Software Product Description

PRODUCT NAME: Proteon Bridging Router System Software, Release 13.0 **SPD 37.05.07**

DESCRIPTION

Proteon™ Bridging Router System Software (BRSS) is a product of Proteon Associates, Inc. Proteon Bridging Router System Software provides the capability for multiprotocol packet switching and bridging on suitably configured Proteon p4100+ and CNX 500 Bridging Routers. The p4100+ and CNX 500 Base Systems software includes the operating system software, bridging software, Bandwidth Reservation, NetBIOS™ filtering, X.25 forwarding, LAN/WAN interface drivers, plus protocol forwarders which include TCP/IP, DECnet IV, Novell® NetWare® IPX, Banyan® VINES®, XNS, SDLC Relay, Frame Relay, OSI (ES-IS), AppleTalk®, and Apollo® Domain®. Proteon Bridging Routers can be configured to support multiple packet forwarders over local and wide area network interface cards. Customers are licensed to use up to a maximum of six packet forwarders, including bridging. Bandwidth Reservation is an additional license for any configuration.

Overview

Proteon Bridging Router System Software provides for both bridging and multiprotocol routing. Release 13.0 enhancements support:

- Quad Serial Line Interface
- Bandwidth Reservation on Proteon Serial Line
- NetBIOS Filtering for SRT Bridging
- Bridge-Only Management (TCP/IP)
- Bridge MIB (RFC 1286)
- Neighbor Boot with TFTP
- DECnet Phase V (Ethernet only)
- DNA over IEEE 802.5 support for Arbitrary MAC Addresses

For network interfaces that support bridging, packets may be bridged according to the rules for Media Access Control (MAC)-layer bridging on that interface (e.g., source routing between 802.5/Token Ring and 802.5 /Token Ring only).

Proteon Bridging Router management is supported under Simple Network Management Protocol (SNMP) MIB II with Proteon-specific extensions.

Release 13.0 Enhancements

Quad Serial Line Interface

The quad serial line interface provides four synchronous serial lines on one interface card which can be run at any combination of speeds between 4,800 bits/second and 2,048,000 bits/second. The ports can be configured for RS-232/V.35, and RS-449/X.21 physical interfaces. The level converters are included in the quad-port interface. There are three different combinations of quad-port serial interface and level converters:

- DETCB-AT, quad-port serial interface with 2 RS-232 /V.35 and 2 RS-449/X.21
- DETCB-AU, quad-port serial interface with 3 RS-232 /V.35 and 1 RS-449/X.21
- DETCB-AV, quad-port serial interface with 4 RS-232 /V.35

Customers must separately order the appropriate cable per serial port:

- BC25K-02, RS-232 DTE cable
- BC25L-02, RS-449 DTE cable
- BC25M-02, V.35 DTE cable
- BC25N-02, X.21 DTE cable
- BC25P-02, RS-323 DCE cable
- BC25Q-02, V.35 DCE cable

Required hardware includes quad interface with level converters and cable. Required software includes CXN 500 Release 13.0, and 1 MB buffer memory and IBD upgrade. Boot PROM Version 2.5 ships with CNX 500 Release 13.0 and the quad serial interface.

Systems requiring X.25 support CANNOT run both the dual-port and quad-port interface on the same system. Systems requiring X.25 support should order either the dual port serial interface OR the quad-port serial interface since they both handle the X.25 routing differently.

Bandwidth Reservation

Bandwidth Reservation (over Proteon serial line only) is a method of allocating bandwidth resources on serial lines. Bandwidth Reservation enables specific control of the percentage of a serial line's bandwidth that is reserved by the network manager for a given protocol. A protocol is allowed to use more than the reserved bandwidth if the other protocols are not using the remaining bandwidth. A given classification can be assigned to one of the four priorities within a bandwidth. There may be up to 10 different bandwidths, each of which can be assigned 10% to 100% of the available bandwidth.

NetBIOS Filtering for Adaptive Source-Routing Transparent Bridging

Release 13.0 allows bridged NetBIOS packets to be filtered based on the NetBIOS names in certain packet types, or on the values of arbitrary, user-specific fields in the NetBIOS portion of the package. This functionality is comparable to that provided by the IBM® Token-Ring Network Bridge Program, Version 2.1. NetBIOS filtering can reduce the bandwidth use of the NetBIOS protocol over WAN links for NetBIOS name discovery and challenges, and by NetBIOS datagrams.

