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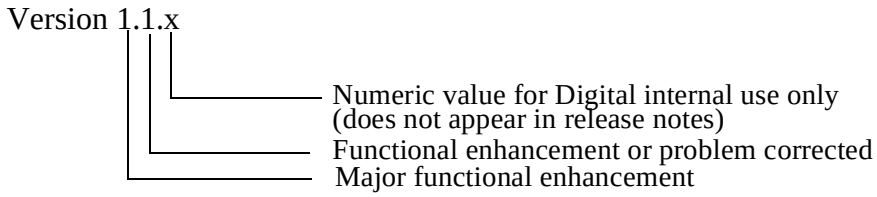
AA-PZ72J-TE

DECagent 90 Release Notes
Firmware Version 3.0.3
December 1996

As warranted, Digital changes the firmware of this device to make functional enhancements or to correct reported problems. These release notes identify enhancements and changes to the firmware that affect end-user operations. They also contain firmware and software requirements, and list updates in this release as well as known restrictions that apply to the operation of the DECagent 90 module.

The following example describes the firmware version number:



Contents

Firmware Requirements

When you are configuring the DECagent 90 module in a DEChub 900 MultiSwitch, Digital Equipment Corporation requires that you use DEChub 900 MultiSwitch firmware Version 4.0 or higher to manage the DECagent 90 running firmware Version 3.0.3.

Software Requirements

If you are using HUBwatch to manage the DECagent 90, Digital Equipment Corporation requires that you install HUBwatch software Version 4.1 or higher. You can also upgrade to any version of clearVISN MultiChassis Manager software.

Problems Fixed in This Release

Version 3.0.3 of the agent code fixes the following problems that were reported against Version 3.0.1. (Version 3.0.2 was an interim version that was never released.) The following list describes the status of the bugs found in Version 3.0.1 of the firmware:

1. **Agent returns garbage text for dh90SlotObjectID.**

   Explanation: Doing an SNMP `get` of dh90SlotObjectId for a DECrepeater 90FS or DECrepeater 90TS in a remote hub would return a long string of garbage characters.

   Status: [Fixed] Under these conditions, the agent will now return the special Unknown string for sysObjectID.

2. **Agent crashes when front panel button pressed while in SLIP mode.**

   Explanation: When the serial port is in SLIP mode, pressing the front panel button should cause the serial port to revert back to Console mode, but this action caused the agent to crash. The serial port would remain in SLIP mode after the reset, making it difficult for the user to put the agent back in Console mode.

   Status: [Fixed] Pressing the front panel button while in SLIP mode now causes the serial port to revert back to Console mode. The agent will continue operating properly.

3. **Agent returns wrong value for the SNMP object ipAdEntNetMask.**

   Explanation: The value returned for ipAdEntNetMask is the default net mask, not the value set by the user through the Console. Note that there is only a problem in reporting the value through the ipAdEntNetMask object; the user-set net mask is used correctly by the agent's IP stack.

   Status: [Fixed] The agent now returns the proper net mask value for ipAdEntNetMask.

4. **Agent ignores a line card’s MAC address if the address begins with 00.**

   Explanation: If the MAC address of a line card begins with 00 (for example, 00-00-F8-12-34-56), the agent would return NoSuchName instead of the MAC address when polled for the SNMP object dh90SlotPhysicalAddress.

   Status: [Fixed] The agent now returns the proper MAC address, even if the first octet of the address is 00.

New Features

Management of Digital's Stackable Products

The DECagent 90 can now be a hub master for Digital's stackable hubs. To manage the stack, you set the configuration rotary switch on the stackable back panel to the Agent slot. The DECagent 90 automatically discovers the stackable hub. When the DECagent 90 is queried by SNMP for dh90Type, it returns `decstack90(6)`. The DECagent 90 retains its ability to manage a DEChub 90 and a DEChub 900.

Stackable Repeater Management

The DECagent 90 can manage the new Digital stackable repeaters, all of the 90-style repeater products, and the DECserver 90L+, DECserver 90TL, and DECbridge 90/90FL.

Configuration Rules

When using a DECbridge 90/90FL in a stack or hub, make the DECagent 90 the master. Only the DECagent 90 Autodiscovers and manages the DECbridge 90/90FL.

The DECbrouter T1, T2, and T2A must be installed in positions 1 to 9 in a Digital MultiStack System. They are not recognized above position 9.

All modules in a stack that are assigned an IP address will respond to user selection with the module's SNMP agent. There are two exceptions: the DECrepeater 90TS and 90FS, when installed as non-manager modules, but with an IP address, will not respond with the individual module's SNMP agent. To access the individual module's SNMP agent, use the "ManageTable" facility under the HUBwatch Community menu option.

