

Model 5980-002 Archive Server

Version 1.2

Features

Scalable storage capacity up to 20,000 Terabytes

Highly-reliable, redundant storage, including off-site vault capabilities

Fully automated operation... interfaces directly with DSPCon data acquisition systems and recorders along with compatible third-party products

Secure, robust, network-enabled remote access to the archived data store

Archived data and data sets easily accessible through open, documented interfaces

Invokes a variety of analysis operations via its Catalog Browser

Ordering Information

Model 5980-002



Acquiring, Processing and Managing the World's Data.

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Powerful, Automatic Archival Storage and Retrieval

The Archive Server is a powerful storage system capable of archiving large amounts of data from DSPCon data acquisition systems and recorders as well as compatible third-party products. Based on proven data management hardware and software technologies, it combines fast data storage capabilities, flexible data cataloging software and 2 Gigabit-per-second Fibre Channel interfaces, or standard Ethernet, to link data archive access computers to a hierarchical management system with virtually unlimited capacity. The system is capable of storing up to 20,000 Terabytes of data on-line and has an infinite storage capacity off-line!

The Archive Server's Catalog Browser software provides robust, secure access to data from remote computers connected to the Archive Server system through 802.3 LANs. The software allows the user to retrieve data stored in "data sets" created by DSPCon data acquisition and recording products along with the ability to create user-defined data sets. Additional software capabilities allow the user to define "property" attributes for data sets and search for data sets and files anywhere on the server based on those properties.

Hierarchical storage of data files on hard disk and tape is accomplished utilizing fast RAID technology. The system can also archive data files automatically and subsequently locate them anywhere they are stored: on RAID disk, on-line tape, or tapes that have been removed and stored elsewhere.

System-engineered to work with DSPCon's extensive portfolio of data acquisition systems and recorders, the Archive Server is also compatible with any third-party system designed to support DSPCon's open archival storage interface software standards.



Hardware Components

Features

Configurable, single controller RAID

Tape library with virtually unlimited tape storage capacity

Multiple Fibre Channel ports

Simple, fast data retrieval

Fully automatic import and export operations

High-throughput Storage Area Network can host from 1 to 31 analysis workstations, each with direct access to archive data

2GB-per-second Fibre Channel interfaces

The Archive Server is designed for continuous operation and very low maintenance. It is designed to run in a climate-controlled office environment, with an absence of extreme temperatures and significant levels of shock or vibration.

Hardware Block Diagram

The Archive Server system hardware configuration includes:

- Two identically-configured workstations. The [Application Workstation](#) performs system control and monitoring. The [Hierarchical Storage Management Workstation](#) runs the software that manages the virtual file system.
- A storage area network (SAN) comprised primarily of RAID storage devices for on-line data archiving, and a tape library for storage.

Workstations

The [Application Workstation](#) is dedicated to running the Archive Server application software. The application software conceptually executes on top of the storage manager software and controls Captured Data Set import to the Archive Server and export to other workstations. The workstation exercises executive control and maintenance of the data archiving operations.

The [Hierarchical Storage Management \(HSM\) workstation](#) is dedicated to running the storage manager software that manages the file system. Interaction with the HSM workstation is required only during administrative or maintenance operations. The monitor can be switched to any workstation via the HSM's KVM switch. Two Host Bus adaptors support Fibre Channel communications with the storage array and the tape library.

