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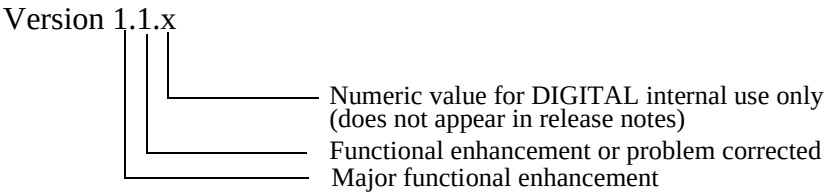
AA-R6C2A-TE

DECswitch 900EF, DECswitch 900EE DECswitch 900FO, PEswitch 900TX Release Notes Firmware Version 2.0 June 1997

These release notes contain firmware and software requirements that apply to the operation of the DECswitch 900EF, DECswitch 900EE, DECswitch 900FO and the PEswitch 900TX (also referred to in this document as the module) products. These release notes can also be found online. For information about retrieving online release notes, refer to the section titled Accessing Online Information.

As warranted, DIGITAL changes the firmware of these devices to make functional enhancements or to correct reported problems. These release notes identify enhancements and changes to the firmware that impact end-user operations. They also contain firmware and software requirements, and list updates in this release as well as known conditions and restrictions that apply to the operation of these modules.

The following example describes the firmware version number:



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Changes for This Release

The following lists changes for this release:

DECswitch 900EF, DECswitch 900FO, and PEswitch 900TX

VLAN Frame Format

CAUTION

The VLAN encapsulation frame format has been updated to be compatible with the format being used in the IEEE 802.1Q draft standard. Hence, if you are using VLANs, you *must* upgrade all of your switches. Previous firmware versions will not properly interoperate with the VLANs in this firmware version. Also, please note the VLAN fixes in the section titled, "Fixes for This Release."

VLAN and Address Filters

- The definition of the unicast address filter has been changed. If using DECnet and VLANs, this issue is particularly relevant. Now, packets destined to a MAC address specified in a unicast filter will ALWAYS be forwarded to ALL allowed ports in the filter, even if the MAC address has been learned on a specific port. This change has been made for two reasons. The first is that many customers expected the filter to behave in this manner originally. The second reason is to solve the problem of routing DECnet between two VLANS. A DECnet router typically uses the same MAC address on all of its ports. If it is connected to two ports of the same switch in different VLANs, the address can only be learned on a single port at any one time. This would cause connectivity problems for stations accessing the router from the two VLANs. To solve this, you can create a unicast filter in the switch for the router's MAC address and configure the filter to allow the address on the two VLAN ports to which the router is connected.

VLAN Manage-ment

- A new feature has been added to allow the switch to be managed from any VLAN. With previous firmware versions, the network management station (NMS) had to be connected directly to the FDDI ring, or connected to a switch port in the default VLAN. With this version, the NMS can also be attached to any VLAN port to manage the switches. All switch management responses to VLAN encapsulated IP and ARP requests will be encapsulated with the same tag used in the request packet. Remember, that any ARP requests or trap packets originated by the switch will *not* be encapsulated. Therefore, the following two exceptions apply:

  — The bootp or tftp server used to upgrade switch firmware must still reside in the default VLAN, be directly connected to the FDDI ring, or be directly connected to the switch requesting the new file.

  — The NMS configured to receive traps must be placed in the default VLAN. The switch will *not* encapsulate trap packets.

DECswitch 900EE

The definition of the unicast address filter has been changed. Now, packets destined to a MAC address specified in a unicast filter will ALWAYS be forwarded to ALL allowed ports in the filter, even if the MAC address has been learned on a specific port.

Fixes for This Release

This section contains information on bug fixes that have been fixed in this release.

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A firmware problem that may cause a VLAN port to stop forwarding after the unit resets has been fixed. If you are currently using VLANs with a previous firmware image, please upgrade to this image to avoid this problem. After upgrading your switches, use VLAN Manager to reset the VLAN configuration in the switches and then reload your VLAN database into the switches.