The DECserver 90TL, 90L, and 90L+ are not Autodiscovered. Use the Add facility under the HUBwatch Configuration menu option to add these devices to the stack or hub.

SLIP OBM Support

When the front-panel serial port is configured for SLIP mode, it now remains in that mode even through normal resets. You can use any of the following methods to force it back to Console mode:

- Set the new SNMP MIB object da90SetupPortStatus to `reset(3)`.
- Press the front-panel switch any time after the DECagent 90 has completed its power-up self-tests. If you press the switch before power-up self-tests are completed, you erase all the configuration settings.
- Reset the DECagent 90 to factory defaults. Resetting deletes all the configuration settings and replaces them with factory default values.

IP Subnet Mask Support

You can now enter a subnet mask from the console. You must enter the proper subnet if a gateway address has also been set. If the gateway address is 0.0.0.0, then the subnet mask can remain at its default value of 0.0.0.0.

Console Updates

Several menus have been updated:

- Menu number 3, Show Current Settings, now displays the module reset count next to the

uptime; it also displays the subnet mask.

- Menu number 4, Set Agent IP Address/Gateway/Subnet, has been extended to allow you to set the subnet mask.
- Menu number 13, Show Community, has been reformatted to accommodate repeaters having up to 28 ports. Two screens are now required to display module information and port status.

MIB Improvements

Several MIB objects have been changed or added to the DEChub 90 MIB to support the new functions:

- The MIB object dh90Type returns the new value `decstack90(6)` when the DECagent 90 is installed in a stackable hub.
- The MIB object drpt90PortState now returns the new value `inactive(5)` for repeaters that can detect that no media is attached to the port.
- A new MIB object da90SetupPortStatus has been added, which reads the status of the front-panel setup port and resets the port from SLIP mode back to Console mode.

Restrictions

For standalone operation, you should always plug the DC power cord into the DECagent 90 before plugging in the AC power cord.

Version 3.0 of DECagent 90 firmware is limited to managing up to 48 modules in up to 16 communities. The Version 2.1 firmware allows up to 64 modules. You can lose some of this information when upgrading to Version 3.0. After the upgrade to Version 3.0, the DECagent 90 retains the first 48 modules it finds when initializing. It scans the database for all possible modules starting at community 1, scanning from slot 1 to 16, and proceeding to community 16. After it finds 48 modules, it ignores all others.

The DECagent 90 cannot manage any of the new stackable repeaters in remote communities. Remote repeaters are managed via the DECbridge 90, which does not support the new stackable repeaters.

All DECbridge 90 modules that are managed by the DECagent 90 Version 3.0 firmware must be upgraded to Version 3.1 or higher of the DECbridge 90 firmware. Failing to do so may result in anomalous behavior both in managing the bridge and in managing repeaters in a remote hub.

The DECagent 90 cannot be a hub master in a DEChub 900 backplane if the Hub Manager is assigned an IP address. When it has an IP address, the Hub Manager should be used to manage DEChub 90 repeaters in the DEChub 900. In a DEChub 90, the DECagent 90 can be a hub master and fully manage the repeaters.

Version 3.0 firmware is fully compatible with module Rev E03 of DECagent 90 or newer (the module Rev is indicated on the back of the agent). However, DECagent 90 modules prior to Rev E03 may experience diagnostic errors that lead to corruption of the Version 3.0 firmware image in flash, rendering the DECagent inoperable. If this corruption occurs, you must reload the firmware by using the load procedure, which requires a MOP load host. See the sections titled Upgrading the DECagent 90 Firmware and Load Procedure for the DECagent 90.

Trap Destination Addresses

You can enter trap destination addresses for the DECagent 90 module's community either from the DECagent 90 console or by an SNMP manager. Trap destination addresses for communities other than the DECagent 90 module's community (remote hubs) must be entered by an SNMP manager.

Because of a restriction in some MIB compilers, trap definitions containing a *variables* list that refers to externally defined objects will not compile properly. To accommodate this restriction, the DEChub 90 MIB has a commented *variables* list for the srvrPortStatusChange and brdgPortStatusChange trap definitions. If your MIB compiler does not have this restriction, see the MIB text for instructions on how to include the *variables* list in the trap definitions. The section titled Accessing Online Information in these release notes explains how to locate MIB information via FTP and from Digital's Network Product Business Web Site.