Bridge-Only Management

A TCP/IP Host implementation is provided for use when IP traffic is bridged, instead of routed, as would be the case in pure bridging environments. This enables the bridge to be remotely managed via a telnet console or through SNMP. Other functions with the TCP/IP Host implementation include: download/upload of configuration information via TFTP, neighbor boot via TFTP, and the network diagnostic tools ping and traceroute.

Support for the Bridge MIB (RFC 1286)

The Bridge Management Information Base (MIB), defined by RFC 1286, is supported in Release 13.0. This MIB can be accessed whenever the IP protocol is available, via the IP forwarder or Bridge-Only Management.

Neighbor Boot with TFTP

A CNX 500 with an IBD can act as a boot server for other CNX 500s. Any load image in the IBD is available to other CNX 500s through the normal TFTP booting process. The load images of the IBD are named.

DNA Phase V (Over Ethernet)

Digital Network Architecture (DNA) Phase V supports all of the Phase IB compatibility features and is fully compliant to the DNA Phase V Network Routing Layer specification over Ethernet as a data link.

DNA Over IEEE 802.5 with AMA Support

Proteon's implementation of DNA over IEEE 802.5 has been enhanced to be compatible with Digital's DECnet Phase IV support for Arbitrary MAC Addresses (AMA), which allows DNA to be run on IEEE 802.5 nodes without their MAC addresses being changed by the DNA protocol.

Bridging

Proteon supports Adaptive Source Routing Bridging which includes four forms of bridging:

- Source Route Bridging (SRB)
- Spanning Tree Bridging (STB)
- Source Routing-Transparent Translation Bridging (SR-TB)
- Source Routing Transparent Bridging (SRT)

The Adaptive Source Routing Bridging software in the p4100+ and CNX 500 supports all four bridging options and, once configured, will dynamically select the appropriate bridging mechanism for the application.

Source Route Bridging (SRB)

SRB is supported only between 802.5/Token Ring and 802.5/Token Ring LANs, either locally connected or via synchronous serial lines to another 802.5/Token Ring LAN.

Spanning Tree Bridging (STB)

STB, also referred to as Transparent Bridging, is based on IEEE 802.1d, and is supported only between 802.3 /Ethernet and 802.3/Ethernet LANs, either locally connected or via a synchronous serial line to another 802.3 /Ethernet LAN.

Source Routing-Transparent Translation Bridging (SR-TB)

SR-TB is supported only between 802.5/Token Ring and 802.3/Ethernet LANs. SR-TB is Source Routing Bridging translation to Transparent Bridging. SR-TB will not bridge between 802.5/Token Ring and 802.5/Token Ring LANs.

Source Routing Transparent Bridging (SRT)

SRT is an extension of the IEEE 802.1d specification and supports bridging between token ring LANs that have both transparent and source routing traffic on the LANs.

Multiprotocol Packet Forwarder

Proteon Bridging Routers can be configured to support multiple packet forwarders over local and wide area network interface cards. Customers are licensed to use up to a maximum of six packet forwarders, including bridging. Bandwidth Reservation is an additional license for any configuration.

Packet Forwarders

DECnet Phase IV Packet Forwarder

The DECnet Packet Forwarder routes DECnet Phase IV packets from 802.5/Token Ring to/from other networks. Wide area internetworking requires the use of a Proteon Bridging Router between the interconnecting LANs. DDCMP is not used over wide area serial connections. The DECnet Packet Forwarder optionally supports Source Routing as a DECnet Data Link Service and Arbitrary MAC addressing for client stations on 802.5/Token Ring LANs.

IP Packet Forwarder

The IP Packet Forwarder provides packet forwarding for Proteon Bridging Routers in accordance with the forwarding rules of the TCP/IP protocol suite. Packet forwarding is done on the basis of the 4B INTERNET addresses found in the IP header of the packet. Routing table entries can be dynamically created by using routing protocols such as Open Shortest Path First (OSPF), Routing Information Protocol (RIP), or Exterior Gateway Protocol (EGP). The IP Packet Forwarder supports Bootp Client, which enhances network boot and adds to the router ease-of-use program. The IP Packet Forwarder also supports Internet Multicast. Internet Multicast is internetwide; path is source-based to preserve efficiency; messages traverse the link only once; and identity discovered is automatically transparent to the operator.

