the operating system you use, this window may appear slightly different on your screen.



LKG-7424-94F

Special Conditions

When adding module information, check for the following conditions:

- DECagent 90 is used as an SNMP agent.

  When you use a DECagent 90 as the SNMP agent, the Hub Front Panel window displays slots containing modules that are not autodiscovered as empty slots. Click on the empty slot where the non-autodiscovered module resides.

- DEChub 900MS Hub Manager is used as an SNMP Agent.

  If you are using a Hub Manager as an agent for a DEChub 900MS, do not click on an empty slot. In this case, the Hub Front Panel window displays slots containing modules that are not autodiscovered with an icon labeled "Unknown." Click on the slot containing the "Unknown" icon that corresponds to the module whose information you want to add.

- DECserver 90TL is not running the Digital Network Access Services software.

  Disable polling before adding a DECserver 90TL module that is not running the Digital Network Access Software (see *Configuring 90-Series DECservers* in this chapter).

Steps: Adding Module Information

Do the following to add module management information to HUBwatch.

Step	Action
1	From the Hub Front Panel window, click on the empty chassis slot where you want to add the module.
	Result: The module is highlighted.
2	From the Configuration menu, click on Add.
	Result: The Add Module window appears. The number of the selected slot appears on the window.
3	Click on Type.
	Result: A menu with a list of the available devices appears.

Step	Action
4	Click on the desired device type. **Result:** The window displays an icon and highlights the additional fields required to add the module to your hub configuration. Fields not required for a particular module are grayed out. The fields are: • *MAC Address* - The module's Ethernet address. • *Enable Status Polling* - Turns status polling on or off. If using a DECagent 90 as the module's agent, click on Check to enable polling. • *Current Password* - The password required to use out-of-band management to manage the module. • *IP Address* - The module's or the module's management agent's Internet Protocol address. • *Community* - The community name to which the module or the module's agent belongs. • *Location* - The module's physical location (for example Taylor Street LAN). • *Contact* - The name of the person responsible for maintaining the module. • *SNMP Retries* - The number of times that the network management station (NMS) resends the requests to the agent after a timeout. The default is 2. • *SNMP Timeout* - The length of time that the NMS waits for a response after sending a request to the agent. The default is 5 seconds.
5	Fill in the required fields (the fields not grayed out). **Result**: The Apply and OK buttons are highlighted.
6	Click on Apply or OK. **Result:** The Add Module window closes, and the module appears on the Hub Front Panel.

More Information

See the online help and the *HUBwatch Use* book for more information about using the Add Module window.

Configuring 900-Series Modules

Introduction

This section describes how to configure 900-series modules so that HUBwatch can manage them.

The DECserver 90TL, 90M, 900TM, or 900GM: These access servers require a different procedure. See *Steps: DECserver 900TM Configuration* in this section.

References

See the following for procedures related to configuring 900-series module.

For This Information...	See This Section in Chapter 5...
Configuring a Hub Manager	*Procedure: DEChub 900MS Hub Manager Configuration*
Adding agent entries to HUBwatch	*Adding Agent Information*
Installing a module in the IP Interface Slot	*Procedure: DEChub 900MS Hub Manager Configuration*
Configuring a DECserver's built-in SNMP agent	*Procedure: DECserver 90TL, 90M, 900TM, or 900GM Configuration*

Steps: 900-Series Module Configuration

Do the following to configure 900-series modules for HUBwatch management.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Will the module be the IP interface? • If yes, install it in the IP Interface slot. • If no, you are finished with the procedure.
Standalone module	1. Install the module in a DEChub ONE. 2. Configure the built-in agent. 3. Add an entry for the built-in agent by using the Add Agent window.

Steps: DECserver 900TM Configuration

Do the following to configure a DECserver 900TM for HUBwatch management.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Configure the module's built-in agent. 4. Add an entry for the module's built-in agent by using the Add Agent window.
Standalone module	1. Configure the module's built-in agent. 2. Add an entry for the built-in agent by using the Add Agent window.

Configuring a DECagent 90

Introduction

This section explains how to configure a DECagent 90 so that HUBwatch can manage it.

References

See the following for procedures related to configuring the DECagent 90.

For This Information...	See This Section in Chapter 5...
Adding agent entries to HUBwatch	*Adding Agent Information*
Using the Add Module window	*Adding Module Information*

Additional Reference: See the *HUBwatch Use* book for information about bridge management.

DECagent 90 Configuration

Do the following to configure the DECagent 90 so HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 90 or Digital stackable product	1. Install the module in slot 7 or 8 of an 8-slot DEChub 90 or slot 7, 8, 15, or 16 of a double DEChub 90. Install the module in the agent slot of a Digital stackable product. 2. Configure the DECagent 90. 3. Add an entry for the DECagent 90 by using the Add Agent window. 4. Will the DECagent 90 manage a repeater in a remote hub? • If no, you are finished with the procedure. • If yes, do the following: a. Install a DECbridge 90 or 90FL in the repeater's hub in slot 7 or 8 of DEChub 90, slot 7, 8, 15, or 16 in a double DEChub90, or the Bridge slot in a Digital stackable product. b. Add module information for the bridge by using the Add Module window. c. Set bridge hub management to on, if necessary, by using the Bridge Summary window.
Standalone module	1. Configure the DECagent 90. 2. Add an entry for the DECagent 90 by using the Add Agent window. 3. Will the DECagent 90 manage a repeater in a remote hub? • If no, you are finished with the procedure. • If yes, do the following: a. Install a DECbridge 90 or 90FL in the repeater's hub in slot 7 or 8 of DEChub 90, slot 7, 8, 15, or 16 in a double DEChub90, or the Bridge slot in a Digital stackable product. b. Add module information for the bridge by using the Add Module window. c. Set bridge hub management to ON, if necessary, by using the Bridge Summary window.

Configuring 90-Series DECbridges

Introduction

This section explains how to configure 90-series DECbridges so that HUBwatch can manage them.