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- A firmware problem that would filter packets with the protocol type of 0x8080 (vitalink) by default has been fixed.
- A firmware problem that would cause the switch to reset because of specific RMON history table configurations has been fixed.
- A firmware problem that caused the RMON utilization value to become inaccurate in long-term history entries for networks with utilization greater than 23.86% has been fixed.

Firmware Requirements

The following lists firmware requirements in this release of the DECswitch 900EF, DECswitch 900EE, DECswitch 900FO and PEswitch 900TX:

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When configuring modules in a DEChub 900 MultiSwitch, ensure that the DEChub 900 MultiSwitch firmware version is V4.1, or higher. If you are currently running DECswitch 900FO firmware version V1.1.0 or a previous version, you must upgrade to version V1.1.1 before upgrading to the version discussed in these release notes. See the section titled Accessing Online Information for information on where to find DECswitch 900FO firmware version V1.1.1.

Software Requirements

This section contains information on software requirements for this release.

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- If you are using clearVISN MultiChassis Manager to manage the module, you must install MultiChassis Manager software version V5.0, or higher.
- If you are using RMON Manager to manage the module RMON functionality, you must install RMON Manager software version V3.3, or higher.

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If you are using VLAN Manager to manage the module VLAN functionality, you must install VLAN Manager software version V1.0, or higher.

Hardware Requirements

This section contains information on hardware requirements for this release.

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- The hardware and firmware revision levels can be displayed by selecting menu item 3 ([3] Show Current Settings) from the installation menu. (Refer to the *installation and configuration* manual for your module.) The revision levels are also displayed in the revision field of the Switch Summary window when you are using clearVISN MultiChassis Manager (version V5.0 or higher), and in the MIB-II sysDescr using a generic SNMP manager.

- The revision level for the DEChub 900 MultiSwitch Hub Manager can be displayed by selecting item 3 ([3] Show Current Settings) on the DEChub 900 MultiSwitch Installation menu. (Refer to the *DEChub 900 MultiSwitch Owner's Manual* for more information.)

DECswitch 900EF, DECswitch 900EE

The minimum hardware revision level required to support the features of this release is hardware version V1/1 or DECbridge 900MX hardware version V0/1.

PEswitch 900TX

The minimum hardware revision level required to support the features of this release is hardware version V1/2.

DECswitch 900EF

To use the optional DEChub ONE-MX docking station support, the minimum DECswitch 900EF hardware version is V1/2. DECswitch 900EF modules with a hardware version below V1/2 and DECbridge 900MX modules with a hardware version below V0/1 will power up on a DEChub ONE-MX, but the console port and the ModPMDs on the DEChub ONE-MX will be unusable.

Docking Station Requirements

When configuring modules in standalone mode, the following docking stations are available:

Docking Station	Model Number	Available Power
DEChub ONE	DEHUA	90 Watts
DEChub ONE-MX	DEF1H	90 Watts

10BaseT Requirements

The following describes the 10BaseT requirements:

DECswitch 900EF and DECswitch 900EE

The module's 10BaseT ports are straight-through wired station ports. To connect a straight-through port to a crossover port (for example, a repeater port), use a straight-through cable. To connect a straight-through port to another straight-through port (for example, a station), use a crossover cable. (Refer to the installation and configuration manual for more information on that specific product.)

PEswitch 900TX

The PEswitch 900TX 10BaseT ports are crossover wired ports. To connect a crossover port to a straight-through port (for example, a station port), use a straight-through cable. To connect a crossover port to another crossover port (for example, a repeater port), use a crossover cable. (Refer to the *PEswitch 900TX Installation and Configuration* manual for more information.)

FDDI Requirements

This subsection lists FDDI Requirements for the DECswitch 900EF, DECswitch 900FO, and the PEswitch 900TX.

DECswitch 900EF FDDI Requirements

The DECswitch 900EF FDDI PHY ports (A/M and B/S) are available on the front panel by default. They may be individually configured and switched to the DEChub 900 backplane (using clearVISN MultiChassis Manager), or to ModPMDs installed on the DEChub ONE-MX (using clearVISN MultiChassis Manager or the Module-Specific Options console menu selection).

