Software Product Description

PRODUCT NAME: InfoServer Software, Version 3.5 **SPD 33.20.12**

DESCRIPTION

InfoServer Software is the software component of a special-purpose hardware/software system that makes up an InfoServer Ethernet-based storage server. This product supports locally attached SCSI CD-ROMs, SCSI disk drives, magneto-optical drives, and SCSI tape drives.

The server contains 4 MB of memory, of which 3 MB can be used for cache. The InfoServer 1000 system box by itself does not contain any storage, although certain InfoServer 1000 system packages include CD-ROM drives or hard disks. Note that the InfoServer software and function updates require either a directly-connected CD-ROM drive or access to a CD-ROM drive connected to another InfoServer in the LAN.

The rights to connect to the InfoServer are granted with the InfoServer system license. Supported clients are described in the *SOFTWARE REQUIREMENTS* section of this SPD.

Using the InfoServer in a client-server environment, clients can access server-based storage. The InfoServer can serve virtual disks, both physical disk media and sets of logical disk blocks, to the network. Client systems running appropriate client software can connect to devices served by the InfoServer, and use them as though they were locally attached devices.

InfoServer 1000 systems are shipped with the Disk Function Access enabled. With this function, clients can access and share CD-ROMs, hard disks, and magneto-optical drives attached to the InfoServer. Please refer to the *OPTIONAL SOFTWARE* section of this SPD.

With the Tape Function Access option, OpenVMS clients can also share SCSI tape devices attached to the InfoServer. Clients can use this feature to perform remote incremental backup and software distribution as if the tape devices were locally attached. Full standalone backup is not supported. Please refer to the *OPTIONAL SOFTWARE* section of this SPD.

Specialized software protocols provide access to the server on the LAN. These protocols are Local Area Transport (LAT) for remote management, LASTport and LASTport/Disk for virtual disk access, LASTport/Tape for SCSI tape access, and Maintenance Operations Protocol (MOP) for downline loading.

InfoServer operation across low-speed bridges is possible; however, the underlying LASTport protocol assumes a low rate of packet loss. Therefore, low-speed bridges may cause significant performance degradation. For this reason, operation of the InfoServer is supported only over 10 megabit bridges.

Features

Preinstallation of InfoServer Software with Simplified Updating

Customer or field service installation of InfoServer software on the system is not required. The server boots when powered-on. For the InfoServer 1000, the InfoServer software is in a FLASH ROM on the system board. A simple server command is provided to update the InfoServer software from CD-ROM, locally connected or connected to another InfoServer on the same LAN.

Network Updating

The InfoServer software allows system managers to update an InfoServer system from a compact disc mounted on another InfoServer system on the LAN.

The InfoServer 1000 system FLASH ROM may also be updated by downline loading of an appropriate image via MOP. This image is provided on the InfoServer kernel distribution CD-ROM. The MOP server may be another InfoServer (100, 150, 150VXT or 1000) or an OpenVMS system with an attached CD-ROM drive in the same LAN.

All update operations (FUNCTIONS, MOP, SYSTEM, and VXT) are supported using the BIND and UNBIND commands and the existing UPDATE commands.

Autoconfiguration (Automount)

The server autoconfigures devices based on the volume label and automatically creates service names for media present on the server. The InfoServer recognizes the following formats (for both single and multiformat CD-ROMs): ISO 9660, High Sierra, ULTRIX UFS, ODS-2, and Apple® HFS.

Local and Remote Management Capability

The server can be managed by either a locally attached console (not supplied) or a remote LAT terminal. Local and remote console capabilities include configuration management, diagnostic information (built-in self-test and diagnostic messages), and server control.

A local console is not required for the default mode of unattended operation, but may be helpful in diagnosing hardware or software problems.

Password Protected Management Interface

A password-protected management interface allows control and monitoring of server activity, with auto-prompting at any point in the command sequence, command-line recall, and built-in help.

Server Access Control

Every InfoServer, and its corresponding set of clients, is a member of a single LASTport group. A LASTport group is a mechanism used by the InfoServer software to logically subdivide the InfoServer network. Client systems and InfoServers must belong to the same LASTport group for clients to access virtual disks on the InfoServer. Up to 1,024 LASTport groups can coexist in a single LAN.

Device Access Control

The number of connections allowed to a service or virtual disk can be set. This can be used to manage the number of users allowed to access a given application or data.

Multiple Read/Write Virtual Disks on a Single Physical Disk

The InfoServer can serve read/write disk partitions. A partition is a logical subset of a read/write disk. A single disk can be subdivided into several partitions, each of which can be served to the network independently as a virtual disk. The access mode supports a single writer or multiple readers, but not both concurrently (to prevent accidental corruption of data on the disk).