Remote Repeaters Require a DECbridge

If you use a DECagent 90 to manage remote repeaters, install a DECbridge 90 or 90FL in the remote hub with the repeater.

References

See the following procedures related to configuring 90-series DECbridges.

For This Information...	See This Section in Chapter 5...
Configuring a Hub Manager	*Procedure: DEChub 900MS Hub Manager Configuration*
Configuring a DECagent 90	*Procedure: DECagent 90 Agent Configuration*
Adding agent entries to HUBwatch	*Adding Agent Information*
Using the Add Module window	*Adding Module Information*

Additional Reference: See the *HUBwatch Use* book for information about bridge management.

Steps: DECbridge 90 and 90FL Configuration

Do the following to configure a DECbridge 90 or 90FL so HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS that uses a Hub Manager.	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 4. • If no, configure the DECagent 90. 4. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 5. • If no, add an entry for the agent by using the Add Agent window. 5. Is the DECagent 90 installed in the same hub as the bridge module? • If yes go to step 6. • If no, do the following: a. Create a DECagent 90 standalone community for the bridge by using the Community Table window. b. Use the Add Module window to add the bridge to the DECagent 90 standalone community. 6. Associate the bridge with the DECagent 90. Do the following: a. Add an entry for the bridge's community by using the Add Agent window. Enter the module's MAC address along with the DECagent 90's IP address. b. Set bridge hub management to on, if necessary, by using the Bridge Summary window.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS that does not use a Hub Manager	Follow the procedure for the DEChub 90 or a Digital stackable product.
DEChub 90 or Digital stackable product	1. Does a configured DECagent 90 exist on the same LAN segment?. • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the DECagent 90 by using the Add Agent window. 3. Add the module information by using the Add Module window. 4. Set bridge hub management to on, if necessary, by using the Bridge Summary window.
Standalone module	1. Does a configured DECagent 90 exist on the same LAN segment?. • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the DECagent 90 by using the Add Agent window. 3. Create a DECagent 90 standalone community for the bridge. 4. Add the bridge to the DECagent 90 standalone community by using the Add Module window. 5. Associate the bridge with the DECagent 90. Do the following: a. Add an entry for the bridge's community by using the Add Agent window. Enter the module's MAC address along with the DECagent 90's IP address. b. Set bridge hub management to ON, if necessary, by using the Bridge Summary window.

Configuring 90-Series DECbrouters

Introduction

This section explains how to configure 90-series DECbrouters so that HUBwatch can manage them.

References

See the following for procedures related to configuring 90-series DECbrouters.

For This Information...	See This Section in Chapter 5...
Configuring a Hub Manager	*Procedure: DEChub 900MS Hub Manager Configuration*
Configuring a DECagent 90	*Procedure: DECagent 90 Agent Configuration*
Adding agent entries to HUBwatch	*Adding Agent Information*
Adding module information to HUBwatch	*Adding Module Information*
Configuring DECbrouter built-in agents as SNMP agents	*Procedure: DECbrouter 90T1, 90T2, or 90T2A Configuration*

Steps: DECbrouter 90T1, 90T2, and 90T2A Configuration

Do the following to configure a DECbrouter 90T1, 90T2, or 90T2A so that HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Configure the module's built-in agent. 4. Add an entry for the built-in agent by using the Add Agent window.
DEChub 90 or Digital stackable product	1. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add the agent by using the Add Agent window. 3. Configure the module's built-in agent. 4. Add an entry for the built-in agent by using the Add Agent window.
Standalone module	1. Configure the module's built-in agent. 2. Add an entry for the built-in agent by using the Add Agent window.

Configuring 90-Series DECrepeaters

Introduction

This section explains how to configure 90-series DECrepeaters so that HUBwatch can manage them.

> **Note**: If you install the DECrepeater 90C, 90FA, 90FL, 90T, 90T-16, or 90T+ in a DEChub 900MS and do not use a Hub Manager, you can manage the module with a DECagent 90, DECrepeater 90FS, or DECrepeater 90TS.

References

See the following for procedures related to configuring 90-series DECrepeaters.

For This Information...	See This Section in Chapter 5...
Configuring a Hub Manager	*Procedure: DEChub 900MS Hub Manager Configuration*
Configuring a DECagent 90	*Procedure: DECagent 90 Agent Configuration*
Adding agent entries to HUBwatch	*Adding Agent Information*
Adding module information to HUBwatch	*Adding Module Information*
Configuring DECrepeater built-in agents as SNMP agents	*Procedure: DECrepeater 90FS and 90TS Configuration*

Steps: DECrepeaters 90C, 90FA, 90FL, 90T, 90T-16, 90T+ Configuration

Do the following to configure a DECrepeater 90C, 90FA, 90FL, 90T, 90T-16, or 90T+ so that HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS that uses a Hub Manager	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS that does not use a Hub Manager	1. Do you have a DECrepeater 90FS or DECrepeater 90TS as your agent in the DEChub 900MS? • If yes, go to step 3. • If no, go to step 2. 2. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 3. • If no, configure the DECagent 90. 3. Does an entry for the agent exist in the Agent List box in the Community Table window? • If yes, go to step 4. • If no, add the agent by using the Add Agent window. 4. If your agent is a DECagent 90, is the DECagent 90 in the repeater's hub? • If yes, you are finished with this procedure. • If no, do the following: a. Install a DECbridge 90 or 90FL in the repeater's hub. b. Add DECbridge 90 or 90FL information to HUBwatch by using the Add Module window.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 90 or Digital stackable product	1. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add the agent by using the Add Agent window. 3. Is the DECagent 90 in the repeater's hub? • If yes, you are finished with this procedure. • If no, do the following: a. Install a DECbridge 90 or 90FL in the repeater's hub. Use slot 7 or 8 of DEChub 90 or slot 7, 8, 15, or 16 of a double DEChub 90. In a Digital stackable product, install the bridge in the bridge slot. b. Add DECbridge 90 or 90FL information to HUBwatch by using the Add Module window.
Standalone module	Not applicable. These DECrepeaters can operate as standalone modules; however, you cannot use HUBwatch to manage them.

