

Software Product Description

PRODUCT NAME: HUBwatch for OpenVMS VAX, Version 3.1

SPD 45.74.04

DESCRIPTION

HUBwatch for OpenVMS VAX is a layered product on OpenVMS VAX that is designed to manage Digital's DEChub family of products. You can install in one of two ways:

- As an add-on application to POLYCENTER products for OpenVMS VAX
- As a standalone application with OpenVMS VAX, DEC TCP/IP Services for OpenVMS VAX or TGV MultiNet®, Bookreader, and OpenVMS VAX DECwindows Motif®

The HUBwatch application is a flexible SNMP management tool that runs in the Motif windows environment. The graphical user interface (GUI) allows you to configure DEChubs and GIGAswitch, and to view the status and activity of Hub modules and GIGAswitch components. Award winning context-sensitive help is available on every screen.

HUBwatch for OpenVMS VAX V3.1 supports these new DEChub modules:

PEswitch 900TX	DECrepeater 90TS
DECrepeater 90T+	DECswitch 900EE
GIGAswitch FGL4	DECswitch 900EF
RoamAbout Access Point	

You invoke the HUBwatch application either by selecting an icon on a POLYCENTER network map or as a standalone application. A DECwindows Motif window displays the front panel view of the selected device.

The Hub Front Panel window display includes the hub configuration and status of each module and module port. HUBwatch for OpenVMS VAX incorporates both a Physical and Logical hub front panel view. The Physical View depicts an exact representation of the hub's front panel. The Logical Hub View provides the same technical data, but uses a standard module template with labels and icons to distinguish module types. Both views, physical and logical, provide for access to hub module management windows and options.

To access hub module management windows, you "double click" on a module in the Hub Front Panel window. Both the graphical Physical and Logical hub views have "hot spots," such as the port connectors. Another window opens when you click on hot spots, containing information and controls that are specific to that module or port.

HUBwatch uses SNMP to manage the DEChub 900MS, DEChub 90, DEChub One, and GIGAswitch products. These products include:

DECrepeater 90C	DECserver 90L	DECbridge 90
DECrepeater 90T	DECserver 90L+	DECbridge 90FL
DECrepeater 90T+	DECserver 90TL	DECbridge 900MX
DECrepeater 90FA	DECserver 90M	DECswitch 900EE
DECrepeater 90FL	DECserver 900TM	DECswitch 900EF
DECrepeater 90FS	DECagent 90	DECbrouter 90T1
DECrepeater 90TS	DEChub 900MS	DECbrouter 90T2
DECrepeater 900GM	GIGAswitch/FDDI	DECbrouter 90T2A
DECrepeater 900TM	PEswitch 900TX	DECconcentrator 900MX
DECrepeater 900FP	RoamAbout Access Point	

HUBwatch uses SNMP agents to manage the DEChub and GIGAswitch products. An SNMP Agent is an entity in a hardware device that executes SNMP requests. The following hardware devices contain integral SNMP Agents that HUBwatch manages.

DEChub 900MS	DECrepeater 900TM
DECagent 90	DECrepeater 900GM
DECserver 90TL	DECrepeater 900FP
DECserver 90M	DECrepeater 90FS
DECserver 900TM	DECrepeater 90TS
DECswitch 900EF	DECbrouter 90T1, 90T2, 90T2A
DECswitch 900EE	GIGAswitch/FDDI
DECbridge 900MX	RoamAbout Access Point
PEswitch 900TX	DECconcentrator 900MX

HUBwatch manages SNMP agents that are identified in the HUBwatch Agents file. The Agent Summary window allows you to add and delete SNMP agents and modify operating information for the Agent.

Management of a DEChub 90 requires a DECagent 90 on the LAN, and a bus master services module in the DEChub 90. A bus master services module may be a DECbridge 90, DECbridge 90FL or DECagent 90 running V2.0 firmware. Using bus master services, DEChub 90 slot information can be displayed through HUBwatch.

The DECagent 90 SNMP agent is required to provide the SNMP interface between HUBwatch for DEChub 90 modules installed in a DEChub 90. The HUBwatch program displays the hub configuration on the Front Panel View, showing the status of modules and ports at a glance. HUBwatch uses the information in the DECagent 90's database to display hub configurations.

