Software Product Description

PRODUCT NAME: StrataCom IPX 16/32 Enhanced Frame Relay Software, Versions 5.3 and 6.0   SPD 43.53.00

DESCRIPTION

StrataCom® IPX® 16/32 Enhanced Frame Relay Software is produced by StrataCom, Inc. and distributed, warranted, and serviced by Digital Equipment Corporation. The StrataCom IPX 16/32 System Software provides operating system support for the StrataCom IPX 16 and IPX 32 System Units. The IPX 16/32 Enhanced Frame Relay Software provides an additional software application layer. Together, the IPX 16/32 Enhanced Frame Relay Software, the IPX 16/32 System Software, and the IPX 16 or IPX 32 hardware, provide the functionality described below.

The StrataCom IPX 16 and IPX 32 are digital network processing systems that are used to interconnect computers, PBXs, and other communications equipment in a private corporate network environment. The IPX 16 and IPX 32 are used to build digital networks, integrating data, voice, video, and FAX over high-speed digital transmission services.

The IPX 16 and IPX 32 are large systems capable of backbone network applications, such as interconnecting corporate offices and manufacturing sites. The IPX 16 and IPX 32 are both floor-standing units. The IPX 16 is a single-shelf system with 16 card slots. The IPX 32 is a double-shelf system with 32 card slots. Each system has one or two Processor Control Cards (PCCs) and up to four AC or DC power supplies.

Enhanced Frame Relay (FR)

The Frame Relay feature provides a packet mode interface to private digital networks. Together with FastPacket® switching, the Frame Relay feature supports an integrated high-performance, wide-area data network. It is designed to provide high-speed packet transmission, low network delay, low-bit error rates, and efficient use of network bandwidth. A FastPacket switch, together with the Frame Relay feature, is ideal for bursty, high-speed data such as found in LAN-to-LAN interconnection applications.

The Frame Relay interface simplifies the interface between customer data equipment and the network, so wide-area packet switching can be accomplished with higher levels of performance. Data frames are multiplexed onto a single high-speed line, and the IPX determines where to relay the data frame by means of the frame's address field. Any device can communicate with any other device in the network simply by specifying the address.

Due to resulting increases in bandwidth efficiencies, the network can be implemented with fewer trunks, and the single high-speed line between a router and the IPX eliminates the need to provision the router and IPX with multiple lower-speed ports. In addition, routers can be less expensive because the router needs only enough processing bandwidth to forward and terminate its own traffic without the need to process other "pass-through" network traffic.

The hardware components supporting Enhanced Frame Relay Software consist of a front card and a back card. The front card is called the Frame Relay Pad, Model C (FRP). The back card is called the Frame Relay Interface 2 Mbits, Model B (FRI/V.35).

The FRP Model C has the following features:

- Offers a high-performance packet mode interface into the IPX

- Segments data frames sent into the IPX into cells and then sends the cells into the IPX network for reassembling at the destination

- Supports Permanent Virtual Circuits (PVCs) and Multicast Virtual Circuits (MVCs)

- 252 PVCs per port maximum, 252 PVCs per card maximum

- One MVC per network; four groups; all sources on one card must be in the same group

- Supports ANSI T1.606, T1.618 (except congestion bits), LMI protocol

- An extension to the LMI protocol to respond to requests from a user device for Greenwich Mean Time (GMT)

- Support for congestion bits FECN & BECN as per ANSI T1.618

digital™   **March 1993**

- Frame Forwarding—All frames received on a local FRP port are transmitted via a single PVC to a re- mote FRP port. The DLCI is ignored as well as the LMI, which is turned off on this port.

- Frame Relay Bundles—Frame Relay connections can be bundled together to allow a greater number of connections per node. A bundle consists of a group of one or more contiguous Frame Relay ports.