Read/Write Data Back-Up

Back-up operations can be performed locally via server commands or remotely using client-specific utilities.

InfoServer Tape Function for Remote Back-up

With the Tape Function Access option, customers can perform back-ups via SCSI tape devices on the InfoServer.

Note: The InfoServer is not meant as an optimal performance controller for all tape devices. Rather, use of the tape function with InfoServer is provided as a means of convenience for sharing a seldom-used and costly device. Many factors, including network load, block size, and additional load on the InfoServer contribute to the overall performance characteristics of any given tape operation.

One InfoServer client at a time can access an SCSI tape device. Once the client has completed the task and disconnects from the device, it becomes available to the other clients on the LAN. For supported devices (see Device Support, Table 1), the InfoServer automatically verifies firmware revision levels of attached tape devices. InfoServer software supports OpenVMS VAX version 5.4 and above and makes the tape backup capabilities available to OpenVMS VAX users at a minimum of Version 5.4. Users must install InfoServer VMS Client (QA-GGWAA-HX) for tape functionality for OpenVMS version 5.4 through version 5.5-N.

CD/R Function Access

Using the InfoServer's CD/R function access, users can record or write their own CDs from a DOS, OpenVMS, Windows NT ™, or Digital UNIX environment, using a native file format without any additional software. When creating a CD, the data is actually staged on the InfoServer's hard disk and then recorded locally to protect its integrity. Users can also choose to use third party formatters to create ISO 9660 CDs from those native environments.

The InfoServer 1000 CD/R functionality can be used for several applications including: the distribution of volumes of technical manuals, updates of databases, replacement of microfiche, or near-term storage of data.

A CD/R function access license and media/documentation kit are available to use with the InfoServer for compact disc mastering. Additional requirements include: a CD/R device, an AV-compatible hard disk for staging data (1 GB recommended), a CD reader, and formatter software for converting files to the ISO 9660 standard, if ISO 9660 recording is required.

File System Independence

InfoServer is a "virtual device" server. InfoServer does not impose a file system on the virtual devices that it serves, instead the client system interprets the on-disk structure. Multiple on-disk structures can be served on a single InfoServer simultaneously. InfoServer is capable of automatically recognizing ODS-2, High Sierra, ISO 9660, ULTRIX UFS, and HFS (Apple) disk formats and creating service names which match the volume name. Other disk formats may be named manually through the InfoServer management interface.

Automatic Failover to Duplicate Media

The LASTport protocol is designed to allow client systems to perform automatic failover between duplicate media. Failover means that a user connected to a service that becomes unavailable (such as a CD-ROM that is removed from the system) is automatically connected to an identical service on the same or another InfoServer. If the service is not found, the InfoServer client returns the appropriate message to the user. The implementation of failover varies from client to client.

Load Balancing

InfoServer dynamically calculates a service rating for virtual disks based upon load. These ratings are used by some client systems when connections are requested. When the same disk is offered more than once on the network, load balancing is provided. This includes the ability to load balance connections within a single InfoServer when duplicate virtual disks are present, as well as between multiple InfoServers with duplicate media on the network. Client systems select the highest rated service.

Initial System Load

Some client systems implement Initial System Load (ISL) using a combination of server-implemented, downline load and virtual disk capabilities. This feature eliminates the need for locally attached software distribution devices for initial system load on those client systems. ISL capabilities are supported for OpenVMS and VXT clients and most, but not all, terminal servers.

ISO 9660 Support

The ability to recognize ISO 9660 formatted CD-ROM discs is provided by OpenVMS VAX V6.0 and above and OpenVMS Alpha V1.0 and above. This support only enables OpenVMS to recognize these formats and does not allow OpenVMS to run any executables built under other operating systems. ISO 9660 support can be obtained for OpenVMS VAX V5.5 and V5.5-x as an add-on component through any Digital Customer Support Center.

Optional Functions Which Increase InfoServer Capabilities

The InfoServer software enables installation of InfoServer functional upgrades from CD-ROMs. As new functions become available, customers can purchase separately and install each function they wish to make available on the LAN. For example, customers can add CD/R functionality to their previously installed base packaged systems by purchasing the InfoServer CD Recordable Function Access license and media kit (see *OPTIONAL SOFTWARE* section). They then can install the CD-ROM media on their InfoServer, which initializes the CD /R functionality.

SOFTWARE REQUIREMENTS

The InfoServer system requires InfoServer client software for the following supported clients. Refer to client documentation for specific client features.