When the module is connected to a DEChub ONE-MX docking station, the FDDI configuration state and station type depend on the number of ModPMDs installed, slot location of ModPMDs, and the configuration of the individual PHY ports, as shown in the following table.

Number of ModPMDs	ModPMD Slot	PHY Configuration	Configuration State
2	A/M and B/S	Front Panel: A, B Docking Station: None	DAS*

Number of ModPMDs	ModPMD Slot	PHY Configuration	Configuration State
2	A/M and B/S	Front Panel: None Docking Station: A, B	DAS (Continued on the next page)
2	A/M and B/S	Front Panel: B Docking Station: A	DAS
2	A/M and B/S	Front Panel: A Docking Station: B	DAS
2	A/M and B/S	Front Panel: M, S Docking Station: None	SAC*
2	A/M and B/S	Front Panel: None Docking Station: M, S	SAC
2	A/M and B/S	Front Panel: S Docking Station: M	SAC
2	A/M and B/S	Front Panel: M Docking Station: S	SAC
1	A/M	Front Panel: A, B Docking Station: None	DAS
1	A/M	Front Panel: None Docking Station: A, B	DAS C_WRAP_A
1	A/M	Front Panel: B Docking Station: A	DAS
1	A/M	Front Panel: A Docking Station: B	DAS C_WRAP_A
1	A/M	Front Panel: M, S Docking Station: None	SAC
1	A/M	Front Panel: None Docking Station: M, S	SAC
1	A/M	Front Panel: S Docking Station: M	SAC
1	A/M	Front Panel: M Docking Station: S	SAC
1	B/S	Front Panel: A, B Docking Station: None	DAS
1	B/S	Front Panel: None Docking Station: A, B	DAS C_Wrap_B

Number of ModPMDs	ModPMD Slot	PHY Configuration	Configuration State
1	B/S	Front Panel: B Docking Station: A	DAS C_Wrap_B
1	B/S	Front Panel: A Docking Station: B	DAS
1	B/S	Front Panel: M, S Docking Station: None	SAC
1	B/S	Front Panel: None Docking Station: M, S	SAC
1	B/S	Front Panel: S Docking Station: M	SAC
1	B/S	Front Panel: M Docking Station: S	SAC
0	----	Front Panel: A, B Docking Station: None	DAS
0	----	Front Panel: None Docking Station: A, B	No FDDI
0	----	Front Panel: B Docking Station: A	DAS C_Wrap_B
0	----	Front Panel: A Docking Station: B	DAS C_Wrap_A
0	----	Front Panel: M, S Docking Station: None	SAC
0	----	Front Panel: None Docking Station: M, S	No FDDI
0	----	Front Panel: S Docking Station: M	SAC
0	----	Front Panel: M Docking Station: S	SAC

* Indicates either DAS = Dual Attach Station or SAC = Single Attach Concentrator

DECswitch 900FO/PEswitch 900TX FDDI Requirements

The DECswitch 900FO and the PEswitch 900TX FDDI PHY ports (A/M and B/S) are available on the DEChub 900 backplane or when the appropriate (optional) ModPMDs are installed on the DEChub ONE-MX docking station. The ports can be configured using MultiChassis Manager, or when installed on the DEChub ONE-MX from the console (using the `Module-Specific Options` console menu selection).

When the module is connected to a DEChub ONE-MX docking station, the FDDI configuration state and station type depend on the number of ModPMDs installed, slot location of ModPMDs, and the configuration of the individual PHY ports, as shown in the Table 1-1.

Table 1-1: ModPMD and PHY Port Configurations

Number of ModPMDs	ModPMD Slot	PHY Configuration	Configuration State
2	A/M and B/S	Docking Station: A, B	DAC*
2	A/M and B/S	Docking Station: M, S	SAC*
1	A/M	Docking Station: A, B	DAS C_WRAP_A
1	A/M	Docking Station: M, S	SAC
1	B/S	Docking Station: A, B	DAS C_WRAP_B
1	B/S	Docking Station: M, S	SAC
0	**----**	Any	No FDDI

* Indicates either DAS = Dual Attach Station or SAC = Single Attach Concentrator

Known Conditions and Restrictions

The following are known conditions and restrictions that apply to this release.