Point-to-Point Protocol (PPP) support provides transmission of datagrams over synchronous data links. The PPP physical interface operates via the existing DETAB-AD interface on the p4100+, and via the DETCB-AC Interface on the CNX 500. PPP supports up to 4K packet sizes.

IPX Packet Forwarder

The Advanced NetWare Internetwork Packet Exchange (IPX) protocol provides packet forwarding in accordance with Novell specifications for the IPX protocols, Advanced NetWare Routing Information Protocol (RIP), and Service Advertising Protocol (SAP).

OSI Packet Forwarder

The OSI Packet Forwarder provides packet forwarding in accordance with ISO 8473 Protocol for providing the Connectionless-mode Network Service (CLNS), ISO 9542 End System to Intermediate System (ES-IS) Routing Exchange Protocol, as well as ISO DIS 10589 Intermediate System to Intermediate System (IS-IS) Routing Exchange Protocol. The OSI forwarders based on these protocols are compliant with US GOSIP Version 1.0 specifications.

XNS Packet Forwarding

The Xerox® Network Systems (XNS) Packet Forwarder provides Proteon Bridging Routers in accordance with Xerox specification "INTERNET Transport Protocols." This includes full implementations of the Routing Information Protocol (RIP), Error Protocol (ERROR), and Echo Protocol (ECHO). It also contains a helper implementation of the Time Protocol client of the Packet Exchange Protocol (PXP). XNS is NOT supported in the 4100+ Release 13.0 Bridging Router System.

Apollo Domain Packet Forwarder

The Apollo Domain (DDS) Packet Forwarder provides packet forwarding for Proteon Bridging Routers in accordance with Apollo specifications for Domain protocols. DDS support includes full implementations of the Apollo Domain Routing Information Protocol (RIP) and a subset of Asknode queries application for a router. Apollo Domain is NOT supported in the 4100+ Bridging Router System Software by Digital.

AppleTalk Packet Forwarder

The AppleTalk Packet Forwarder provides packet forwarding for Proteon Bridging Routers in accordance with AppleTalk Phase 1 and AppleTalk Phase 2 specifications. Support includes full implementations of the Routing Table Maintenance Protocol (RTMP), Zone Information Protocol (ZIP), Name Binding Protocol (NBP), Echo Protocol (EP), and the Datagram Delivery Protocol (DDP). The forwarder also includes a partial implementation of the AppleTalk Transaction Protocol (ATP) as required by ZIP, and implementations of EtherTalk® and Apple® Address Resolution Protocol (AARP).

The AppleTalk Packet Forwarder also provides a gateway function between Phase 1 and Phase 2 networks. The gateway allows Phase 1 and Phase 2 hosts to transparently communicate. Routing information is passed between Phase 1 and Phase 2 networks by the gateway creating a (logically) single internet. The only restrictions are that a network member must be either Phase 1 or Phase 2. In addition, a Phase 2 network can only belong to one zone.

Banyan VINES Packet Forwarder

The Banyan VINES Packet Forwarder provides a complete implementation of VINES for layers 1 through 3 of the VINES protocol suite. Additionally, it supports a subset of the VINES protocol above layer 3 that is necessary for Banyan VINES servers to intercommunicate at those higher layers. The VINES Internet Protocol (IP), Routing Update Protocol (RTP), Address Resolution Protocol (ARP), and Internet Control Protocol (ICP) are supported.

A Banyan Client Node MUST have a Banyan Service Node within two hops in order for the Client Node to connect to the Service Node. That is, there can be only one Proteon Router between a Banyan Client Node and the nearest Banyan Service Node.

Frame Relay Service

The Frame Relay Service interface is a set of services available through a Frame Relay Bearer Service (FRBS) using the LAPD data link protocol. FRBS describes both switched and permanent virtual circuits.

SDLC Relay

The SDLC Relay consolidates serial lines by combining SNA/SDLC, and LAN networks. Users can save line cost by allowing SDLC frames to share expensive WAN circuits with LAN traffic. The relay passes the SDLC frames from source to destination over an IP tunnel, resulting in the elimination of dedicated point-to-point SDLC circuits (a cost saving to customers) and improved network utilization and efficiency through OSPF (Open Shortest Path First).

Physical Line Support

Both the p4100+ and the CNX 500 are sold with systems hardware and software. Users can add additional network interface cards based on the following configuration guidelines:

- The p4100+ can support up to four network interfaces. No more than three interfaces of the same variant may be present on the same base unit simultaneously.
- The CNX 500 can support up to three network interfaces.