- User statistics

The FRI/V.35 Model B has the following features:

- Support for four V.35 ports

- Up to 2 Mbps channel speed support on one port

- "Y" cable 1:1 redundancy

- DTE/DCE selectable with jumper cable

- Any one port 1.920 or 2.048 Mbps, other ports at 0, or sum of all active ports less than or equal to 2.048 Mbps (increments of n X 64 Kbits)

Network Configuration Guidelines

Data connections using the Enhanced Frame Relay fea- ture require, at a minimum, that the StrataCom IPX En- hanced Frame Relay Software, Version 5.3 be loaded to two IPX System Units, one at each end of the con- nection. Intermediate IPX System Units within an IPX network need not be loaded with StrataCom IPX En- hanced Frame Relay Software. The intermediate nodes also need to have running, at a minimum, System Soft- ware Release 5.3.

Frame relay connections in an IPX network require, at a minimum, one Frame Relay PAD/V.35 FRI Back Card Pair at one end of the connection. The other end can be a 1 Mbit FRP/FRI card set.

IPX 16 and IPX 32 System Units may coexist in the same IPX network, but all must be operating with the same system software release.

StrataCom IPX 16/32 Frame Relay Software requires PCC-Model E or later, TXR-Model D or later, and PIC- Model B or later, and/or NTC-Model C or later, as well as FRP-Model C and V.35 FRI Back Card-Model B within the IPX System Unit in which the software is loaded.

INSTALLATION

The StrataCom IPX 16/32 Enhanced Frame Relay Soft- ware is factory loaded in Flash EPROM, which resides on the Processor Control Card within the StrataCom IPX 16/32 System Hardware Unit. However, the Enhanced Frame Relay functionality must be keyed on via a soft- ware switch.

The purchase of an Enhanced Frame Relay Software License includes remote turn-on of Frame Relay func- tionality.

Digital further recommends that installation services be purchased with this product. These services provide for installation and parameter setting of the hardware and software by an experienced Digital specialist.

Customer Responsibilities

Before Enhanced Frame Relay installation can be done by Digital, the customer must:

- Ensure all prerequisite Frame Relay hardware and software requirements are meet.

- Make available for a reasonable period of time, as mutually agreed to by Digital and the customer, all hardware, communication facilities, and terminals that are to be used during installation.

- Make available a modem and telephone line for re- mote installation.

HARDWARE REQUIREMENTS

One of the following system hardware units is required to run the StrataCom IPX 16/32 Frame Relay Software Product.

StrataCom IPX 16 CEPT/CISPR System Unit, Processor Control Card Model H, Flash EPROM, 48VDC, 600W power supply, StrataCom IPX 6.0 System Software License	DIXSA-BJ
StrataCom IPX 16 CISPR System Unit, Processor Control Card Model H, Flash EPROM, 48VDC, 600W power supply, StrataCom IPX 6.0 System Software License	DIXSA-BK
StrataCom IPX 16 CEPT/CISPR System Unit, Processor Control Card Model H, Flash EPROM, 240VAC, 600W power supply, StrataCom IPX 6.0 System Software License	DIXSA-BL
StrataCom IPX 16 CISPR System Unit, Processor Control Card Model H, Flash EPROM, 208VAC, 600W power supply, StrataCom IPX 6.0 System Software License	DIXSA-BM

StrataCom IPX 32 CEPT/CISPR System Unit, Processor Control Card Model H, Flash EPROM, two 48VDC, 600W power supplies, StrataCom IPX 6.0 System Software License	DIXSA-CJ
StrataCom IPX 32 CISPR System Unit, Processor Control Card Model H, Flash EPROM, two 48VDC, 600W power supplies, StrataCom IPX 6.0 System Software License	DIXSA-CK
StrataCom IPX 32 CEPT/CISPR System Unit, Processor Control Card Model H, Flash EPROM, two 240VAC, 600W power supplies, StrataCom IPX 6.0 System Software License	DIXSA-CL
StrataCom IPX 32 CISPR System Unit, Processor Control Card Model H, Flash EPROM, two 208VAC, 600W power supplies, StrataCom IPX 6.0 System Software License	DIXSA-CM

Other Hardware Requirements

Frame Relay PAD Group Modules

In each node supporting Frame Relay functionality, a minimum pair of modules consisting of the following is required:

• Frame Relay PAD Model D (FRP): DIXFA-AD

• FRI Back Card/4 Port/V.35 Model B: DIXFA-BB

Remote Diagnostic Service—As part of Digital's set of integrated product services, remote diagnostic support of the StrataCom IPX 16 and IPX 32 may be available from a Digital Support Center. To receive this remote diagnostic service, a CCITT V.32 compliant, 9600bps, full duplex, asynchronous modem is required to be connected to the CONTROL TERMINAL PORT (RS232) on the Processor Control Card located in the StrataCom IPX System Hardware Unit. The customer must maintain a dial-in communications line to the modem.