OpenVMS Alpha and VAX Clients

InfoServer client support for disk services is included in the OpenVMS VAX Operating System with version 5.4 and OpenVMS Alpha with version 1.5. InfoServer client support for tape services is included in the OpenVMS VAX Operating System with version 6.0. Tape services are also supported in OpenVMS version 5.4 through version 5.5-N with InfoServer VMS Client software kit (QA-GGWAA-HX). Refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx) for details of client support and any restrictions. Tape support for OpenVMS Alpha is available in the V6.1 release.

DIGITAL UNIX Clients

The InfoServer Client for DIGITAL UNIX allows DIGITAL UNIX clients to access InfoServer devices including CD-ROM and hard drives. CD recording is supported via hard drive access. Refer to the InfoServer Client for DIGITAL UNIX Software Product Description (SPD 56.45).

Windows NT Clients

The InfoServer Client for Windows NT V1.0 allows Windows NT clients (running on either Intel or Alpha hardware) to access InfoServer CD-ROM devices. Version 1.1 also allows connections to hard disk devices, which also enables the client to record CDs. Refer to the InfoServer Client for Windows NT Software Product Description (SPD 56.46). InfoServer access from Windows NT is also included in the PATHWORKS 32 product.

InfoServer Client for DOS

The InfoServer Client for DOS includes standard disk services. Refer to the InfoServer Client for DOS Software Product Description (SPD 37.32.xx).

InfoServer Client for DOS comes in two variants as follows:

1. The PATHWORKS for DOS (InfoServer) client is embedded in PATHWORKS client with version 4.1.
2. The InfoServer Client for DOS is a media and documentation kit that can be purchased separately and installed on a standalone PC or PCs that are networked in a Novell® environment.

OPTIONAL SOFTWARE

Function Access Licenses and CD-ROM kits

InfoServer Tape Function Access may be added to previously installed InfoServer packaged systems at InfoServer Software, minimum version 2.0. Please refer to the *ORDERING INFORMATION* section for details.

InfoServer Disk Function Access may be added to previously installed InfoServer 150VXT packaged systems at InfoServer Software, minimum version 2.0. Please refer to the *ORDERING INFORMATION* section for details.

InfoServer CD/R Function Access may be added to previously installed InfoServer 150 and 1000 packaged systems at InfoServer Software, minimum version 3.1. Refer to the *ORDERING INFORMATION* section for details.

InfoServer 1000 Server Connection Upgrades

The InfoServer 1000 is shipped from the factory with 50 concurrent connections enabled. Customers can purchase a 50 user upgrade to support a total of 100 connections. Please refer to the *ORDERING INFORMATION* section for details.

HARDWARE REQUIREMENTS

InfoServer Software runs on the InfoServer hardware described below:

- InfoServer 150 (Disk Serving)
- InfoServer 150 Tape Package
- InfoServer 150VXT
- InfoServer 1000
- InfoServer Publisher (InfoServer 1000 packaged for CD recording)
- InfoServer Librarian (InfoServer 1000 packaged for CD-ROM sharing)
- InfoServer Local Area CD (InfoServer 1000 packaged for ISL)
- InfoServer VXT (InfoServer 1000 packaged for VXT server-based config)
- InfoServer Scribe (InfoServer 1000 packaged for networked tape backup)
- InfoServer Software and InfoServer Disk Function Access software are factory installed on InfoServers and InfoServer 1000 packaged systems.

OPTIONAL HARDWARE

A maximum of 14 Digital qualified SCSI storage devices per InfoServer 150 and 7 Digital qualified SCSI storage devices per InfoServer 1000 are supported providing SCSI bus-length guidelines are observed (this includes the server's integral RZ23L, RZ24, or RZ24L disk).