Installation and Configuration

Installation of the p4100+ is performed by loading a local diskette containing the operating system software with appropriate device driver and packet forwarders.

CNX 500 installation uses a TCP/IP host system on the same network that loads the operating system software (with drivers and forwarders) via TCP/IP and TFTP.

CNX 500 with the Integrated Boot Device (IBD) can be factory configured with the software and requires no external network boot host at installation time. IBD incorporates 4 MB of flash memory and allows up to 4 load images to be stored in a single IBD. Each IBD is arranged with a 4-by-1 Meg bank that can be individually written or erased.

Configuration for both the p4100+ and the CNX 500 is controlled via a local terminal connected via a serial RS-232 port. This local terminal is used during initial installation when adding or deleting network interfaces or protocols, network debugging, and statistics and status reviewing.

Standards

The Proteon Bridging Router System Software, device drivers, and packet forwarders have been developed to conform to the following IEEE standards, CCITT recommendations, ISO standards, and INTERNET RFCs:

- IEEE 802.1D-1990 — Media Access Control (MAC) Bridges
- IEEE 802.5-1989, Appendix D Draft 15 — Source Routing
- ISO 8802-2 — Local Area Networks/Part 2: Logical Link Control
- ISO 8802-3 — Local Area Networks/Part 3: CSMA /CD Access Method and Physical Layer Specification
- IEEE 802.5-1989 — Token Ring Access Method and Physical Layer Specification
- ISO 8473 — Specification of Protocol to Provide the Connectionless-mode Network Service
- ISO 9542 — End System to Intermediate System (ES-IS) Routing Exchange Protocol for Use in Conjunction with ISO 8473
- ISO DIS 10589 — Intermediate System to Intermediate System (IS-IS) Routing Exchange Protocol
- CCITT recommendation X.25 (1978, 1980, or 1984) using the LAPB or LAPBE variants of the data link
- RFC 768 — User Datagram Protocol (UDP)
- RFC 791 — INTERNET Protocol (IP)
- RFC 792 — INTERNET Control Message Protocol (ICMP)
- RFC 793 — Transmission Control Protocol (TCP)
- RFC 826 — Address Resolution Protocol (ARP)
- RFC 877 — Standard for the transmission of IP datagrams over public data networks (X.25)
- RFC 888 — "STUB" Exterior Gateway Protocol
- RFC 894 — Standard for transmission of IP datagrams over Ethernet networks

- RFC 904 — Exterior Gateway Protocol (EGP)
- RFC 919 — Broadcasting INTERNET Datagrams
- RFC 922 — Broadcasting INTERNET Datagrams in the Presence of Subnets
- RFC 950 — INTERNET Standard Subnetting Procedure
- RFC 1009 — Requirements for INTERNET Gateways
- RFC 1058 — Routing Information Protocol (RIP)
- RFC 1060 — Assigned Numbers
- RFC 1103 — Proposed standard for transmission of IP datagrams over FDDI networks
- RFC 1140 — Official ARPA-Internet Protocols
- RFC 1155 — Structure and Identification of Management Information for TCP/IP-based INTERNET
- RFC 1157 — Simple Network Management Protocol (SNMP)
- RFC 1158 — Management Information Base for Network Management of TCP/IP-based INTERNET (MIB-II)
- ANSI T1.606-1990 — ISDN Architectural Framework and Service Description for Frame Relaying Bearer Service
- ANSI T1S1/90-175R3 (Draft) — Addendum to ANSI T1.606-1990
- ANSI T1S1/90-213R1 (Draft) — Signaling Specification for Frame Relay Bearer Service
- CCITT Draft Recommendation Q.922, Annex A — Core Aspects of Q.922 for use with Frame Relay Bearer Service
- Frame Relay Specifications with Extensions based on T1S1 — Digital Equipment Corporation, Northern Telecom, Ltd., Stratacom, Inc.
- DNA Digital Network Architecture Token Ring Data Link and Node Product Design Specification Version 1.0.0 (EK-DNAP4-TR-001)
- DECnet Digital Network Architecture Phase IV Routing Layer Functional Specification (AA-X435A-TK)
- DECnet Digital Network Architecture Phase IV Ethernet Node Product Architecture Specification (AA-X440A-TK)
- Advanced NetWare V2.0 Internetwork Packet Exchange Protocol (IPX) with Asynchronous Event Scheduler
- Advanced NetWare V2.0 Service Advertising Protocol for Value-Added Servers and Associated Applications
- XNSS 028112, INTERNET Transport Protocols, Xerox Corporation

Performance

Configuring the p4100+ or the CNX 500 for performance is based primarily on application requirements. These applications range from low-speed, few node topologies to relatively high-speed (e.g., LAN-to-LAN) connections. Also, the combination of bridging and routing or the presence of multiple routing protocols in the same bridging router might impact utilization as well as system throughput.