Basic management of the DECagent 90 is also available through its setup port. The setup port of the DECagent 90 further enables the user to turn DEC repeater 90 ports on and off, and remote MOP management of DECbridges, DECservers, and DEC repeater 90s (through a DECbridge). MOP management is not available for the DEC repeater 90FS or 90TS. The DECagent 90 setup can also be accessed via a Serial Line IP (SLIP) connection.

Management of the DEChub 900MS requires an IP Services module to be installed and identified in the DEChub 900MS. Modules that currently provide IP Services are:

DEC repeater 90TS	DECswitch 900EF
DEC repeater 90FS	DECswitch 900EF
DEC repeater 900TM	PEswitch 900TX
DEC repeater 900FP	DECconcentrator 900MX
DEC repeater 900GM	DECbridge 900MX

You can use either a "90 Style" or "900 Style" to manage DEC repeater 90 90C, 90T, 90T+, 90FA and 90FL modules installed in a DEChub 900MS. "90 Style" management emulates DEChub 90 management, and requires a DECagent 90 and bus master services. "900 Style" management uses the IETF compliant MIBs and the DEChub 900MS Hub Manager. HUBwatch screens supporting the IETF compliant MIBs are displayed, but the non-applicable functions for the particular DEChub 90 repeater module are disabled. No additional management features are available for the DEChub 90 repeater modules managed with "900 Style", but the requirement of the DECagent 90 and bus master services is eliminated.

DEChub One, or standalone, management is limited to those products with integral SNMP management agents, and to the DECbridge 90, DECbridge 90FL and DECserver 90L+, providing there is a DECagent 90 on the same extended LAN.

The following modules are displayed with a front bezel only. No module management is available for these products.

DECwanrouter 90	DECmau 900TL
MUXserver 90	DECrepeater 900TL
DECpacketprobe 90	DECrepeater 900SL

HUBwatch manages the DECbrouter 90 by displaying a module summary screen and affording the user an ability to create a TELNET session to the device.

Full management of modules is available through the Module Summary and associated detail level screens. In general, DEChub module management incorporates a Module Summary screen, and one or more detail level screens. The Summary screen displays administrative information and summary operational status of the module. The user may enter some customized descriptive information, such as location. Some modules display summary operations data, such as traffic summary data. Access to detail level screens is available by double clicking on the appropriate port or button.

Full graphical management of the DEChub 900MS is also available through its Out-of-Band port. The Out-of-Band management port on the DEChub 900MS requires SNMP to be run over a SLIP (Serial Line IP) connection. The SLIP connection is established by connecting a terminal server that supports SLIP, such as the DECserver 900TM, to the DEChub 900MS. A SLIP connection from the terminal server port to the out-of-band port on the DEChub 900MS provides the necessary communications path. HUBwatch can communicate out-of-band through the terminal server, which forwards the SNMP packet through its SLIP port to the Hub Manager. HUBwatch for Windows V2.0 and higher, a companion software product, also provides a SLIP networking capability for MS@-Windows™ users.

The addition, deletion and modification of communities is accomplished in the Community Table window.

Using the DECagent 90, 1 to 64 communities can be managed, one of which will always be the community in which the DECagent 90 resides. However, practical limits are much lower and are performance dependent. For hubs that contain only bridge and repeater modules, Digital recommends that there be one DECagent 90 for every 16 single hubs or every 8 double hubs. For hubs that contain terminal servers, the maximum number of modules managed by one DECagent 90 should not exceed 64.

The DEChub 900MS Hub Manager restricts communities to the local DEChub 900MS backplane. A single hub can have one to nine communities. Modules installed in a DEChub 900MS that have their own SNMP agent would also be assigned a unique community name.

The DEChub 900MS has multiple flexible channels that can be used to create independent LAN segments. HUBwatch allows you to create and delete the LAN segments from the LAN Interconnect window. LAN segments are assigned a name, and technology type, using a menu. HUBwatch Version 3.1 supports the creation and deletion of additional Ethernet and FDDI LAN segments. At this time, available DEChub 900 modules only use 6 Ethernet flexible channels, and the ThinWire channel.

