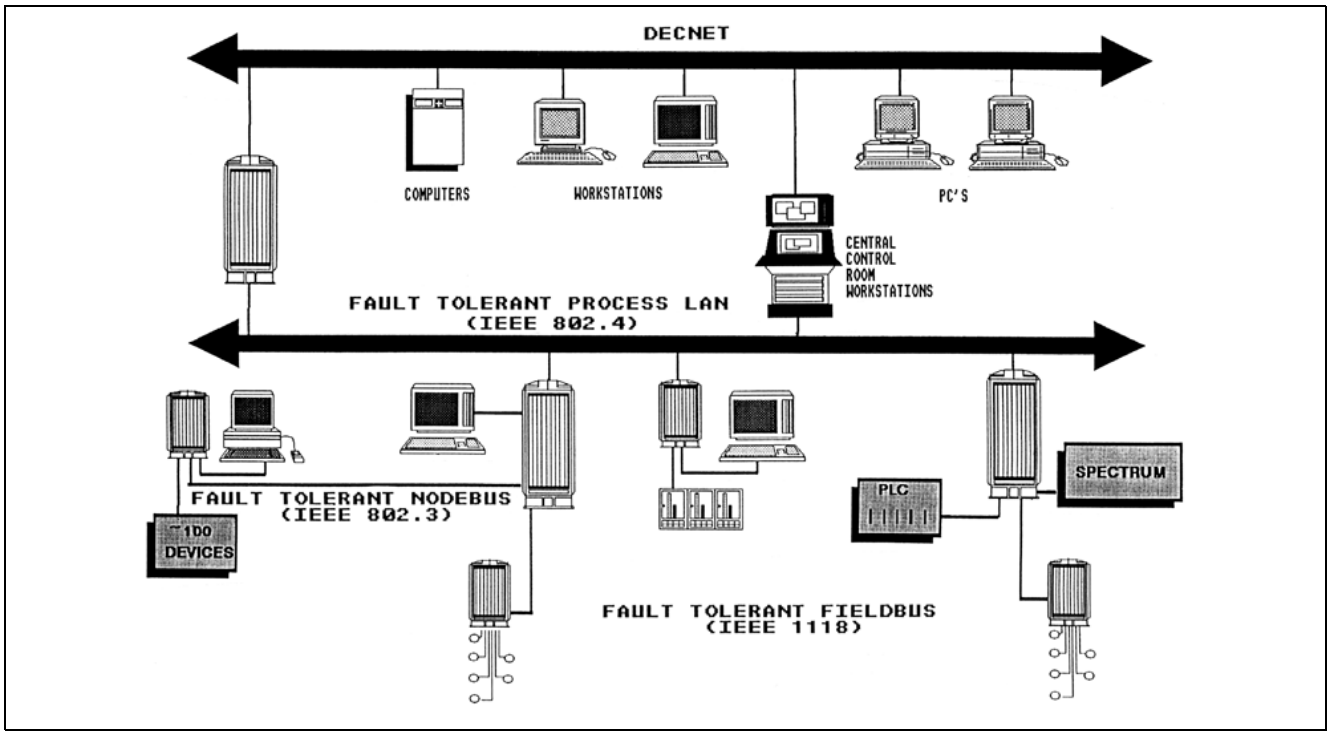
# I/A Series® Software
# 50 Series DECnet Connectivity




*DECnet Interface Software provides secure access, and enables bidirectional interactions with DECnet VAX or PDP-11 systems.*

DECnet Interface (DNI) is an optional part of the open I/A Series networking capability. It allows integration of Foxboro I/A Series systems into existing DECnet VAX or PDP-11 computer networks by using communications protocols and connectivity software loaded into 50 Series stations. Communication on the DECnet network is accomplished through a direct network interface (optional Ethernet port) on an I/A Series Application Processor, Workstation Processor, or Application Workstation. The communications/network software enables the 50 Series workstations and APs to communicate and share resources with the DECnet systems. Specifically, the software:

- Allows bidirectional remote login and file transfer between I/A Series systems and DECnet systems via 50 Series stations
- Supports a window based VT100 emulation tool on WPs and AWs
- Provides X Window support for transparent display of DECWindows/Motif applications on 50 Series workstations directly connected to DECnet
- Includes DECnet network management tools for maintenance and monitoring
- Contains VMSmail gateway facility, allowing I/A Series and DECnet VAX users to exchange mail via 50 Series stations
- Supports I/A Series/DECnet task-to-task communication and record level file access

Coordinated applications are possible using remote login, file transfer, and remote directory listing. There are two levels of program interfaces: a task-to-task interface for developing distributed applications, and network file access routines for accessing remote DEC file systems. Also available are window based display interaction and VT100 emulation, bidirectional file transfer between I/A Series systems and DEC systems (via 50 Series stations) DECnet network management/monitoring tools, and applications programming interface.