Table 1
Device Support

Device	
RZ23	104 MB fixed disk drive, 3.25 inch
RZ23L	121 MB fixed disk drive, 3.25 inch
RZ24	209 MB fixed disk drive, 3.25 inch
RZ24L	245 MB fixed disk drive, 3.25 inch
RZ25	426 MB fixed disk drive, 3.25 inch
RZ26/B/L/N	1.05 GB fixed disk drive, 3.25 inch
RZ28	2.1 GB fixed disk drive, 3.25 inch
RZ29	4.3 GB fixed disk drive, 3.25 inch
RZ55	322 MB fixed disk drive 5.25 inch
RZ56	665 MB fixed disk drive, 5.25 inch
RZ57	1 GB hard disk drive, 5.25 inch
RZ58	1.38 GB fixed disk drive, 5.25 inch
TK50Z-GA	TK50 with SCSI interface
TKZ09	8mm helical scan tape drive
TLZ04	1.2 GB, 4mm DAT tape drive
TLZ06	4.0 GB, 4mm DAT tape drive (software control of compaction is supported.)
TZK10	QIC 525 MB, tape drive, SZ03 enclosure
TZK11	2.0 GB QIC tape drive
TZ85	2.4 GB tape drive
TZ857	Tape Loader
TZ86	6.0 GB tape drive
TZ867	42 GB tape loader
TZ30	95 MB tape drive
TSZ07	dual density 1600/6250 BPI magnetic tape
TSZ05	half-inch 1600 BPI magnetic tape
SZ100-AA	SCSI magazine tape subsystem compatible with TZ85/TZ857, total capacity is 18.2 GB
SZ106	SCSI magazine tape subsystem, 14.2 GB
RRD40	600 MB removable read-only CD-ROM
RRD42	600 MB removable read-only CD-ROM
RRD43	600 MB removable read-only CD-ROM, 2X
RRD44	600 MB removable read-only CD-ROM, 2X high performance
RRD45	600 MB removable read-only CD-ROM, 4X high performance
RRD46	600 MB removable read-only CD-ROM, 12X high performance
RRW11	CD-recording device (InfoServer publisher only)
TOSHIBA® 3401B	600 MB read-only CD-ROM
Apple® CD300	600 MB double-speed removable read-only CD-ROM
RWZ01	600 MB removable writeable/erasable optical storage, 5.25 inch
RWZ21	600 MB removable writeable/erasable optical storage, 3.25 inch

Table 1 (Cont.)
Device Support

Device	
ALPHATRONIX INSPIRE	600 MB magneto optical storage drive
Sony® CDW900E	CD-recordable device, single, double speed
Sony® E1/W1	CD-recordable device, single speed
Philips CDD521	CD-recordable device, double speed
JVC XR-1001	CD-recordable device, single speed
Philips CDD522	CD-recordable device, double speed
Yamaha CDR100	CD-recordable device, single, double, quad speed
Sony CDU920S	CD-recordable device, double speed
Sony CDU926S	CD-recordable device, double speed

Any combination of the following devices is supported on the InfoServer packaged systems:

	InfoServer 150		InfoServer 100		InfoServer 1000
Device	**Internal**	**External**	**Internal**	**External**	**External**
RZ23	1	12 (SZ03)	1	6 (SZ03) W/ INT RRD40	7 (SZ03)
RZ23/L	1	12 (SZ03)	1	7 (SZ03)	7 (SZ03)
RZ24/L	1	12 (SZ03)	1	7 (SZ03)	7 (SZ03)
RZ25	1	12 (SZ03)	0	7 (SZ03)	7 (SZ03)
RZ26/B/L/N	0	12 (BA350)	0	7 (BA350)	7 (BA350)
RZ28	0	12 (BA350)	0	7 (BA350)	7 (BA350)
RZ29	0	12 (BA350)	0	7 (BA350)	7 (BA350)
RZ55	0	12 (3 SZ12s/16 per bus)	0	6	6
RZ56	0	12 (3 SZ12s per bus)	0	3	3
RZ57	0	12 (3 SZ12s per bus)	0	3	3
RZ58	0	12 (3 SZ12s per bus)	0	3	3
RRD40	0	12	1	7 Incl. INT RRD40	7
RRD42	1	10 (5 per bus, 7 - INFOTOWER)	1	5 (7 - INFOTOWER)	5 (7 - INFOTOWER)
RRD43	1	10 (5 per bus, 7 - INFOTOWER)	1	5 (7 - INFOTOWER)	5 (7 - INFOTOWER)
RRD44	1	10 (5 per bus, 7 - INFOTOWER)	1	5 (7 - INFOTOWER)	5 (7 - INFOTOWER)
RRD45	1	10 (5 per bus, 7 - INFOTOWER)	1	5 (7 - INFOTOWER)	5 (7 - INFOTOWER)

	InfoServer 150		InfoServer 100		InfoServer 1000
Device	Internal	External	Internal	External	External
RRD46	1	10 (5 per bus, 7 - INFOTOWER)	1	5 (7 - INFOTOWER)	5 (7 - INFOTOWER)
TLZ04*	0	2 (1 per bus)	0	1	1
TLZ06*	0	2 (1 per bus)	0	1	1
TZK10/TZK11*	0	2 (1 per bus)	0	1	1
TK50Z*	0	2 (1 per bus)	0	1	1
TKZ09*	0	2 (1 per bus)	0	1	1
TZ85/TZ86*	0	2 (1 per bus)	0	1	1
RWZ01/RWZ21	0	12	0	7	7
ALPHATRONIX	0	12	0	7	7
Toshiba® 3401B	0	12	0	7	7
Apple® 300	0	10	0	5	5
Philips CDD521**	0	12	0	7	7
Sony CDW900E**	0	12	0	7	7
Sony E1/W1**	0	12	0	7	7
JVC XR-1001**	0	12	0	7	7
Sony CDU920S**	0	12	0	7	7
Sony CDU926S**	0	12	0	7	7
Yamaha CDR100**	0	12	0	7	7
SZ18A-CA		2		1	1
SZ18A-DA		2		1	1