Upgrading the DECagent 90 Firmware

The DECagent 90 Version 3.0 firmware has an internal representation of nonvolatile data storage that is different from that of Version 2.0 or 2.1. When a DECagent 90 is upgraded to Version 3.0 from Version 2.0 or 2.1, the data is converted into the new data format without loss of configuration information. However, if that DECagent 90 is subsequently downgraded to Version 2.0 or 2.1, an automatic factory reset occurs and all configuration information is lost.

When upgrading the DECagent 90 from Version 1.x firmware directly to Version 3.0, all configuration information is lost. For this reason, you should first upgrade a Version 1.x DECagent 90 to Version 2.0 or 2.1, and then to Version 3.0.

If you are updating your DECagent 90 from Version 1.0, you must perform the load procedure. Specific instructions for performing this procedure are in the section titled Load Procedure for the DECagent 90. Updating your DECagent 90 from Version 1.1 or 2.0 or 2.1 to Version 3.0 is a direct load.

TFTP and DECndu Plus

The DECagent 90 Version 3.0 firmware no longer supports upgrades by using MOP. When upgrading from Version 3.0 to a later revision, you must use the TFTP protocol.

DECndu Plus can be used to upgrade a DECagent 90 running Version 1.1 if DECndu Plus uses MOP to perform the upgrade. MOP is used as the update protocol if the DECagent 90 module's MAC address is specified as the target address to DECndu Plus. DECndu Plus on the DOS platform must read the DECagent 90 module's firmware image from the hard disk, not the floppy disk, or a load timeout results.

If the DECagent 90 is running Version 2.0 or 2.1 firmware or later, TFTP can be used to perform firmware upgrades. The TFTP load can be performed by HUBloader, clearVISN Flash Loader, DECndu Plus, or by a TFTP server and initiated through an SNMP manager or the DECagent 90 console. For DECndu Plus to support a TFTP load of the DECagent 90, you must append the file DENMA.NDU_SCRIPT to the DECndu Plus file SDDF.STP. You must specify the command option /FORCE=DECAGENT to direct DECndu Plus to use the supplied script. TFTP is used as the update protocol if the DECagent 90 module's IP address is specified as the target address to DECndu Plus.

You cannot load the DECagent 90 Version 1.0 firmware by using DECndu Plus; you must use the load procedure (see the following section).

Load Procedure for the DECagent 90

This procedure first loads the preliminary image, then the final firmware.

NOTE: You perform this procedure only when you are upgrading from Version 1.0 firmware to Version 3.x firmware or if the Version 3.0 firmware becomes corrupted.

Step	Action

1.	Ensure that the following files are available in the proper location:
	
	On OpenVMS:
	
	`mom$load:denma_load.sys`
	
	`mom$load:denma303.sys`
	
	On ULTRIX:
	
	`/usr/var/mop/denma_load.sys`
	
	`/usr/var/mop/denma303.sys`

2.	Ensure the `mop` process is running (ULTRIX ONLY).
	
	Verify that the ULTRIX RISC load host is set up to allow the downline load. The `mop_mom` process must be running. To verify that this is the case, type the following text:
	
	`ps -ax | grep mop_mom`
	
	The `mop_mom` process is displayed. If it is not displayed, type the following text:
	
	`/etc/mop_mom`

3.	Configure the load host.
	
	The load host must have its circuit service enabled. Use the following procedure to enable the circuit service:
	
	a. Enter the Network Control Program (NCP). To enter NCP, type the following command:
	
	`$ ncp`
	
	b. Enter the following command to see whether the load host is set up to allow downline loads:
	
	`ncp> sho circ qna-0 char`
	
	Use the appropriate Ethernet circuit; for example, sva, bna, qna, and so on.
	
	c. If the service is not enabled, enter the following commands to enable the service:

NOTE: You are turning off the network here! You must have system privileges.

```
ncp> set cir qna-0 state off

ncp> set cir qna-0 service enabled

ncp> set cir qna-0 state on
```

d. Set up a node for the DECagent 90 module. Follow these steps to set up a node:

i. Enter the following command:

```
ncp> set node x.x name denma
```

Enter an unused address in place of `x.x`.

ii. Enter the following command:

```
ncp> set node denma hardware address xx-xx-xx-xx-xx-xx
```

If you do not know the hardware address of the DECagent 90, you can find it printed on a label on the front panel of the module. You can also determine the address by selecting console menu number 3, Show Current Settings.

iii. Enter the following commands:

```
ncp> set node denma service circuit qna-0
```

On OpenVMS, type:

```
ncp> set node denma load file mom$load:denma303.sys
```

On ULTRIX, type:

```
ncp> set node denma load file /usr/var/mop/denma303.sys
```

4. Initiate the downline load of the image loader via the terminal that is attached to the front async port on the DECagent 90 module. You must enable CCI on the terminal.