Steps: DECrepeater 90FS and 90TS Configuration

Do the following to configure a DECrepeater 90FS or 90TS so that HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Will the module be the IP interface? • If no, you are finished with this procedure. • If yes, install it in the IP interface slot.
DEChub 90 or Digital stackable product	1. Install the module in slot 7 or 8 of an 8-slot DEChub 90 or slot 7, 8, 15, or 16 of a double DEChub 90. Install the module in the agent slot of a Digital stackable product. 2. Configure the module's built-in agent. 3. Add an entry for the built-in agent by using the Add Agent window.
Standalone module	1. Configure the module's built-in agent. 2. Add an entry for the built-in agent by using the Add Agent window.

Configuring 90-Series Access Servers

Introduction

This section describes how to configure 90-series access servers so that HUBwatch can manage them.

References

See the following for procedures related to configuring 90-series access servers.

For This Information...	See This Section in Chapter 5...
Configuring a Hub Manager	*Procedure: DEChub 900MS Hub Manager Configuration*
Configuring a DECagent 90	*Procedure: DECagent 90 Agent Configuration*
Adding agent entries to HUBwatch	*Adding Agent Information*
Adding module information to HUBwatch	*Adding Module Information*
Configuring access server built-in agents as SNMP agents	*Procedure: DECserver 90TL, 90M, 900TM, or 900GM Configuration*

Additional Reference: For information about creating communities, see the *HUBwatch Use* book.

Steps: DECServers 90L and 90L+ Configuration

Do the following to configure a DECserver 90L or 90L+ so that HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 4. • If no, configure the DECagent 90. 4. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 5. • If no, add an entry for the DECagent 90 by using the Add Agent window. 5. Is the DECagent 90 installed in the same hub as the DECserver? • If yes, go to step 6. • If no, do the following: a. Create an 8-slot hub DECagent 90 community for the access server by using the Community Table window. b. On the Hub Front Panel window, click on the slot that the access server occupies in the DEChub 900MS. c. Use the Add Module window to add the access server to the DECagent 90 community. 6. Add an entry for the access server's community by using the Add Agent window. Include the access server's MAC address and the DECagent 90's IP address. 7. Add module information to HUBwatch for any access servers 90L and 90L+ that were available before the HUBwatch V2.0 release by using the Add Module window.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 90 or Digital stackable product	1. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add the agent by using the Add Agent window. 3. Add module information to HUBwatch for any DECservers 90L and 90L+ that were available before the HUBwatch Version 2.0 release by using the Add Module window.
Standalone module	1. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add the agent by using the Add Agent window. 3. Create a DECagent 90 standalone community for the module. 4. Use the Add Module window to add the module to the DECagent 90 standalone community.

Steps: DECservers 90TL and 90M Configuration

Do the following to configure a DECserver 90TL or 90M so that HUBwatch can manage it.

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 900MS	1. Does the hub have a configured Hub Manager? • If yes, go to step 2. • If no, configure the Hub Manager. 2. Does an entry for the Hub Manager exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add an entry for the Hub Manager by using the Add Agent window. 3. Configure the module's built-in agent. 4. Add an entry for the module's built-in agent in the Agent List Box by using the Add Agent window. 5. Add module information for any DECservers 90TL and 90M that are not running the DECserver Network Access Software by using the Add Module window. **Important:** *Disable polling before adding the DECserver 90TL information.*

WHEN the Module Is Installed in a...	THEN Do This...
DEChub 90 or Digital stackable product	1. Does a configured DECagent 90 exist on the same LAN segment? • If yes, go to step 2. • If no, configure the DECagent 90. 2. Does an entry for the DECagent 90 exist in the Agent List box in the Community Table window? • If yes, go to step 3. • If no, add the agent by using the Add Agent window. 3. Configure the module's built-in agent. 4. Add an entry for the module's built-in agent by using the Add Agent window. Open the Add Agent window from the Community Table window. 5. Add module information for any DECservers 90TL and 90M that are not running the DECserver Network Access Software by using the Add Module window. Open the Add Module window from the Configuration pull-down on the Hub Front Panel window. **Important:** *Disable polling before adding the DECserver 90TL information.*
Standalone module	1. Configure the module's built-in agent. 2. Add an entry for the module's built-in agent by using the Add Agent window.

A

HUBwatch as an Add-On Application

Overview

Introduction

This appendix explains:

- How to run HUBwatch for OpenVMS as an add-on application to the POLYCENTER Network Manager platform.
- How to run HUBwatch for Windows as an add-on application to the HP OpenView platform.
- How to run HUBwatch for OSF/1 AXP as an add-on application to the POLYCENTER Manager on NetView for DEC OSF/1 AXP platform.
- How to run HUBwatch for Windows as an add-on application to the Novell NMS platform.
- How to configure alarms and events for HUBwatch for Windows as an add-on application.
- For information about ManageWORKS Workgroup Administrator, see *Step 9: Digital ManageWORKS Workgroup Administrator Option* in Chapter 1 of this book.

Launching HUBwatch for OpenVMS from POLYCENTER

Compatible DECmcc Versions

The instructions in this appendix also apply to DECmcc Version 1.2 and Version 1.3. To run HUBwatch from DECmcc Version 1.2, all DECmcc users need to modify their own MCC_RESOURCE.DAT files according to the instructions in MCC_SYSTEM:MCC_HUBWATCH.COM.

Steps: POLYCENTER Launch

Do the following to launch HUBwatch from the POLYCENTER Network Manager platform.