* Tape Function Access software option required

** CD/R Tape Function Access software option required

A BC56H-03 cable is necessary for the first external cable on InfoServer 150 systems.

An 18-inch SCSI cable (BC19J-1E) is recommended for device interconnection.

The BC16E-XX console cable is provided to attach a console to the InfoServer.

The BN21-XX high density to high density cable is required for StorageWorks BA350 pedestal series, and for certain CD/R devices.

ORDERING INFORMATION

InfoServer 1000 User License Tiers

The InfoServer 1000 is shipped from the factory with 50 concurrent connections enabled. Additional connections can be purchased via the following license and media kit:

InfoServer 1000 51-100 connection License: QL-0USA9-AA

InfoServer 1000 51-100 connections Media kit: QA-0USAA-H8

InfoServer Tape Function Access License/Media Kits

InfoServer 150 Tape Function Access Traditional License: QL-XZZA9-AA

InfoServer 150 Tape Function Access CD kit: QA-XZZAA-H8

InfoServer 1000 Tape Function Access Traditional License: QL-0UVA9-AA

InfoServer 1000 Tape Function Access CD kit: QA-0UVAA-H8

InfoServer Disk Function Access License/Media Kits:

InfoServer 150 Disk Function Access Traditional License: QL-XZYA9-AA

InfoServer 150 Disk Function Access CD Kit:

QA-XZY99-H8

InfoServer CD Recordable Function Access License /Media Kits:

InfoServer CD/R Function Access Traditional License:

QL-0UWA9-AA

InfoServer CD/R Function Access CD Kit:

QA-0UWAA-H8

InfoServer Packaged Systems

InfoServer 1000 packaged systems include the InfoServer Software with Server Software license and the InfoServer Disk Function Access software and license. Additionally, CD/R Function Access software and license and Tape Function Access software and license are included on certain models (see *HARDWARE REQUIREMENTS* section).

InfoServer 150VXT systems have been configured for VXT client access only. Other clients may be added by purchasing the Disk Function Access license and software.

System Documentation: QA-YSHAA-GZ

Software Product Services: QT-YSHA*-**

GROWTH CONSIDERATIONS

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

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Digital. Integrated System Support Services providing comprehensive hardware and software maintenance services or separate hardware or software maintenance services are available for the InfoServer. For more information, contact your local Digital office.

Software Service is covered under the terms and conditions of the Integrated Hardware and Software Customer Service Contracts.

Service for InfoServer Software must be ordered independently of the media delivering updates.

InfoServer Software Product Services: QT-YSHA*-**

SOFTWARE LICENSING

InfoServer Server License (QL-YSH99-AA) - This license grants the right to use the InfoServer Software on one InfoServer.

Client Software License - Included with the Server Software license in the InfoServer 150 and 1000-based packaged systems is the right to use the clients with the InfoServer hardware. There is a limit of 100 concurrent connection on the InfoServer 150 and 150VXT systems.

Note: The InfoServer 150VXT packaged systems are licensed for VXT access only.

InfoServer Disk Function Access license (QL-XZYA9-AA) grants access to the disk functions of the InfoServer 150 and InfoServer 1000 by any client node.

InfoServer Tape Function Access license (QL-XZZA9-AA, QL-0UVA9-AA) grants access to the tape functions of the InfoServer 150 and InfoServer 1000, respectively, by any client node.

InfoServer CD/R Function Access license (QL-0UWA9-AA) grants access to the CD/R functions of the InfoServer 150 and InfoServer 1000 by any client node.

This product does not provide support for the OpenVMS License Management Facility. A Product Authorization Key (PAK) is not required for installation or use of this version of the product.

This software is furnished only under a license. For more information about Digital's licensing terms and policies, 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 as defined in the Software Warranty Addendum of this SPD.

Software accompanying an InfoServer 1000 hardware order is covered under the terms of the hardware warranty and is warranted to perform according to the Software Product Description.

Software purchased separately is warranted only to the extent that it will perform according to the Software Product Description. The media itself carries a one-year warranty. Software carries a standard 90-day software warranty.

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