Use the following procedure to enable CCI:

a. Connect the terminal to the async port (DB25 connector).

b. Set the communication settings as follows:

```
9600 baud

8 bits

No parity

1 stop bit
```

c. Power cycle the DECagent 90 module.

Result: The DECagent 90 performs a self-test that lasts approximately 10 seconds.

d. Before the self-test is completed, press <Ctrl-I>.

Result: The following text is displayed on your screen:

```
Digital Equipment Corporation @
DENMA Console Command Interpreter
CCI>
```

e. At the `CCI>` prompt, enter the following command:

```
CCI> load denma_load.sys
```

Result: The following message is displayed on the terminal screen:

```
Attempting to locate load host
Host AA-00-04.....located
Requesting load from load host
Loading from load host
Image load complete
```

Note: If the `Invalid load image` message is displayed, there is an error in the load process. Try loading again.

f. Start the image loader as follows:

```
CCI> start 200000
```

Result: If the image loader starts properly, the LED closest to the terminal connector is flashing.

5. Perform the downline load of the software image on the load host

To load the DECagent 90 with the software image, enter the following command:

```
ncp> load node denma
```

Result: If the image loads properly, the DENMA (DECagent 90) automatically performs a reset and starts the software image.

If a failure occurs during loading, the second LED flashes, indicating that the image did not load properly. Retry the load procedure, starting at step 3-a.

Accessing Online Information

Direct Access via FTP

Current release note information, RFCs, firmware, and MIBs are available online. Refer to the Accessing MIBs and RFCs section of your *DECagent 90 Installation and Configuration* manual for instructions on retrieving information. The online locations are as follows:

- DECagent 90 release notes: `ftp.digital.com/pub/DEC/hub900/release`
- DECagent 90 firmware: `ftp.digital.com/pub/DEC/hub900/firmware`
- DEChub 90 MIB: `ftp.digital.com/pub/DEC/hub900/mibs`

DECagent 90 files are named in the following syntax:

```
denmaXXX.***
```

where `XXX` is the version number and `***` is the file extension. For example:

```
denma303.txt
```

Network Product Business Web Site

Further information on this network product or topic is available on Digital's Network Product Business (NPB) Web Site as well as its Bulletin Board System. Both systems maintain a common, rich set of up-to-date information on NPB's products, technologies, and programs.

The Web Site can be reached at geographic locations via the following URLs:

Americas Network Product Business Home Page	http://www.networks.digital.com/
Europe Network Product Business Home Page	http://www.networks.europe.digital.com/
Australia Network Product Business Home Page	http://www.digital.com.au/networks/
Digital Equipment Corporation Home Page	http://www.digital.com/

You can access firmware, release note, MIB, and RFC information for your product as follows:

1. From the Network Product Business Home Page, choose the Technical Information link.
2. From the Technical Information page, choose the Technical Information (Drivers, Manuals, Tech Tips, etc.) link.
3. In the Technical Data page, scroll to the Hub Products list and choose either of the following links:

   To access firmware and release notes, choose Hubs Firmware.

   To access MIBs and RFCs, choose Hubs MIBs.

To connect to the Network Product Business Bulletin Board System, you need a PC and a modem. Dial 508-486-5777 (U.S.A.). Set your modem to 8 bits, no parity, 1 stop bit.

Using Electronic Mail

The DDN Network Information Center (NIC) of SRI International provides automated access to NIC documents and information through electronic mail. This is especially useful for users who do not have access to the NIC from a direct Internet link, such as BITNET, CSNET, or UUCP sites.

To use the mail service, follow these instructions:

1. Send a mail message to `SERVICE@NIC.DDN.MIL.`
2. In the `SUBJECT` field, request the type of service that you want followed by any needed arguments.

Normally the message body is ignored, but if the `SUBJECT` field is empty, the first line of the message body is taken as the request.

The following example shows the `SUBJECT` lines you use to obtain `DDN NIC` documents:

```
HELP

RFC 822

RFC INDEX

RFC 1119.PS

FYI 1

IETF 1IETF-DESCRIPTION.TXT

INTERNET-DRAFTS 1ID-ABSTRACTS.TXT

NETINFO DOMAIN-TEMPLATE.TXT

SEND RFC: RFC-BY-AUTHOR.TXT

SEND IETF/1WG-SUMMARY.TXT

SEND INTERNET-DRAFTS/DRAFT-IETF-NETDATA-NETDATA-00.TXT

HOST DIIS
```

Requests are processed automatically once a day. Large files are broken into separate messages.