Step	Action
1	Enter the following command to invoke the POLYCENTER Network Manager software. `$ MANAGE/ENTERPRISE /INTERFACE=DECWINDOWS` **Result:** The POLYCENTER Map window appears.
2	Enter domain information. Do the following (these instructions assume you opened a new domain): a. Click on the File menu and choose an existing domain or open a new domain. b. Enter the domain name in the New Domain window (for example, Taylor Street) and click on OK. c. Return to the POLYCENTER Map window and click on the Lock icon in the menu bar to unlock the window. **Result**: The New Domain window appears.
3	Open the Add Entity - Enter Entity window. and do the following: a. Click on the Edit menu and choose Toolbox. b. Click on the SNMP icon. c. Click on the desired Hub icon. d. At the SNMP Entry box, enter the IP name of the hub and click on Apply. **Result:** The following occurs: a. The POLYCENTER Toolbox window appears. b. The Add Entity - Enter Entity Information window appears. c. The Hub icon is highlighted. d. A more detailed version of the Add Entity - Enter Entity Information window appears.

Step	Action
4	In the Add Entity window, do the following: a. Enter the IP address (for example, 12.14.213.56). b. Enter the Read Community Name (for example, public). c. Enter the Write Community Name (for example, public). d. Click on OK to apply the information. **Result:** The software applies the information.
5	Move the pointer to the POLYCENTER Map window and click mouse button 2 to populate the map. **Result**: POLYCENTER populates the map.
6	Click on the hub icon in the POLYCENTER Map window. **Result**: The Hub icon is highlighted.
7	Click on the Applications menu and choose HUBwatch. **Result:** The Hub Front Panel window appears; it may take several seconds. The Hub Front Panel window differs, depending on whether you entered the IP address of a DEChub 900 MultiSwitch (MS), a DECagent 90, or a standalone module. Refer to the *HUBwatch Use* book for pictures of the Hub Front Panel windows that appear for the DEChub 900MS and the DECagent 90.

Launching HUBwatch for Windows from HP OpenView

To start HUBwatch for Windows from the HP OpenView software, do the following.

Step	Action
1	Start the HP OpenView application.
2	Select Open from the File menu, and open a map file.
	Result: The Internetwork View window appears.
3	Double click on the icon of the network you want to manage.
	Result: The Network View window appears.
4	Double click on the HUBwatch icon for the hub or module that you want to manage.
	Result: The HUBwatch application starts and displays the hub or module you selected.

Launching HUBwatch for Windows from Novell NMS

To start HUBwatch for Windows from the Novell NMS software, do the following.

Step	Action
1	Start the Novell NMS application.
2	Select Open from the File menu; then select Segment Map from the popup menu.
	Result: The Open Segment Map dialog box appears.
3	Select a segment name and click on it.
	Result: A segment map appears.
4	Select the icon on the map for the hub or module you want to manage.
5	Select HUBwatch for Windows from the Tools menu.
	Result: The HUBwatch application starts and displays the hub or module you selected.

Launching HUBwatch for OSF/1 AXP From POLYCENTER NetView

The HUBwatch installation procedure that installs the POLYCENTER NetView files performs all the necessary steps to integrate the HUBwatch software with the POLYCENTER on NetView for DEC OSF/1 AXP application.

Refer to the *HUBwatch Use Guide* for details on how to launch HUBwatch in POLYCENTER NetView.

HUBwatch as Add-on Alarms and Events

To configure alarms and events:

1. Use the console to assign an IP address to the network hardware device that is to generate the traps.
    a. To configure the Hub Manager for a DEChub, refer to *Procedure: DEChub 900MS Hub Manager Configuration* in Chapter 5.
    b. To configure a network module, refer to the module installation manual.
2. Use the console to enter the IP address of the PC running the network management software in the trap address field of the Hub Manager or the module.
3. Refer to the documentation for the network management software under which HUBwatch is running for information on setting up alarms and traps.

B

HUBwatch for Windows and SLIP Protocol

Overview

In This Appendix

This appendix describes how to run HUBwatch with the SLIP protocol and how to exit from a SLIP session. This appendix includes the following topics:

- Running HUBwatch with a SLIP connection through an access server.
- Running HUBwatch with a SLIP connection to a DECagent 90.
- Running HUBwatch with a SLIP connection to a DEChub 900MS.

All SLIP Connections

Steps: All SLIP Configurations

Do the following for all SLIP configurations.

Step	Action
1	Connect your PC to a DECagent 90, a DEChub 900MS, or an access server that supports SLIP through a serial port on your PC or through a modem.
2	If you are running Windows, you must exit from Windows to set up for using SLIP.
3	Use the CD command from the DOS prompt to make your \HUBWATCH\IPSTACK directory the default directory. **Example:** `c: cd \hubwatch\ipstack`
4	Ensure that the [TCPIP] section of file PWTCP.INI includes the following line: `NetworkType = 2`
5	Enter the SETHOST terminal emulator command by using the following command: `c: sethost`

Using a SLIP Connection Through an Access Server

Introduction

This section explains how to create and exit from a SLIP connection through an access module that is installed in DEChub 900MS. The examples that follow use the Local> prompt displayed by DECservers 90TL, 90M, and 900TM. Your prompt may differ.

Steps: Connecting Through an Access Server

Do the following to run HUBwatch with a SLIP connection to an access server.

Step	Action
1	Go to the access server's prompt with one of the following methods: • If you are using a modem, when you have made the connection to the access server, press Return until you get the Local> prompt. • If your PC is directly connected to a SLIP access server through a serial port, press Return until you get the Local> prompt.

2	Check that the MTU value is 1000 or greater. At the Local> prompt, enter the following command:
	`Local> show port slip`
	Changing the MTU value: Enter the following command:
	`Local> change port slip MTU number`
	If the MTU value is too low, the SLIP connection will not work.

3	At the Local> prompt, enter the following commands.
	`Local> clear port slip host`
	`Local> change port slip host ip-address-of-your-pc`
	`Local> change port flow control disable`
	`Local> connect slip`
	The *ip-address* variable is in the form *d.d.d.d*, where *d* is an integer from 0 to 255.