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- **Downgrading to a Previous Image.** If you upgrade to this firmware version and then decide to downgrade to a previous firmware version (v1.5 or earlier) at a later time, you may lose some of your configurations saved in NVRAM. To minimize this risk, we suggest that you use Recovery Manager to backup your switch's configuration information to minimize configuration data loss.

- **RMON Statistics and History Counters.** The following two conditions apply to RMON Statistics and History Counters:

  — The etherStatsCollisions and etherHistoryCollisions counters will only count collisions in which the switch was involved.

  — The etherStatsUndersizePkts, etherStatsFragments, etherHistoryUndersizePkts, and etherHistoryFragments counters are not supported.

- **Ethernet CRC and Alignment Errors.** The module does not distinguish between Ethernet CRC and alignment errors. Both CRC and alignment errors are counted as alignment errors on Ethernet ports. As a result, the CRC Errors (MIB object: dot3StatsFCSErrors) counter on the MultiChassis Manager Bridge Port Information view always shows a zero. The Alignment Errors (MIB object: dot3StatsAlignmentErrors) counter on the same view also counts packets with CRC errors.

DECswitch 900EF

- **Connecting the FDDI Optical Bypass Relay (OBR).** If the module is powered on and the FDDI cables are installed, connect the OBR device to the module in the following order:

  1 Disconnect the module's FDDI port connectors from Port 1 A/M and Port 1 B/S.

  2 Connect the OBR device to the module's OBR connector.

  3 Reconnect the module's FDDI port connectors to Port 1 A/M and Port 1 B/S.

- **Docking Station ModPMD LEDs.** The FRU and PHY LEDs on ModPMDs installed in a DEChub ONE-MX reflect the status of the corresponding PHY ports, even when the PHY configuration is such that a front panel port is used instead of the corresponding ModPMD.

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FDDI Port: Front Bezel Labels. The FDDI A/M and B/S ports may be labeled as A and B on older units that are being upgraded to this new firmware release.

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- **FDDI Tree Configurations.** FDDI rules require that stations with M ports be called concentrators. Consequently, when a DECswitch 900EF is configured with M and S ports, it must report itself as a concentrator in FDDI NIF and SIF frames, and in the FDDI and SNMP MIBs. Therefore, clearVISN MultiChassis Manager, FDDI monitors, and FDDI ring maps will announce the station type of a treed DECswitch 900EF as a Single Attach Concentrator (SAC), rather than as a Single Attach Station (SAS).

- **FDDI MIB: fddimibPORTLemCts.** The value returned in response to an SNMP get request for the MIB object fddimibPORTLemCts is not meaningful. A value of 0 (zero) is always returned for this object.

MIB and RFC Information

The module supports the following Request For Comments (RFC) and Management Information Base (MIB) extensions:

DECswitch 900EF, DECswitch 900FO, and PEswitch 900TX

- SNMP management (RFC 1157)
- MIB II (RFC 1213)
- Bridge MIB (RFC 1493)
- FDDI MIB (RFC 1512)
- Ethernet MIB (RFC 1643)
- RMON MIB (RFC 1757) (statistics, history, alarms, events)
- Digital ELAN MIB Extensions V3.2, April 1996
- DEChub 900 Common MIB Extensions V1.1, June 1995

DECswitch 900EE

- SNMP management (RFC 1157)
- MIB II (RFC 1213)
- Bridge MIB (RFC 1493)
- Ethernet MIB (RFC 1643)
- RMON MIB (RFC 1757) (statistics, history, alarms, events)
- Digital ELAN MIB Extensions V3.2, April 1996
- DEChub 900 Common MIB Extensions V1.1, June 1995

Accessing Online Information

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:

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/

To get firmware and MIB information, please choose the Technical Information link, and from there choose the Technical Information (Drivers, Manuals, Tech Tips, etc.) link. You will see a listing of all the products available on the NPB Web Site.

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 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.

You can access MIBs and RFCs using the following:

ftp://ds.internic.net/rfc/

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.

Usually, 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.