Remote Alarm Monitoring—Remote alarm monitoring is another available service feature and requires that an additional dial-out modem connected to the AUX PORT (RS232) on the Processor Control Card.

OPTIONAL HARDWARE

No optional hardware related to Frame Relay is available. The IPX 16 and IPX 32 can be uniquely configured to fit the requirements of the customer's network. A number of other hardware options are available. Refer to the StrataCom IPX 16/32 System Software Product Description (SPD 45.43.xx) and StrataCom IPX 16/32 DFM Software Product Description (SPD 38.36.xx) for more information.

SOFTWARE REQUIREMENTS

None

SOFTWARE LICENSING

A separate Enhanced Frame Relay software license is required for each StrataCom IPX 16 or IPX 32 System Hardware Unit that will run the Frame Relay feature within the customer's IPX network. The software may be copied in its entirety solely for backup or archival purposes, or for downline loading to all properly licensed StrataCom IPX System Hardware Units within a network.

This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

ORDERING INFORMATION

Software License: QB-MTWAA-WA

SOFTWARE PRODUCT SERVICES

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

SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product. The software product is warranted to conform to the Software Product Description (SPD). Digital will remedy any nonconformance when it is reported to Digital by the customer during the warranty period.

The warranty period is one year. The warranty period begins when the software is installed or thirty days after delivery to the end user, whichever occurs first, and expires 360 days later. All warranty related support for this software will end 180 days after release of a subsequent version.

Warranty is provided in the country of purchase in accordance with the provisions of Digital Equipment Corporation's Standard Terms and Conditions of Sale. Digital will provide the following services if the customer encounters a problem when using licensed software under normal conditions as defined by the SPD:

• If Digital also determines the problem to be a defect in the Software Product, Digital will provide remedial service on site if necessary to apply a temporary correction or make a reasonable attempt to develop an emergency bypass if the software is inoperable.

• Assist the customer in preparing a Software Perfor-
mance Report (SPR). If a customer diagnosis indi-
cates the problem is caused by a defect in the Soft-
ware Product, the customer may submit an SPR to
Digital.

Digital will respond to a problem reported in an SPR that
is caused by a defect in the current, unaltered release
of the Software Product. The response will provide tem-
porary corrections, useful emergency by-passes and/or
notice of the availability of the corrected software code.

Telephone support may be available from the Digital
Telephone Support Center. Please contact your local
Digital office for information on the provision of tele-
phone support as part of the warranty.

DIGITAL DOES NOT WARRANT THAT THE SOFT-
WARE LICENSED TO THE CUSTOMER SHALL BE
ERROR FREE, THAT THE SOFTWARE SHALL OP-
ERATE WITH ANY HARDWARE AND SOFTWARE
OTHER THAN SPECIFIED IN THIS SPD, THAT THE
SOFTWARE SHALL SATISFY THE CUSTOMER'S
OWN SPECIFIC REQUIREMENTS, OR THAT COPIES
OF THE SOFTWARE OTHER THAN THOSE PRO-
VIDED OR AUTHORIZED BY DIGITAL SHALL CON-
FORM TO THE SPD. DIGITAL MAKES NO WAR-
RANTIES WITH RESPECT TO THE FITNESS AND OP-
ERABILITY OF MODIFICATIONS NOT MADE OR AU-
THORIZED BY DIGITAL.

IF THE SOFTWARE FAILS TO FUNCTION FOR REA-
SONS OTHER THAN STATED ABOVE, THE CUS-
TOMER'S WARRANTY WILL BE INVALIDATED AND
ALL SERVICE CALLS WILL BE BILLABLE AT THE
PREVAILING PER CALL RATES.

®   StrataCom, FastPacket, and IPX are registered trade-
marks of StrataCom, Inc.

™   The DIGITAL Logo, DEC, and Digital are trademarks of
Digital Equipment Corporation.