4	Exit the SETHOST program by pressing Ctrl/F10. Enter the following command at the DOS prompt to start your network: `c: strtslip` If you like, you can test your network here by entering the Ping command with the IP address of a network station that is known to be in working order.
5	Enter the following command at the DOS prompt to start Windows: `c: win`
6	Start HUBwatch, following the instructions in the *Starting HUBwatch for Windows* section in Chapter 1. HUBwatch should run as it does under IP networks, except that it will be somewhat slower.

Steps: Exiting the SLIP Session

Do the following to exit from your SLIP session.

Step	Action
1	Exit software. Do the following: a. Exit from HUBwatch by selecting Exit from the File menu on the Hub Front Panel. b. Exit from Windows. For example, select Exit Windows from the Program Manager's File menu.
2	Enter the following command at the DOS prompt to stop your network: `c: stopnet`

3	Disconnect the SLIP connection. Do the following:
	a. Enter the following command at the DOS prompt to run the SETHOST program again:
	c: **sethost**
	b. Press F5 to enter a Break character. Your modem must be configured to pass the Break character to the other modem.
	c. Enter the following command at the Local> prompt to find the number of your SLIP session:
	`Local> show sessions`
	d. Enter the following command at the Local> prompt to disconnect your SLIP session:
	`Local> disconnect session n`
	The *n* variable is the number of your session.
	e. Enter the following command at the Local> prompt to disable the SLIP port:
	`Local> set port slip disable`
	f. Enter the following command at the Local> prompt to clear the SLIP address:
	`Local> clear port slip host`
	It is not enough to disable the SLIP port (step e). You must also clear the address of the SLIP host (step f). Clearing the address prevents routing problems that can occur if you use the same IP address later on a different server port.

4	If you are using a modem, enter the following command at the Local > prompt to log out: `Local> logout`
5	Press Ctrl/F10 at the Local> prompt to exit from the SETHOST program.

Using a SLIP Connection to a DECagent 90

Steps: Connecting with SLIP to a DECagent 90

Do the following to run HUBwatch with a SLIP connection to a DECagent 90.

Step	Action
1	Set up the Communications port. Do the following: a. From the SETHOST Main menu, press F3 to access the Setup menu. b. From the Setup menu, select Communications. c. From the Communications menu, select Network Communications Port. d. From the Networks Communications Port menu, select the Comm Port you are using. e. Select the speed for the Comm Port. The speed you select will be the baud rate for the SLIP connection. **Important:** Be sure that the speed you select matches the baud rate in the [SLIP] section of the file TCP.INI in your *hubwatch-path*\IPSTACK directory. f. From the SETHOST Main menu, press Return to access the DECagent 90 menu.
2	From the DECagent 90 menu, select Start SLIP Connection and do the following: a. Press Ctrl/F10 to exit from the SETHOST program. b. Enter the following command at the DOS prompt to start your network: c: **`strtslip`** c. If you like, you can test your network here by entering the Ping command with the IP address of a network station that is known to be in working order.
3	Start Windows. Enter the following command at the DOS prompt: **`c: win`**
4	Start HUBwatch, following the instructions in *Starting HUBwatch for Windows* in Chapter 1. HUBwatch should run as it does under IP networks except that it will be somewhat slower.

Steps: Exiting the SLIP Session

Do the following to exit from the SLIP session.

Step	Action
1	Exit from HUBwatch by selecting Exit from the File menu on the Hub Front Panel.
2	Exit from Windows. **Example:** Select Exit Windows from the Program Manager's File menu.
3	Enter the following command at the DOS prompt to stop your network: `c: stopnet`
4	Reset the DECagent 90.

Using a SLIP Connection to a DEChub 900MS OBM Port

Steps: Connecting with SLIP to a DEChub 900MS OBM Port

Do the following to run HUBwatch with a SLIP connection directly to a DEChub 900MS OBM port.

Step	Action
1	Configure DEChub 900MS for out-of-band management following the instructions in Procedure: DEChub 900MS Hub Manager *Configuration* in Chapter 5. **Important**: Be sure to use an IP address for the OBM port that is different from the PC's IP address.
2	From the DEChub 900MS Installation menu, set the OBM port speed. The speed you select will be the baud rate for the SLIP connection. **Important**: Be sure that the speed you select matches the baud rate in the [SLIP] section of the file TCP.INI in your *hubwatch-path*\IPSTACK directory.
3	Enter the following command at the DOS prompt to start your network: `c: strtslip` **Test Your Network:** You can test your network here by entering the Ping command with the IP address of a network station that is known to be in working order.
4	Enter the following command at the DOS prompt to start Windows: `c: win`
5	Start HUBwatch, following the instructions in the *Starting HUBwatch for Windows* section in Chapter 1. HUBwatch should run as it does under IP networks, except that it will be somewhat slower.

Steps: Exiting the SLIP Session

Do the following to exit from the SLIP session.

Step	Action
1	Exit from HUBwatch by selecting Exit from the File menu on the Hub Front Panel.
2	Exit from Windows. **Example:** Select Exit Windows from the Program Manager File menu.
3	Enter the following command at the DOS prompt to stop your network: `c: stopnet`

C

HUBwatch for Windows with a PATHWORKS Network

Overview

In This Appendix

This appendix contains instructions for those who will be using HUBwatch with a PATHWORKS network.

Using HUBwatch with PATHWORKS

Introduction

To use HUBwatch with a PATHWORKS network, you perform setup tasks first. There are additional tasks to perform if you plan to manage DECbrouters on a PATHWORKS network.

Setting Up Your TCP/IP Network with PATHWORKS

If you are running a TCP/IP network with PATHWORKS Version 5.x, no special instructions are needed for running HUBwatch. Make sure, however, that you have the TCP/IP network running before you start HUBwatch.

Steps: Setting Up Your DECnet Version 5.x Network with HUBwatch TCP/IP Stack

If you are running a DECnet network with PATHWORKS Version 5.x, do the following.

