Software Product Description

PRODUCT NAME: PBXserver, Version 2.1 **SPD 29.23.02**

DESCRIPTION

The PBXserver is an Ethernet based terminal server. It links to Digital PBXs via a European-standard 30-channel interface and allows terminals connected to a terminal adapter/telephone set to use VMS host services on Ethernet through the PBX and its associated building wiring.

The interface between the PBXserver and the PBX runs at 2.048Mbps. It is called "ECMA S2" interface, based on the "ISDN primary rate interface, 30B+D", and carries 30 data communications simultaneously. It is fully described by a set of ECMA standards, based on CCITT recommendation for ISDN, as listed in Appendix A.

The terminal user has to establish a connection to the PBXserver by "dial-in" through the terminal adapter/telephone set and the PBX. Once connected to the PBXserver, the user has the same general functionality as a user of the DECserver terminal servers and can manage several sessions on several services. Note that the "dial-in" procedure is PBX-specific.

The PBXserver also allows for VMS host-initiated connections to asynchronous printers. This allows the printers to be distributed throughout a facility through the PBX's ports and accessed transparently by service node users. Incoming host-initiated connect requests may be queued FIFO at the PBXserver.

The purpose of using a PBX for terminal access to services on Ethernet is to have a higher number of POTENTIAL users than ACTUAL users; a concentration factor between 5:1 and 3:1 is reasonable for an office environment. With 30 data communications supported by the ECMA S2 link, 90-150 occasional users can be supported.

The PBXserver software is down-line loaded into PBXserver hardware from a VAX/VAX/VMS host system running DECnet/VAX. Then, users may access Ethernet-based MicroVAX VMS host services via LAT protocol.

Two types of user interfaces are provided:

- To the terminal user
- To the privileged user (system manager)

Terminal User Interface

The user first has to "dial in" through the terminal adapter/telephone set and the PBX. Once the circuit is established, the user enters the LOCAL mode of the PBXserver.

In LOCAL mode the user may:

- DISPLAY the list of authorized host services and their shortnames
- CONNECT to any authorized VMS host service on Ethernet, setting up for each terminal up to 8 sessions at the same time
- RESUME a session which has been interrupted by using the BREAK Key
- SHOW SESSION list the current sessions
- BACKWARD, FORWARD select a session
- DISCONNECT from the session
- SET and SHOW terminal parameters, and retain them
- COMMUNICATE to a host service, once it is connected, through the Local Area Transport (LAT) architecture
- Obtain HELP for the user commands
- LOGOUT to break the connections with the PBXserver and the PBX

Once connected to a host service, the user is in SERVICE mode. In SERVICE mode, the user can work with any application in a transparent manner. The user can interrupt a session with the BREAK Key, create another session or DISCONNECT from the current service.

Privileged User Interface

An interface to a privileged operator is provided in order to:

- SET and SHOW terminal and printer ports parameters and retain them
- SET and SHOW PBXserver parameters, and retain them
- SHOW PBXserver statistical informations

- DISCONNECT all terminals
- PERFORM PBX maintenance functions
- MANAGE the PBXserver
- DEFINE the line characteristics, service shortnames
- Obtain HELP for the privileged commands

Terminal Characteristics

The PBXserver supports the simultaneous operation up to 30 asynchronous terminals, including keyboard send-receive (KSR-) printers and PCs.

Printer Characteristics

The PBXserver software support all the DIGITAL asynchronous serial (RS-232c) printers when accessed from VMS and MicroVMS systems using XON/XOFF protocol.

Additional Features

- XON/XOFF flow control between terminal and the PBXserver. It can be dynamically enabled or disabled.
- Switching to different host services from the LOCAL prompt of the PBXserver without having to re-dial the connection through the PBX.
- Access control by group codes limiting accessibility of certain hosts to terminals.
- Direct Inward Dialing through the PBX for fast connection to a host service.

Restrictions On PBXserver Usage

Due to an XOFF maximum delay of 60 ms in the PBXserver, it is recommended to set VT100 terminals to 2400 bps to avoid the risk of data loss.

The throughput of the PBXserver may be degraded when the number of host services is more than 8 and/or too many terminals or printers work at 19200 baud. Depending on the configuration, the privileged command DEFINE SERVER or SET SERVER allows the user to tune PBXserver by modifying the maximum number of allowed terminals and the maximum number of host services.

The PBXserver support up to 8 sessions by terminal and up to 6 printers queuing up to 40 requests.

INSTALLATION

Only experienced customers should attempt installation of this product. DIGITAL recommends that all other customers purchase DIGITAL's Installation Services. These services provide for installation of the software product by an experienced DIGITAL Software Specialist.

The installation service includes:

- Installation of the PBXserver, V2.1 software on one DECnet VAX or MicroVAX host
- Configuration of the PBXserver unit on that load host
- Configuration of the LAT service node software on one service node
- Installation verification and checkout

Customer Responsibilities

Before installation of the software, the customer must:

- Previously have installed all prerequisite hardware.
- Obtain, install, and demonstrate as operational all other communications equipment and facilities necessary to interface to DIGITAL's equipment. This includes the equipment which is the PBX supplier's responsibility, in particular the hardware and software upgrades of the PBX, the telephone sets with separate or built-in terminal adapters, and the 2Mbps cable between the PBX and the PBXserver. Note: The PBX supplier is responsible for soldering the 2Mbps cable to the S2 connector of the PBXserver.

HARDWARE REQUIREMENTS

VAX, MicroVAX or VAXstation configuration as specified in the System Support Addendum (SSA 29.23.02-x).

SOFTWARE REQUIREMENTS*

MicroVMS Operating System or VMS Operating System

DECnet-VAX

* Refer to the Support System Addendum for availability and required versions of prerequisite software (SSA 29.23.02-x).

ORDERING INFORMATION

Software Licenses: QL-VCCE*-**
Software Media: QA-VCCE*-**
Software Documentation: QA-VCCEA-GZ
Software Product Services: QT-VCCE*-**

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

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

SOFTWARE LICENSING

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

License Management Facility Support

This layered product supports the VMS License Management Facility. License units for this product are allocated on a CPU-capacity basis.

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

For more information about DIGITAL's licensing terms and policies, contact your local DIGITAL office.

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

APPENDIX
LIST OF STANDARDS

List of ECMA Technical Reports

	TITLE OF DOCUMENT	ECMA STANDARD	CCITT REC.
1.	Interface between Data Processing Equipment and PABXT	ECMA TR24	
2.	Rate Adaption for the Support of Synchronous and Asynchronous Equipment Using the V.Series Type Interfaces on a PCSN	ECMA STD102	V.110
3.	Specification of the Physical Layer at the Primary Rate Access Interface Between Data Processing Equipment and PCSN	ECMA STD104	I.431
4.	Data Link Layer Protocol Specification for the D Channel of the S Interfaces Between Data Processing Equipment and PCSN	ECMA STD105	Q.921
5.	Layer 3 Protocol Specification for the Signaling on the D Channel of the S Interfaces Between Data Processing Equipment and PCSN	ECMA STD106	Q.931
6.	Technical Report on the Maintenance of Data Terminal Equipment to PCSN Interfaces	ECMA TR34	