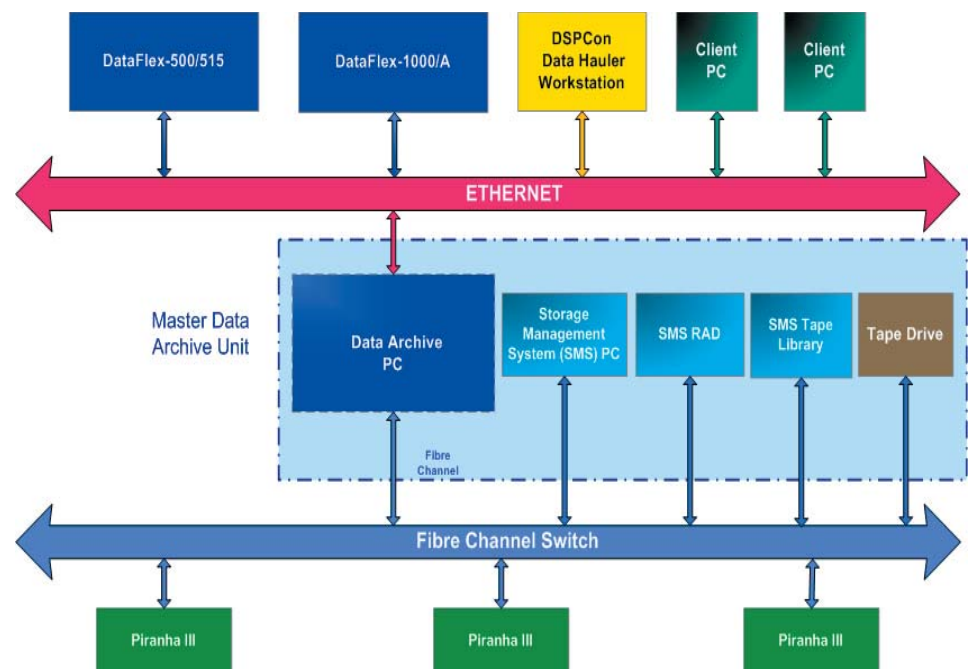
Disk Units and Tape Libraries

The Disk Units and Tape Libraries are main components of a fully-customizable hierarchical subsystem with several storage methods each of which provides a specific level of data retrieval.

- Scalable, robust Disk Units for rapidly accessible on-line storage
- Scalable, robust removable media libraries for near-line storage
- On-the-shelf setups for off-line storage

The Archive Server [Disk Units](#) provide the system's on-line disk storage capacity. This storage subsystem is fitted with a configurable number of disk drives. The unit is equipped with two Fibre Channel ports, and is housed in a 2U rack-mountable enclosure.

The [Tape Library](#) is equipped with multiple LTO-4/5 tape drives, and a configurable number of data slots tapes. The library is connected to the Archive Server Storage Area Network via a Fibre Channel interface, and is enclosed in a rack-mountable chassis that contains primary and secondary power supplies.



Archive Catalog Browser

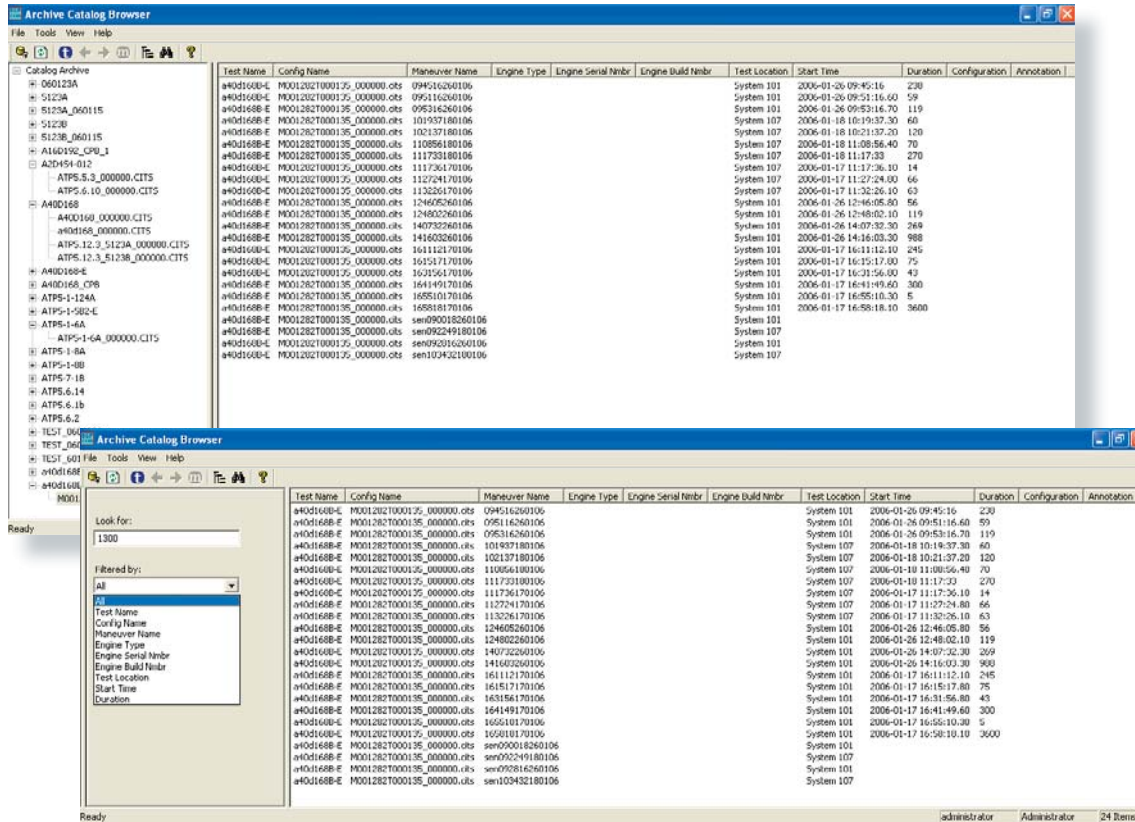
The Archive Catalog Browser is the primary operator interface for browsing the archived data catalog, marking up data sets, and exporting data sets. The Archive Catalog Browser:

- Browses the archive catalog to locate particular data sets of interest
- Examines the various properties and content of a particular data set
- Mark-ups specific data quality properties of a particular data set
- Exports a particular data set to a specific data acquisition system

The Browser provides two distinct views of the archive catalog—**Tree View** and **Search View**. Tree View provides a file-and-folder representation of the data sets using the logical hierarchy of test, configuration, and maneuver. The navigation pane shows the logical hierarchy as a tree of folders. Search View provides an interactive search dialog in the navigation pane that can be used to specify search criteria and execute a catalog search. The detail pane displays catalog items that match the specified search criteria.

In both views, the user interface is divided into two panes. The left-hand **Navigation Pane** contains the navigation control(s) unique to each view. The right-hand **Detail Pane** shows all items selected using the control(s) on the navigation pane. The Detail Pane uses a multi-column list format to display its content. Individual columns can be mapped to specific properties stored in the catalog. Columns can be added, rearranged, and removed. The list can be sorted according to the content of any column, either ascending or descending. Each item in the Detail Pane has a context menu.

Tree View



Multiple Operations in an Easy-to-Use Format

The Archive Server Tool Set

The Archive Catalog Browser window, shown here in standard navigation mode, provides the fundamental form of access to the data sets managed in the archive. The figure below is an annotated illustration of the window.

MENU ITEMS
File is used to login, refresh the screen and exit the application. Tools is used to export data to the analysis system or test bed system, or to show test/maneuver properties. View is used select Search or Tree mode. Help provides system connection status.

NAVIGATION PANE
Contains controls for Search View and Tree View settings.

STATUS DISPLAY
Displays communications status messages.

DETAILS PANE
In Tree View, shows associated properties for the selected data set in multi-column list format. In Search View, lists all data sets/data attributes that meet the search criteria.

PROPERTIES DIALOG
An Operator can view current data set and media status and request status updates. In addition to these functions, an Administrator can delete the entire data set, or fetch and modify the Configuration, Annotation, and Notes files.

LOGIN STATUS DISPLAY
Displays user login name and privilege level.

COLUMNS
Test Name, Configuration Name and Maneuver Name show the naming hierarchy for the data sets. The remaining columns display other database attributes for each of the data sets. Information in any of the columns is sortable.

Test Name	Config Name	Maneuver Name	Engine Type	Engine Serial Nbr	Engine Build Nbr	Test Location	Start Time	Duration	Configuration	Annotation
TEST_60123	a40d168_TESTID_000001.CITS	TEST164534230106				System 101	2006-01-23 16:45:34	241		
TEST_60123	a40d168_TESTID_000001.CITS	TEST164936230106				System 101	2006-01-23 16:49:36.90	244		
TEST_60123	a40d168_TESTID_000001.CITS	TEST165340230106				System 101	2006-01-23 16:53:40.10	241		
A400168	ATPS.12.3_5123A_000000.CITS	TEST071138150106				System 101	2006-01-15 07:11:38.30	241		
A400168	ATPS.12.3_5123A_000000.CITS	TEST071642150106				System 101	2006-01-15 07:16:42.40	241		
A400168	ATPS.12.3_5123A_000000.CITS	TEST072146150106				System 101	2006-01-15 07:21:46.60	241		
A400168	ATPS.12.3_5123A_000000.CITS	TEST072650150106				System 101	2006-01-15 07:26:50.40	241		

The Catalog Browser Window Defined



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