Step	Action
1	Use the HUBwatch installation procedure to install an IP (NDIS) network. **Additional Information:** See, step 7 in *Installing Hubwatch for Windows* in Chapter 1.
2	Enter the following command at the DOS prompt, before starting HUBwatch: `c: hubwatch-drive:hubwatch-path\ipstack\strtndis` You are now ready to start HUBwatch.

Steps: Setting Up Your DECnet Version 4.x Network with HUBwatch TCP/IP Stack

If you are running a network with PATHWORKS Version 4.1, do the following.

Step	Action
1	Use the HUBwatch installation procedure to install an IP (NDIS) network **Additional Information:** See, step 7 in *Installing Hubwatch for Windows* in Chapter 1.

2	Enter the following commands at the DOS prompt, before starting HUBwatch:
	`c: pathworks-drive:pathworks-path\stopnet`
	`c: hubwatch-drive:hubwatch-path\ipstack\strtndis`

Setting Up PATHWORKS for a SETHOST/TELNET Console Session

You need to install HUBwatch for Windows with the Network Option to use a Sethost Telnet Session. See Chapter 1, *Step2: Selecting the Installation Option*, Option 2 and Option 3.

D

HUBwatch for Windows Installation Troubleshooting

Overview

Introduction

This appendix describes steps to take if HUBwatch for Windows will not start when you use the methods described in *Starting HUBwatch for Windows* in Chapter 1 or in Appendix B for running HUBwatch with SLIP.

If HUBwatch does not start, first check that your network is up and the hub or module to which you are trying to connect is in working order. If HUBwatch still does not start, check the HUBwatch installation.

In This Appendix

This appendix includes the following topics:

- Checking the network connection to the hub or module.
- Checking the HUBwatch installation.
- Checking the NDIS network installation.
- Checking the SLIP network installation.
- Checking the setup for a non-Digital network interface card.
- Checking the HP OpenView setup.

Checking the Network Connection to the Hub or Module

Steps

Do the following if HUBwatch does not start.

Step	Action
1	Ensure that you have the correct IP address and community name of a DECagent 90, DEChub 900 MultiSwitch, or standalone module on the network. Check with your network administrator.
2	Attempt to start HUBwatch again, using a correct IP address and community name.
3	If HUBwatch still does not start, use the Ping command to test whether your network is up and the object you are trying to connect to is in working order.
4	Use the CD command to make your \HUBWATCH\IPSTACK directory the default directory. **Example:** `c: cd \hubwatch\ipstack`

5	Enter the following command at the DOS prompt:
	`c: ping ip-address`
	An *ip-address* is of the form *d.d.d.d*, where *d* is an integer from 0 to 255.
	Example:
	`c: ping 00.00.00.00`

6	If the Ping command is successful, check that the HUBwatch installation procedure installed HUBwatch properly. See Checking the HUBwatch Installation in this chapter. If the network is not running, you receive a message that you were unable to connect to the object. If the network was installed by the HUBwatch installation procedure, check that the network was installed properly. • See Checking the NDIS Network Installation in this chapter, if you installed an NDIS network. • See Checking the SLIP Network Installation in this chapter, if you installed SLIP. • See Checking an "Other" Network Interface Card Setup in this chapter, if you are using an "other" network interface card that is not in the list in Step 7 in the section Installing HUBwatch for Windows in Chapter 1. If the network is running but the hub or module you specified in the Ping command is not operating properly, you receive a message that the object did not respond. In that case, see the hardware manual for the hub or module.

Checking the HUBwatch Installation

Steps

Do the following to check the HUBwatch installation.

Step	Action
1	Ensure that the following files are in your top-level HUBwatch installation directory (the installation procedure places these in C:\HUBWATCH by default). • System files: – HUB_MSG.MSF – HUBWATCH.EXE – HUBWATCH.INI – HUBWATCH.ICO – HW_CONF.DAT – HW_MIB.DAT – QUESTION.TXT – READ_ME.TXT – HWAN3.DLL – HWTR.DLL – HWDOS.PIF

Step	Action
1 (cont)	• Help files: – about.hlp – agentwin.hlp – atmman.hlp – atmwin.hlp – bridman.hlp – bridwin.hlp – brutman.hlp – brutwin.hlp – cfg_list.hlp – conman.hlp – conwin.hlp – frontwin.hlp – gigawin.hlp – gigman.hlp – glossary.hlp – howto.hlp – hubload.hlp – lanman.hlp – menu.hlp – menus.hlp – relinfo.hlp – reptman.hlp – reptwin.hlp – snmpman.hlp – switch.hlp – termman.hlp – termwin.hlp – menus.hlp – tok_man.hlp – tok_win.hlp – trbl_gig.hlp – trouble.hlp

Step	Action
2	Ensure that the HUBwatch Agent file, HW_AGENT.DAT, is in the directory you selected for your user data file. The installation procedure places this file in directory \USERDATA, under your top-level HUBwatch directory, by default.

3	Ensure that the following lines have been added to your AUTOEXEC.BAT file *before* the command, if any, that starts windows (the WIN command).
	`SET HUBWATCH_LIBRARY = drive:\path\user-data-directory`
	`SET HUBWATCH_HUBLOADER = drive:\hubload-directory-path`
	`SET WSAVERS=winsock.dll-version-number`
	Example:
	`set hubwatch_library = c:\nets\hubwatch\userdata`
	`set wsavers=1.1`

4	If you used the HUBwatch installation procedure to install your network, ensure that you have the directory \IPSTACK under your top-level HUBwatch directory. Enter the following command at the DOS prompt. `c: dir \path-to-hubwatch-directory\IPSTACK`

Checking the NDIS Network Installation

Steps

Do the following to check whether the network is properly installed if you used the HUBwatch installation procedure to install an NDIS network.

Step	Action
1	Does the subdirectory \IPSTACK in your HUBwatch directory contain the following files? • PWTCP.INI • STRTNDIS.BAT • PROTOCOL.INI. • WINSOCK.DLL • If yes, go to step 2. • If no, move the files from their current location to the subdirectory \IPSTACK.