HARDWARE REQUIREMENTS

One of the following p4100+ or CNX 500 systems is required:

- 4100+ System Hardware
- DETAE-BA\p4100+ system (U.S. version)
- DETAE-BB\p4100+ system (International version)
- CNX 500 System Hardware
- DETCG-BA\CNX 500 system (Universal version)

OPTIONAL HARDWARE

Note: Hardware interfaces for both the CNX 500 and p4100+ ARE NOT included with the routers. All hardware interfaces MUST be ordered separately.

p4100+ Specific	
DETAB-AB	802.3/Ethernet interface
DETAB-AC	802.5/Token Ring interface
DETAB-AD	T1 serial interface
DETAB-AE	RS-232 serial interface
DETAB-AF	RS-449 serial interface
DETAB-AG	CCITT V.35 serial interface
DETAB-AH	X.25 interface

CNX 500 Specific	
DETCB-AA	802.3/Ethernet interface
DETCB-AB	802.5/Token Ring interface
DETCB-AC	T1/E1 Dual port serial interface
DETCB-AE	RS-232 level converter
DETCB-AF	RS-449 level converter
DETCB-AG	CCITT V.35 level converter
DETCB-AH	X.21 level converter

CNX 500 Specific	
DETCB-AT	T1/E1 Quad port serial interface, 2 RS-232/V.35 & 2 RS-449/X.21
DETCB-AU	T1/E1 Quad port serial interface, 3 RS-232/V.35 & 1 RS-449/X.21
DETCB-AV	T1/E1 Quad port serial interface, 4 RS-232/V.35
DETCB-AD	FDDI 62.5 micron interface
DETCB-AJ	FDDI 50 micron interface
DETCB-AK	Dual Port 802.5/Token Ring interface
DETCB-AL	Dual Port 802.3/Ethernet interface
DETCB-AN	Integrated Boot Device (IBD) Upgrade Option
DETCB-AP	Memory Upgrade to 1 MB Option
DETCB-AQ	Integrated Boot Device and Memory Upgrade 1 MB Option
DETCB-AR	FDDI Single Mode Fiber Interface

SOFTWARE REQUIREMENTS

Both the p4100+ and the CNX 500 must be configured with system software. Users can be licensed to use up to a maximum of six packet forwarders including bridging. Once a customer has chosen six forwarders, it MUST maintain that configuration or be in violation of the license and servicing agreements. Forwarders cannot be changed or swapped after being configured. A Bandwidth Reservation and NetBIOS Filtering license is an additional option and be added to the configuration of up to six packet forwarders.

Software device drivers for LAN and WAN interfaces are included in system software. Existing p4100+ and CNX 500 customers must purchase a software update license and media/doc kit.

Existing P4100+ customers will receive a 2MB memory upgrade with the Rel 13 software kit. They are required to replace their current memory board with this new upgrade and return the earlier version of the board to Proteon.

The CNX 500 Bridging Router with the Integrated Boot Device (IBD) option can be factory configured with the latest software release, and requires no external network boot host at installation time. CNX systems are shipped with 1 MB memory upgrade, IBD, and Version 2.5 PROMs. The CNX 500 Bridging Router without the IBD option requires a TCP/IP load host system on the same network supporting TCP/IP and Trivial File Transfer Protocol (TFTP). New load images for CNX 500 with or without IBD can be uploaded or downloaded through the network via a TFTP server.

Disk Space Requirements—CNX 500 load host only

Disk space required for use with three forwarders (permanent): 1,100 KB

This count refers to the disk space required on the system disk. The size is approximate; actual size may vary depending on the user's system environment, configuration, and software options.

4100+ systems are shipped with 2 MB memory.