Modules or ports may be connected to different LAN segments by "dragging" (using the mouse) the desired connection to the appropriate LAN segment. Safeguards are implemented to prevent inappropriate LAN connections. Modules with the capability to interconnect more than four ports (for example, the DECswitch 900EF) have an associated LAN Interconnect Expanded View screen to display and connect all ports. The Station Configuration View is used to configure ports between the front panel and the DEChub backplane. The Grouping View is used with the DECrepeater 900FP to group ports onto different LANs.

"Find Address" and "Find Duplicate Addresses" are functions that search across all Agents defined in the HUBwatch Agents file for stations connected to a managed Ethernet repeater.

DECbridge 900MX, DECswitch 900EF and DECswitch 900EE MAC Address and protocol filtering and forwarding management are performed on detail views available from the Bridge Summary Screen.

Alarmed Agents that the HUBwatch alarms software can monitor may be specified for Trap conditions. Traps occur when the module's firmware monitors the hardware for specific faults and an alarm message is sent to HUBwatch's monitoring software. Alarm management windows allow the user to start and stop the Alarms Poller, display alarms and the alarms log file, and add, delete and modify alarm agents.

Traps supported in HUBWatch V3.1 are described in Table 1.

Table 1
Traps

Trap Type	Switch 900 ³	Concen 900MX	Rprtr 900 ¹	Srvr 900TM	Mgmt Agent
ColdStart		x	x	x	x
WarmStart					
LinkUp		x	x	x	x
LinkDown		x ⁴			x
AuthenFailure	x	x	x	x	x
rptrResetEvent			x		
rptrHealthTrap			x		
Enterprise					
Specific Port ²		x			

¹ DECrepeater 900 = DECrepeater 900TM, 900FM, 900FP, 90FS, 90TS, 900GM

² Enterprise Specific Port Trap = A non-standard trap that conveys information about a change of an FDDI port; disabled by default

³ Switch 900* = DECswitch 900EE, DECswitch 900EF, DECbridge 900MX, PEs switch 900TX

⁴ Requires an OBM link as a valid alternative link

HUBwatch manages the GIGAswitch/FDDI with the same intuitive "look and feel" as found with managing DEChubs. From the Community Table, you select GIGAswitch/FDDI agent and the front panel displays. Note that there is only a Physical Front Panel View for the GIGAswitch/FDDI. The eight management windows allow the user to perform full management of the switch. In addition to the Summary Front Panel and System Summary Views, detail screens allow you to manage line cards, MAC Information and port details. Other screens enable filtering, and management of line card and bridge functions. Using SNMP, setting filters can be a complex and time consuming task. HUBwatch simplifies this task through the use of an innovative GUI. HUBwatch V3.1 adds support for the 4-port FGL4 card.

HARDWARE REQUIREMENTS*Processors Supported:*

VAXstation 3100 Model 30
 VAXstation 3100 Model 38
 VAXstation 3100 Model 40
 VAXstation 3100 Model 48
 VAXstation 3100 Model 76
 VAXstation 3200, VAXstation 3500
 VAXstation 3520, VAXstation 3540
 VAXstation 4000 Model 60
 VAXstation 4000 Model 90
 VAXstation 4000 VLC

For better performance, Digital recommends the use of a VAXstation 4000.

Processors Not Supported:

VAXstation I, VAXstation II
 VAXstation 2000, VAXstation 8000

All VAX, MicroVAX, and VAXserver processors

Other Hardware Required:

The minimum memory size is 24 MB. Digital recommends using 32 MB. The HUBwatch program supports 8-plane color monitors in pseudocolor mode only.