Step	Action
2	Ensure that the contents of PWTCP.INI include the following lines, in the indicated sections. The parameter names are case sensitive.

```
[TCPGLOBAL]
  UserName = user-name
  HostName = pc-name
  NetFiles = drive:\path\IPSTACK
[TCPIP]
  IPAddress = pc-ip-address
  SubnetMask = subnet-mask
  DefaultGW0 = default-gateway-ip-address
  NetworkType = network-type-identifier
  TCPMaxSock = 8
  UDPMaxSock = 10
[DNR]
  NameServer0 = first-name-server-to-query-ip-address
  Domain = local-domain-ip-name
```

- An *ip-address* or a *subnet-mask* is of the form *d.d.d.d*, where *d* is an integer from 0 to 255.
- *network-type-identifier* is 0 for Ethernet, 2 for SLIP.

Example:

```
[TCPGLOBAL]
UserName = d_dinant
HostName = daves_pc
NetFiles = c:\hubwatch\ipstack
[TCPIP]
IPAddress = 00.00.00.00
SubnetMask = 00.00.00.00
DefaultGW0 = 00.00.00.00
NetworkType = 0
[DNR]
NameServer0 = 00.00.00.00
Domain = dod.xxx.com
```

Step	Action
3	Ensure that the contents of STRTNDIS.BAT include the following lines. (The REM lines are not included in STRTNDIS.BAT. They appear here only, for explanatory purposes.) *hubwatch-drive*: CD *path-to-hubwatch-directory*\IPSTACK SET PCSA = *hubwatch-drive*:*path-to-hubwatch-directory*\IPSTACK LD PROTMAN.DOS /i:*hubwatch-drive*:*path-to-hubwatch-directory*\IPSTACK REM the next commands save the current path in IPSTACK\OLDPATH.BAT IF %PATH% == "" GOTO no_path PATH > *hubwatch-drive*:*path-to-ipstack*\OLDPATH.BAT GO TO path_done :no_path ECHO SET PATH => *hubwatch-drive**path-to-ipstack*\OLDPATH.BAT :path_done SET PATH = %PCSA%,%PATH% REM end of commands for saving the current path LD *ndis-network-card-driver* dllndis netbind schk/NDIS tcpip REM the following two lines are required for TELNET tn bapi **When you change network cards:** If you change the network card and use the installation program to modify your network parameters, check the STRTNDIS.BAT file to be sure that the line that loaded the previous driver begins with REM, as follows. rem ld *previous-network-card-driver*

Step	Action
	STRTNDIS.BAT Example:

```
c:
cd \hubwatch\ipstack
set PCSA = c:\hubwatch\ipstack
ld protman.dos /i:c:\hubstack\ipstack
if %path% == "" goto no_path
 path >c:\hubwatch\ipstack\oldpath.bat
 goto path_done
:no_path
echo set path =>c:\hubwatch\ipstack\oldpath.bat
:path_done
SET PATH=%PCSA%;%PATH%
ld ewrk3.dos
dllndis
netbind
schk/NDIS
tcpip
tn
bapi
```

4 Ensure that the protocol file appropriate to your network card was copied into file PROTOCOL.INI. Depending on the network option you selected at installation, the installation procedure copies the contents of file `IPSTACK\network-card-selected.PRO` to PROTOCOL.INI.

5 Ensure that the file SYSTEM.INI in your WINDOWS directory is edited as follows:

- In the [386Enh] section, the NETWORK = *command* is as follows:
  `network = *dosnet,*vnetbios,decpw.386`
- If HUBwatch Version 1.0 was installed on your PC, the DEVICE VPKTDRVR.386 command, if present, will begin with a semicolon, to comment the line out, as follows:
  `;device vpktdrvr.386`

Step	Action

6	Ensure that your AUTOEXEC.BAT file is edited as follows.
	• It includes the following line, *before* the command, if any, that starts WINDOWS (the WIN command).
	`set WSAVERS=1.1`
	• If you added a network startup command to AUTOEXEC.BAT after using the HUBwatch installation procedure to install the network, the following line must appear *before* the command, if any, that starts WINDOWS:
	`strtndis`
	• If HUBwatch Version 1.0 is installed on your PC and you are running a packet driver, the line loading EWRK3.DOS or DEPCA.DOS will begin with REM.
	Example:
	`rem ld ewrk3.dos`
	Important: If the network driver used with HUBwatch Version 1.0 was not ewrk3.dos or depca.dos, the installation procedure cannot automatically add REM to the LD line for you. It will be necessary for you to add this yourself.

7	Ensure that your CONFIG.SYS file is edited as follows.
	• If HUBwatch Version 1.0 was installed on your PC and you are running a packet driver, the following DEVICE command will begin with REM.
	`rem device = netdev.sys`
	• If HUBwatch Version 1.0 was installed on your PC and you are running an NDIS network, the following DEVICE commands will begin with REM.
	`rem device = protman.sys`
	`rem device = dis_pkt.gup`
	`rem device = netdev.sys`
	• If HUBwatch Version 1.0 was installed on your PC and you are running an NDIS network, CONFIG.SYS will contain one of the following DEVICE commands beginning with REM:
	`rem device = ewrk3.dos`
	`rem device = depca.dos`
	Important: If the NDIS driver used with HUBwatch Version 1.0 was not ewrk3.dos or depca.dos, the installation procedure cannot automatically add REM to the DEVICE line for you. It will be necessary for you to add this.

8	Ensure that you are not trying to run DECnet and HUBwatch at the same time, unless you are running PATHWORKS Version 5.0. If you are running PATHWORKS Version 4.0, enter the following commands at the DOS prompt before starting HUBwatch.
	`c:` ***`pathworks-path`***`\stopnet`
	`c:` ***`hubwatch-path`***`\strtndis`

Checking the SLIP Network Installation

Steps

Do the following to check whether your Digital IP network is properly installed if you used the HUBwatch installation procedure to install your SLIP network.