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

5.25-inch double density IBM AT®-format diskettes

ORDERING INFORMATION

p4100+ and CNX 500 X.25 base, preconfigured, and one package systems are NO LONGER available and have been replaced with the 4100+ (DETAE-BA/BB) system hardware/software, and with the CNX 500 (DETCG-BA) system hardware/software. Proteon Release 13.0 system software, software licenses, and documentation are included in these systems packages.

Bandwidth Reservation and NetBIOS Filtering license must be ordered separately for customers to qualify for support on these features.

Existing customers must purchase update license and media/doc kits. Release 13.0 Update Kits include media and release notes, and can be ordered separately.

Hardware interfaces for both the CNX 500 and p4100+ also ARE NOT included with the system hardware. LAN /WAN interfaces must be ordered separately. There is no Apollo Domain interface support on the CNX 500.

Software Update Kits and Licenses for Release 13.0

p4100+	
QA-MBAAA-H7	Prot 4100+ RX33 Kit & Documentation
QA-MBAAA-GZ	Prot 4100+ Doc Kit (optional)
QL-MBAA9-AA	Prot 4100+ 6 Pack. Forw. LIC
QL-MBAA9-RA	Prot 4100+ 6 Pack. Forw. UPD LIC
QL-226A9-AA	Prot 4100+ Bandw. Res./NetBIOS LIC
QL-226A9-RA	Prot 4100+ Bandw. Res./NetBIOS UPD LIC

CNX 500	
QA-MBBAA-H7	Prot CNX 500 RX33 Kit
QA-MBBAA-GZ	Prot CNX 500 Doc Kit
QL-MBBA9-AA	Prot CNX500 6 Pack. Forw. LIC
QL-MBBA9-RA	Prot CNX500 6 Pack. Forw. UPD LIC
QL-227A9-AA	Prot CNX500 Bandw. Res./NetBIOS LIC
QL-227A9-RA	Prot CNX500 Bandw. Res./NetBIOS UPD LIC

Software Update Kits and Licenses for Release 12.0 in Maintenance

4100+ (Non X.25 Only) Software Packages	
QA-MBAAL-H7	4100,SYS,IP,SR,ST
QA-MBAAN-H7	4100,SYS,IP,SR,ST,DNA,IPX,XNS
QA-MBAAP-H7	4100,SYS,IP,SR,ST,DNA,IPX,FRM
QA-MBAAQ-H7	4100,SYS,IP,SR,ST,DNA,IPX,SDL
QA-MBAAR-H7	4100,SYS,IP,SR,ST,DNA,IPX,ESI
QA-MBAAS-H7	4100,SYS,IP,SR,ST,DNA,IPX,APL
QA-MBAAT-H7	4100,SYS,IP,SR,ST,DNA,IPX,APO
QA-MBAAU-H7	4100,SYS,IP,SR,ST,DNA,IPX
QA-MBAAV-H7	4100,SYS,IP,SR,ST,DNA

4100+ X.25 Base Software Packages	
QA-MBAAM-H7	4100,X25,IP,SR,ST
QA-MBAA9-H7	4100,X25,IP,SR,ST,DNA,IPX,XNS
QA-MBAA2-H7	4100,X25,IP,SR,ST,DNA,IPX,FRM
QA-MBAA3-H7	4100,X25,IP,SR,ST,DNA,IPX,SDL
QA-MBAA4-H7	4100,X25,IP,SR,ST,DNA,IPX,ESI
QA-MBAA5-H7	4100,X25,IP,SR,ST,DNA,IPX,APL
QA-MBAA6-H7	4100,X25,IP,SR,ST,DNA,IPX,APO
QA-MBAA7-H7	4100,X25,IP,SR,ST,DNA,IPX

CNX500 (Non X.25 Only) Software Packages	
QA-MBBAL-H7	CNX,SYS,IP,SR,ST
QA-MBBAN-H7	CNX,SYS,IP,SR,ST,DNA,IPX,XNS
QA-MBBAP-H7	CNX,SYS,IP,SR,ST,DNA,IPX,FR/R
QA-MBBAQ-H7	CNX,SYS,IP,SR,ST,DNA,IPX,SDLC
QA-MBBAR-H7	CNX,SYS,IP,SR,ST,DNA,IPX,ESIS
QA-MBBAS-H7	CNX,SYS,IP,SR,ST,DNA,IPX,APLT
QA-MBBAT-H7	CNX,SYS,IP,SR,ST,DNA,IPX,APLO
QA-MBBAU-H7	CNX,SYS,IP,SR,ST,DNA,IPX
QA-MBBAV-H7	CNX,SYS,IP,SR,ST,DNA

