digital™

Service Tool Description

PRODUCT NAME

This paper describes the **DSNlink Version 2.1A for Digital UNIX** software. For convenience, the full name is abbreviated to DSNlink.

DESCRIPTION

DSNlink is a service tool that allows customers with service contracts to receive product support electronically from their Customer Support Center. Using DSNlink, customers submit and track service requests, copy files, perform searches of technical support databases, and send mail pertaining to products for which they have service contracts. Digital specialists respond electronically to service requests. If granted permission by the customer, specialists can also log in to the customer's system to diagnose and correct problems remotely.

DSNlink provides the communications software necessary to connect to and maintain connections between a customer's DSNlink system and the Digital host. Furthermore, to prevent impersonation and unauthorized access, DSNlink connections undergo a rigorous cryptographic authentication and authorization process.

REQUIREMENTS FOR USING DSNlink

This service tool is available to entitled customers who have direct connections to Digital via one of these network transports:

- TCP/IP—Direct connection capabilities such as Telnet access are required. Mail-only access is not sufficient.
- A public X.25 network—The X.25 transport is not available from all Customer Support Centers.
- Digital's DECnet
- A modem transport over PSTN or ISDN lines

Customers must meet any non-commercial use requirements imposed by their network.

WHO CAN USE DSNlink?

To use DSNlink, customers must have a service contract with Digital that meets the requirements of their Customer Support Center. There is no additional charge for the DSNlink software. However, customers must register to use DSNlink.

APPLICATIONS

DSNlink has these applications:

- Service Request
- Interactive Text Search
- File Copy
- DSNlink Mail
- Remote Login

The following is an overview of the applications.

The Service Request Application

The Service Request application allows the customer to get product support from a specialist at the Customer Support Center. The customer performs the following operations electronically using the Service Request application:

- Send a service request to Digital
- Add additional information to a service request being processed
- Review the work performed by specialists on a service request
- Obtain lists of open and closed service requests
- Obtain the list of products with service contracts
- Obtain a list of routing codes for their supported products

NOTE

Some Customer Support Centers cannot provide lists of closed service requests and supported products.

The Interactive Text Search Application

The Interactive Text Search application (ITS) allows customers to perform searches on the technical support databases related to their supported products. The databases have engineering change orders (ECOs), articles on solved problems, Software Product Descriptions, new product information, and so forth. ITS allows customers to perform operations such as searching databases, reading and extracting articles, and copying ECOs to their systems.

The File Copy Application

The File Copy application supports file copying to and from the customer's system and the Digital host. The files usually pertain to service requests or are submitted for analysis. Files can be in text or binary format.

The DSNlink Mail Application

The DSNlink Mail application allows customers and Digital to exchange mail. Digital uses DSNlink Mail to send these types of mail to customers:

- **Flash** mail has urgent product information, such as announcing software engineering change orders (ECOs).
- **Information** mail is general product information.
- **Business** mail explains new products and services and provides information about updates to existing products and services.
- **Survey** mail requests customers' opinions on Digital services and product quality.

Some Customer Support Centers process service requests in DSNlink Mail.

UTILITIES and MAINTENANCE FEATURES

DSNlink has these utilities and maintenance features:

- A **local authorizations file** allows the system administrator to specify which local users have access to DSNlink applications.
- A **remote access file** allows the system administrator to specify which remote users have access to DSNlink applications such as the Remote Login application.
- A **history log** keeps a usage history of DSNlink applications.
- The **DSNlink Setup** utility allows the system administrator to modify various DSNlink communication attributes, create mailing lists for Digital mail to customers, display the version number of DSNlink images, and perform several other administration tasks.
- The **Network Exerciser** utility tests the connections between your system and Digital and allows users to troubleshoot network problems.
- DSNlink creates **log files** for each connection.

Customers can modify the supplied configuration file to automatically supply default values required by the applications. These default values appear in the window and dialog box fields. In the command line interface, DSNlink automatically supplies values from the configuration file. Users can override these default values if desired.

USER INTERFACES

DSNlink has two user interfaces for each application:

- A windows interface based on OSF/Motif®
- A command line interface

SOFTWARE and HARDWARE REQUIREMENTS

DSNlink runs on Digital Alpha AXP™ systems.

The supported versions of the operating system are Digital UNIX Version 3.2, Version 3.2C, and Digital UNIX Version 4.0.

The necessary software for Digital UNIX is the DEC OSF/1 Base System (OSFBASE), which must be loaded on the system where DSNlink is installed.

Diskless workstations are not supported.

MEMORY REQUIREMENTS

The minimum supported memory for this application running in a standalone DECwindows environment with both the client and server executing on that same system is 32 MB.

DISK SPACE REQUIREMENTS

The following table shows the free space required to install DSNlink.

Operating System	/usr	/var
Digital UNIX	14.0 MB	1.0 MB

GROWTH CONSIDERATIONS

The minimum hardware and software requirements for any future version of this product may differ from the minimum requirements for the current version.

DISTRIBUTION MEDIA

The DSNlink kit is available on CD–ROM media.