Step	Action
1	Ensure that subdirectory \IPSTACK in your HUBwatch directory contains the following files: • PWTCP.INI • STRTSLIP.BAT • WINSOCK.DLL
2	Ensure that your AUTOEXEC.BAT file includes the following line *before* the command, if any, that starts WINDOWS (the WIN command): `set WSAVERS=1.1`
3	Ensure that the contents of file STRTSLIP.BAT include the following lines: *hubwatch-drive*: CD *path-to-hubwatch-directory*\IPSTACK SET PCSA = *hubwatch-drive*:*path-to-hubwatch-directory*\IPSTACK SAVE SCHK.EXE /NDIS DLLASYNC.EXE TCPIP TN.EXE BAPI.EXE **Example:** c: cd \nets\hubwatch\ipstack set pcsa =c:\nets\hubwatch\ipstack save schk /ndis dllasync tcpip tn.exe bapi.exe
4	Ensure that the [TCPIP] section of file PWTCP.INI includes the following line: `NetworkType = 2`

Step	Action
5	Ensure that the [SLIP] section of file PWTCP.INI includes the following lines: `CommPort = COM`*`n`* `Speed =` *`speed`* `ModemControl = no` • The *n* variable is the number of the COM port you are using for your SLIP connection. The default is COM1. • The *speed* variable is the baud rate your SLIP connection is using. The default is 9600.

Checking an "Other" Network Interface Card Setup

Introduction

If you used the HUBwatch installation procedure to install your network and chose Other as the network interface card type, you need to check that your PC is properly set up for the network card.

Steps

Do the following to check your network interface card setup.

Step	Action
1	Ensure that the file *hubwatch-path*\IPSTACK\STRTNDIS.BAT includes the following line: `LD` *`your-ndis-network-card-driver`* The name of the driver should be the name you supplied during the installation procedure when you selected Other as the card type. If you change the network card and use the installation program to modify your network parameters, check the STRTNDIS.BAT file to be sure that the line that loaded the previous driver begins with REM**,** as follows: `rem ld` *`previous-network-card-driver`*
2	Ensure that the protocol file appropriate to your network card was copied into file *hubwatch-path*\IPSTACK\PROTOCOL.NIC.
3	Before starting HUBwatch, start your network with the following command: `c:` **`strtndis`**

PROTOCOL.INI File Description

Your network card manufacturer supplies the network device driver and protocol file for your network card. The HUBwatch installation copies the contents of the protocol file into PROTOCOL.NIC. The HUBwatch installation includes a template file for the PROTOCOL.INI called PROTOCOL.TMP. Manually merge the PROTOCOL.NIC file into PROTOCOL.TMP, and save the file as PROTOCOL.INI.

PROTOCOL.INI File Guidelines

If you have trouble starting HUBwatch, check the PROTOCOL.INI file for the following:

- A [DATALINK] section exists. This section contains the settings for the network card. If you change any of these settings, edit the protocol.ini file to reflect these changes.
- All BINDINGS statements contain the device driver name as it appears in the name of the device driver section (usually the name of the device driver's executable file).
- A section exists for the device driver. The name of the section, appearing in brackets ([ ]) is usually the name of the device driver's executable file.
- The DRIVERNAME line in the device driver section contains the name as specified in your network card documentation. This name is usually in uppercase and usually ends with a dollar sign ($). This value is case sensitive; add it to the file exactly as specified in the documentation.
- The correct IRQ value is used. Some network cards do not automatically select an unused IRQ when installed. If you receive an IRQ error when trying to start HUBwatch, specify the correct IRQ in the file (see your network card documentation to determine how to specify the IRQ).

PROTOCOL.INI Example

This is an example of a PROTOCOL.INI file.

```
[protocol manager]
    DRIVERNAME  = PROTMAN$
[DATALINK]
    DRIVERNAME  = DLL$MAC
    LG_BUFFERS  = 14
    SM_BUFFERS  = 6
    OUTSTANDING = 32
    BINDINGS    = EWRK3.DOS
    DECPARM     = C:\HUBWATCH\
[EWRK3.DOS]
    DRIVERNAME = EWRK3$
    IOADDRESS = 0x300
    RAMADDRESS = 0xD000
    MEMORYMODE = 2
    INTERRUPT = 5
    DIAGNOSTIC = 0
```

Checking the HP OpenView Setup

HUBwatch Does Not Launch From HP OpenView

If you receive error messages when you try to start HUBwatch from HP OpenView, increase the UDPMaxSock value in the [TCPIP] section of the PWTCP.INI file.

E

Modules That HUBwatch Manages

Manageable Modules

In This Appendix

This appendix lists the network modules that you can manage using HUBwatch, followed by those that you cannot manage with HUBwatch.

Modules That HUBwatch Manages

HUBwatch Version 4.0 can manage all 90-series modules and the following 900-series modules:

- DECbridge 900MX.
- DECconcentrator 900MX.
- DECrepeaters 900FP, 900GM, and 900TM.
- DECserver 900TM.
- DECswitches 900EE and 900EF.
- PEswitch 900TX.
- RoamAbout Access Point.
- DECrepeater 90T-16.
- DECconcentrator 900TH.
- DECserver 900GM.
- DECrepeater 900TL.
- DECrepeater 900FL.
- DECrepeater 900SL.
- DECmau 900TL.

- DECmau 900TH.
- PORTswitch 900TP.
- PORTswitch 900CP.
- PORTswitch 900FP.

Modules Managed Through Other Applications Launched by HUBwatch

- DECpacketprobe 90. If you double click on the module, HUBwatch attempts to bring up Probewatch, if installed.
- DECpacketprobe 900RR. If you double click on the module, HUBwatch attempts to bring up Probewatch, if installed.
- RouteAbout Access 1. If you double click on the module, you start a telnet session.
- RouteAbout. If you double click on the module, you start a telnet session.

Index

D

E

F

G

H

I

L

M

N

O

P

R

S

T

V

W