CNX500 X.25 Base Software Packages	
QA-MBBAM-H7	CNX,X25,IP,SR,ST
QA-MBBA9-H7	CNX,X25,IP,SR,ST,DNA,IPX,XNS
QA-MBBA2-H7	CNX,X25,IP,SR,ST,DNA,IPX,FR/R
QA-MBBA3-H7	CNX,X25,IP,SR,ST,DNA,IPX,SDLC
QA-MBBA4-H7	CNX,X25,IP,SR,ST,DNA,IPX,ESIS
QA-MBBA5-H7	CNX,X25,IP,SR,ST,DNA,IPX,APLT
QA-MBBA6-H7	CNX,X25,IP,SR,ST,DNA,IPX,APLO
QA-MBBA7-H7	CNX,X25,IP,SR,ST,DNA,IPX

4100+ (Non X.25 Only) Software Update Packages with Implied License	
QL-MBAA9-RA	Update License P4100+
QL-MBBA9-RA	Update License CNX500
QB-MBAAA-AA	4100,SYS,IP,SR,ST
QA-MBAAL-H7	4100,SYS,IP,SR,ST
QB-MBAAB-AA	4100,SYS,IP,SR,ST,DNA,IPX,XNS
QA-MBAAL-H7	4100,SYS,IP,SR,ST,DNA,IPX,XNS
QB-MBAAC-AA	4100,SYS,IP,SR,ST,DNA,IPX,FRM
QA-MBAAP-H7	4100,SYS,IP,SR,ST,DNA,IPX,FRM
QB-MBAAD-AA	4100,SYS,IP,SR,ST,DNA,IPX,SDL
QA-MBAAQ-H7	4100,SYS,IP,SR,ST,DNA,IPX,SDL
QB-MBAAE-AA	4100,SYS,IP,SR,ST,DNA,IPX,ES-IS
QA-MBAAR-H7	4100,SYS,IP,SR,ST,DNA,IPX,ESI
QB-MBAAF-AA	4100,SYS,IP,SR,ST,DNA,IPX,APL
QA-MBAAS-H7	4100,SYS,IP,SR,ST,DNA,IPX,APL
QB-MBAAG-AA	4100,SYS,IP,SR,ST,DNA,IPX,APO
QA-MBAAT-H7	4100,SYS,IP,SR,ST,DNA,IPX,APO
QB-MBAAH-AA	4100,SYS,IP,SR,ST,DNA,IPX
QA-MBAAU-H7	4100,SYS,IP,SR,ST,DNA,IPX
QB-MBAAJ-AA	4100,SYS,IP,SR,ST,DNA

4100+ (Non X.25 Only) Software Update Packages with Implied License	
QA-MBAAV-H7	4100,SYS,IP,SR,ST,DNA

4100+ X.25 Base Software Update Packages with Implied License	
QB-MBAAK-AA	4100,X25,IP,SR,ST
QA-MBAAM-H7	4100,X25,IP,SR,ST
QB-MBAAL-AA	4100,X25,IP,SR,ST,DNA,IPX,XNS
QA-MBAA9-H7	4100,X25,IP,SR,ST,DNA,IPX,XNS
QB-MBAAM-AA	4100,X25,IP,SR,ST,DNA,IPX,FRM
QA-MBAA2-H7	4100,X25,IP,SR,ST,DNA,IPX,FRM
QB-MBAAN-AA	4100,X25,IP,SR,ST,DNA,IPX,SDL
QA-MBAA3-H7	4100,X25,IP,SR,ST,DNA,IPX,SDL
QB-MBAAP-AA	4100,X25,IP,SR,ST,DNA,IPX,ESI
QA-MBAA4-H7	4100,X25,IP,SR,ST,DNA,IPX,ESI
QB-MBAAQ-AA	4100,X25,IP,SR,ST,DNA,IPX,APL
QA-MBAA5-H7	4100,X25,IP,SR,ST,DNA,IPX,APL
QB-MBAAR-AA	4100,X25,IP,SR,ST,DNA,IPX,APO
QA-MBAA6-H7	4100,X25,IP,SR,ST,DNA,IPX,APO
QB-MBAAS-AA	4100,X25,IP,SR,ST,DNA,IPX
QA-MBAA7-H7	4100,X25,IP,SR,ST,DNA,IPX