DECagent 90 V2.0 (which serves as SNMP agent for HUBwatch) installed on the LAN and a Bus Master Device (DECbridge 90, DECbridge 90FL at V3.1 of firmware or DECagent 90 at V2.0 of firmware) installed in the DEChub 90 to manage these devices:

- DECreepeater 90C, 90T, 90T+, 90FA, 90FL, installed in a DEChub 90 only. The DEChub 900MS integral agent can manage these devices when installed in a DEChub 900MS. These devices are not manageable when not installed in a hub.
- DECserver 90L, 90L+ (Note: The DEChub 900MS Agent will not perform bus master for these devices when installed in a DEChub 900MS. A Bus Master Device is required to be installed in the same hub as these servers to display slot information. A DECagent 90 is required on the LAN in order to manage these devices.)
- DECbridge 90, 90FL (Note: The DEChub 900MS Agent will not perform bus master for these devices when installed in a DEChub 900MS. A DECagent 90 is required on the LAN in order to manage these devices.)
- DECserver 90TL, when installed in the DEChub 90, to display on the Hub Front Panel View.
- DECbrouter 90, when installed in a DEChub 90, to display on the Hub Front Panel View

- DECserver 90M, when installed in a DEChub 90, to display on the Hub Front Panel View
- DECreepeater 90FS, 90TS when installed in a DEChub 90, to display on the Hub Front Panel View.

Disk Space Requirements:

Disk space required for installation:	32,000 blocks (32 MB)
Disk space required for use (permanent):	32,000 blocks (32 MB)

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

The minimum memory supported is 24 MB. However, the use of this software in conjunction with increased memory capability improves performance. Digital recommends using 32 MB.

SOFTWARE REQUIREMENTS

- OpenVMS VAX Operating System V5.4 - V6.1
- Bookreader V4.0
- OpenVMS DECwindows Motif V1.1 - V1.2
- DEC TCP/IP Services for OpenVMS V2.0 or V3.0 or TGV MultiNet V3.2

OPTIONAL SOFTWARE

One of the following POLYCENTER software packages:

- POLYCENTER Framework V1.3
- POLYCENTER Network Manager 200 V1.3
- POLYCENTER Network Manager 400 V2.3

Refer to the following SPDs for specific information on the DECMCC products:

- POLYCENTER Framework (SPD 32.46.xx)
- POLYCENTER Network Manager 200 (SPD 32.48.xx)
- POLYCENTER Network Manager 400 (SPD 31.88.xx)

OpenVMS Tailoring:

The following OpenVMS classes are required for full functionality of this layered product:

- OpenVMS Required Saveset
- Network Support
- Programming Support
- Utilities

For more information on OpenVMS classes and tailoring, refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx).

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

DISTRIBUTION MEDIA

TK50 Streaming Tape

This product is also available as part of the OpenVMS VAX Consolidated Software Distribution on CD-ROM.

ORDERING INFORMATION

Software License: QL-0GEA9-AA HUBwatch for OpenVMS VAX

Software Media: QB-32VAB-AA HUBwatch and DEChub Consolidated Firmware Kit (Note: Orders for the QA-0GEAA-H5 Media Kit will be substituted with the above part number. QB-32VAB-AA is a kit which includes media for HUBwatch, DEChub Firmware, DECndu Plus and GIGAswitch. It is required that all DEChub and GIGAswitch Firmware be updated to these latest release before installing HUBwatch V3.1)

A Consolidated DEChub Firmware Kit (only) is available as part numbers:

QB-32TAD-SA MS-Windows
QB-32TAA-SA OpenVMS VAX

Software Documentation: QA-0GEAA-GZ HUBwatch Manual only (Order QA-32TAA-GZ to obtain a complete set of DEChub Products' Manuals)

Software Product Services:

Layered Product Service: QT-0GEA9-L9
Documentation Service: QT-0GEAA-KZ
Media and Documentation Service (MDDS):
QT-0GEAA-E5
Installation: QT-0GEAA-I9

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

SOFTWARE LICENSING

This software is furnished only under a license. For more information about Digital's licensing terms and policies, contact your local Digital office.

License Management Facility Support

This layered product supports the OpenVMS License Management Facility.

License units for this product are allocated on an Unlimited System Use basis.

For more information on the License Management Facility, refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx) or the License Management Facility manual of the OpenVMS VAX Operating System documentation set.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Digital. For more information, contact your local Digital office.

- Network Management Operations Services
- Network Management Planning and Design Services
- Network Management Implementation Services
- Network Management Training

SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

The above information is valid at the time of release. Please contact your local Digital office for the most up-to-date information.

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