DSNlink COMMUNICATIONS

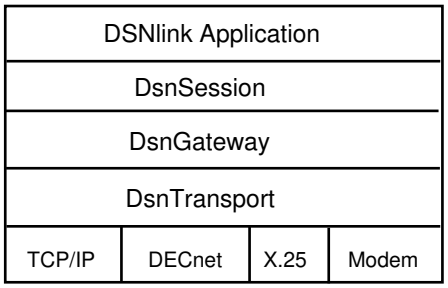
The following sections provide a high-level overview of the communication mechanisms used within DSNlink:

- An architectural overview
- Domain and node identifiers
- Protocols used by the DSNlink communication software
- Details about the use of DSNlink applications over a TCP/IP network such as the Internet

DSNlink Architectural Overview

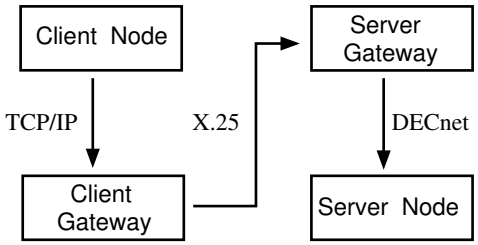
DSNlink provides secure communications even in a hostile networking environment. The architecture, a client/server model, defines five layers: DSNlink Application, DsnSession, DsnGateway, DsnTransport, and the networks. The layers are arranged as shown in Figure 1.

Figure 1
DSNlink Communications Layers



- The **DSNlink Application layer** provides services for a specific application.
- The **DsnSession layer** provides data security through compression and cryptographic authentication. The DsnSession layer assumes that the underlying layers provide no security. An established connection at this layer guarantees the identity of the client and server to each other.
- The **DsnGateway layer** allows an unlimited number of systems to communicate using heterogeneous protocols. Figure 2 shows gateway nodes connecting heterogeneous protocols between client and server nodes.

Figure 2
Gateways and Heterogeneous Network Protocols



The DsnGateway layer uses a routing database called the route map to manage connections.

- The **DsnTransport layer** selects the appropriate transport and resolves differences between message-oriented network protocols such as X.25 and stream-oriented protocols such as TCP/IP by providing a stream-oriented interface to the DsnGateway layer.
- The host operating system provides the networks.

DSNlink Domains and Nodes

DSNlink uses domain and node names to identify individual systems.

A DSNlink **domain name** is an enterprise-wide name used for security and obligation purposes. Digital uses a customer's access number, obligation identifier, hardware model number, or contract number as the DSNlink domain name. Digital uses the word "Digital" as its DSNlink domain name. Authentication keys are identified based on this source domain and destination domain relationship.

A DSNlink **node name** identifies a system within a DSNlink domain. This relationship allows multiple nodes running DSNlink Version 2.0 or Version 2.1 to use the same domain name. A DSNlink node may exist in more than one DSNlink domain, which allows one DSNlink node to choose among multiple access numbers. Usually the DSNlink node name is the IP host name or DECnet node name of the system.

Protocols

The Application, DsnSession, and DsnGateway layers each use their own protocols to provide the necessary services. The DsnTransport layer does not add any protocol to the underlying raw transport.

- The **DsnGateway protocol** performs redirecting and forwarding functions, which provide connection failover and hopping from one network protocol to another.
- The **DsnSession protocol** provides a session context with source and destination identities. Each identity consists of a domain, node, and user tuple. DsnSession performs authentication with a three-way cryptographic challenge-response handshake. Currently, an MD5-based secret key method is used.
- Each **application** has its own protocol which includes an authorization check. Because the identities have been validated by the DsnSession layer, the application server uses the client's domain, node, and user DsnSession attributes.

Configuring Firewalls to Use TCP/IP with DSNlink Applications

Customers must configure their firewalls to permit communications between their systems and Digital. The following is a list of TCP/IP ports used by DSNlink applications.

Port	Abbreviation	Application
2370	dsn_nsd	Name Server Directory
2371	dsn_copy	File Copy
2372	dsn_mail	DSNlink Mail
2373	dsn_its	Interactive Text Search
2374	dsn_login	Remote Login
2375	dsn_netex	Network Exerciser
2376	dsn_sra	Service Request Application

SECURITY FOR APPLICATIONS

The following sections explain the security measures for each DSNlink application. All applications create log files on both the customer's and Digital's systems which record activity by the applications.

NOTE

Although DSNlink offers cryptographically strong authentication, DSNlink does not provide encryption.

- The **Name Server Directory** application performs connection forwarding and redirecting services in the DsnGateway layer. This application accesses only the route map database. It never accepts a DsnSession layer connection.
- The **File Copy** application transfers files between a vendor and a customer. Digital cannot copy files to or from a customer's system unless the customer's remote authorizations file permits access by Digital. If access is allowed, Digital is restricted to copying files to and from specific incoming and outgoing directories.
- The **DSNlink Mail** application sends mail messages between systems. The customers' remote access file must permit access by the DSNlink Mail application. The DSNlink mail server interacts only with the mail agent on the customer system.
- The **Interactive Text Search** application allows a customer to access articles in Digital's technical support databases. This is a customer-to-Digital connection only. DSNlink cannot connect to a customer's system using the Interactive Text Search application.
- The **Remote Login** application allows a Digital specialist to log in to a customer's system. In addition to the authentication performed by the DsnSession layer, a Digital specialist needs a valid user name and password to log in. As an additional safeguard, the original DSNlink kit's remote access file disallows this application; it must be manually enabled by the customer.
- The **Network Exerciser** application performs simple loopback tests. DSNlink uses it for installation verification procedures. It also provides troubleshooting for DSNlink much like "ping" does for IP and "ncp loop node" does for DECnet. Except for its log file, the Network Exerciser application does not access files on the customer's system. Customers can use the remote access file to control access by the application.
- The **Service Request** application allows customers to submit electronic service requests to Digital. Specialists reply through the DSNlink Mail application. The Digital host cannot use the Service Request application to connect to a customer's system.

ORDERING INFORMATION

Contact your Digital Account Support Representative or call your local Customer Support Center.

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