CNX500 (Non X.25 only) Software Update Packages with Implied License	
QB-MBBAA-AA	CNX,SYS,IP,SR,ST
QA-MBBAL-H7	CNX,SYS,IP,SR,ST
QB-MBBAB-AA	CNX,SYS,IP,SR,ST,DNA,IPX,XNS
QA-MBBAN-H7	CNX,SYS,IP,SR,ST,DNA,IPX,XNS
QB-MBBAC-AA	CNX,SYS,IP,SR,ST,DNA,IPX,FR/R
QA-MBBAP-H7	CNX,SYS,IP,SR,ST,DNA,IPX,FR/R
QB-MBBAD-AA	CNX,SYS,IP,SR,ST,DNA,IPX,SDLC
QA-MBBAQ-H7	CNX,SYS,IP,SR,ST,DNA,IPX,SDLC
QB-MBBAE-AA	CNX,SYS,IP,SR,ST,DNA,IPX,ESIS
QA-MBBAR-H7	CNX,SYS,IP,SR,ST,DNA,IPX,ESIS
QB-MBBAF-AA	CNX,SYS,IP,SR,ST,DNA,IPX,APLT
QA-MBBAS-H7	CNX,SYS,IP,SR,ST,DNA,IPX,APLT
QB-MBBAG-AA	CNX,SYS,IP,SR,ST,DNA,IPX,APLO
QA-MBBAT-H7	CNX,SYS,IP,SR,ST,DNA,IPX,APLO
QB-MBBAH-AA	CNX,SYS,IP,SR,ST,DNA,IPX
QA-MBBAU-H7	CNX,SYS,IP,SR,ST,DNA,IPX
QB-MBBAJ-AA	CNX,SYS,IP,SR,ST,DNA
QA-MBBAV-H7	CNX,SYS,IP,SR,ST,DNA

CNX500 X.25 Base Software Update Packages with Implied License	
QB-MBBAK-AA	CNX,X25,IP,SR,ST
QA-MBBAM-H7	CNX,X25,IP,SR,ST
QB-MBBAL-AA	CNX,X25,IP,SR,ST,DNA,IPX,XNS
QA-MBBA9-H7	CNX,X25,IP,SR,ST,DNA,IPX,XNS
QB-MBBAM-AA	CNX,X25,IP,SR,ST,DNA,IPX,FR/R
QA-MBBA2-H7	CNX,X25,IP,SR,ST,DNA,IPX,FR/R
QB-MBBAN-AA	CNX,X25,IP,SR,ST,DNA,IPX,SDLC
QA-MBBA3-H7	CNX,X25,IP,SR,ST,DNA,IPX,SDLC
QB-MBBAP-AA	CNX,X25,IP,SR,ST,DNA,IPX,ESIS
QA-MBBA4-H7	CNX,X25,IP,SR,ST,DNA,IPX,ESIS
QB-MBBAQ-AA	CNX,X25,IP,SR,ST,DNA,IPX,APLT
QA-MBBA5-H7	CNX,X25,IP,SR,ST,DNA,IPX,APLT
QB-MBBAR-AA	CNX,X25,IP,SR,ST,DNA,IPX,APLO
QA-MBBA6-H7	CNX,X25,IP,SR,ST,DNA,IPX,APLO
QB-MBBAS-AA	CNX,X25,IP,SR,ST,DNA,IPX
QA-MBBA7-H7	CNX,X25,IP,SR,ST,DNA,IPX

SOFTWARE LICENSING

The Proteon Bridging Router System Software license must be purchased with the purchase of the p4100+ or CNX 500 software media. Users must order system software licenses for up to a maximum of six packet forwarders, including bridging. New systems sales (DETAE-BA/BB and DETCG-BA) include the system software, license, and documentation within that option. Bandwidth Reservation and NetBIOS Filtering are not included in the new systems option and must be ordered separately.

Customers may configure any six packet forwarders on the system and packet forwarders may be added as long as the maximum number of forwarders configured on each system is six. Once the six packet forwarders are chosen, customers may not exchange one packet forwarder for another, or they will be in violation of the software and servicing license agreements. The Bandwidth Reservation and NetBIOS Filtering license must be ordered as an additional option and can be configured on the system in addition to the maximum six packet forwarders.

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