As a general connectivity option, DNI allows transparent communication between local I/A Series users and remote or corporate DECnet based systems via 50 Series stations.

### BIDIRECTIONAL REMOTE LOGIN

I/A Series users can remotely log into a DECnet system on Ethernet and interact with the remote node as local users. All commands are interpreted and all desired operations are performed by the operating system of the remote DEC node as if a terminal were directly attached. For example, as a 50 Series user, you can log into a remote DEC node, edit a file residing on that node, direct a file to be printed on the remote system's printer, or compile a program using the remote system's compiler. This capability also extends to DECnet nodes that are running a virtual terminal server using the DECnet Command Terminal (CTERM) Protocol.

DNI also includes a virtual terminal server that allows users on DEC nodes to remotely log into a 50 Series station and interact directly with I/A Series applications. The virtual terminal server can be accessed from Phase IV DECnet nodes running a CTERM virtual terminal client, which is typically invoked using the set host command on DEC nodes.

### BIDIRECTIONAL FILE TRANSFER

Through DNI you can transfer files to and from DEC systems running DECnet Phase IV. The file transfer command line consists of a command verb followed by access control information and specifications of local and remote files. If you supply no access control information, DNI will use the 50 Series user ID to attempt a proxy login to the remote DEC node. The file transfer command automatically takes into account the differences in file formats of DEC and I/A Series systems.

### WINDOW BASED VT100 EMULATION

DNI includes a VT100 emulator that runs in the windows environment for 50 Series workstations. By using this software, a WP/AW window emulates a VT100 display terminal. The emulator supports user definable keyboard mapping between the 50 Series keyboards and the VT100 keyboard. Mapping is active automatically only when the cursor is in the emulator window on the WP or AW. Several character sets are supported, including ASCII, United Kingdom, and Special Graphics. You can easily cut and paste between the emulator window and other WP/AW windows using a mouse or trackball.

### X WINDOW SUPPORT FOR CLIENT DECWINDOWS/MOTIF APPLICATIONS

DNI allows 50 Series workstations (that run the OPEN LOOK Window Manager) to transparently access and display the user interface portion of client DECWindows/Motif applications running on remote VAX systems. Window based interaction offers advantages over the traditional terminal emulation method of accessing applications on remote hosts. For example, you can concurrently use several graphic or text based applications. DECWindows/Motif provides a uniform graphic user interface across all DEC operating systems and hardware platforms supporting DECnet transport protocols.

### NETWORK MANAGEMENT

DNI provides user and resource management/ monitoring tools, and a network management platform for distributed DECnet networks. The DNI proxy agent allows the exchange of network management information between DEC Network Information and Central Exchange (NICE) protocol and the 50 Series stations.

The proxy agent acts as a protocol translator for gathering information from DECnet machines and sending it to the 50 Series stations. The proxy agent translates I/A Series generated network manager requests into NICE commands and issues them to DECnet systems.

## DEC VMS MAIL GATEWAY SUPPORT

DNI allows electronic mail transfer in a DECnet VMS environment. The VMS Mail Gateway allows 50 Series stations to send and receive electronic mail from users located on DEC VAX nodes running the VMS operating system. This is accomplished by switching to and from 50 Series and DEC VAX/VMS mail utilities.

The 50 Series DNI VMS Mail program works directly with the “send mail” program. No special commands are needed to send or receive mail. 50 Series mail tools let you read and compose messages and resolve aliases for VAX/VMS recipients.

There are two ways to address electronic mail: direct and indirect. Direct addressing allows the vax_user address to be specified without going through an intermediate gateway name node. Indirect addressing requires a 50 Series DNI mail gateway to determine the destination VAX node.

## DECNET NETWORK CONTROL PROGRAM (NCP) FACILITY

DNI provides user support through the "dnicp" utility for the DECnet NCP facility for network management. Dnicp provides a set of interactive commands to configure, control, monitor, and test the DECnet network and to ensure its effective operation. NCP allows network managers to change parameters, reset counters, copy information from a remote node to a local node, and gather information to monitor and test the operation of the network.

## DECNET TASK-TO-TASK PROGRAMMING INTERFACE

A programmatic interface to the Digital Network Architecture session layer is included in DNI. This interface is implemented using a 50 Series device driver, and can be used to write distributed applications between I/A Series systems and DEC machines running DECnet Phase IV. It is also useful for porting distributed applications from a DEC environment to a mixed I/A Series and DEC configuration.

The DNI session layer interface supports communication between processes running on 50 Series and DEC systems using the DECnet nontransparent mode of task-to-task communication. The interface includes capabilities for interprocess connection establishment, data transfer, and link shutdown. The session layer interface allows both packets and message based interfaces for task-to-task communication. This eases porting DECnet task-to-task programs to mixed I/A Series and DEC environments and improves performance for bulk data transfer.

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