

**Eastman Software Imaging Server  
Administrator's Guide  
Release 1.4 for Windows NT**

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715-A054

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# About This Guide

The Eastman Software Imaging Server for Windows NT is an enterprise software package that provides file, document, and storage services for PC clients running imaging applications. The server consists of programs, configuration files, and data files that integrate with existing Windows NT® services and facilities. PC clients communicate with the server through a TCP/IP network.

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## Software Components

The Eastman Software Imaging Server components include

- Installation services (refer to Chapter 2)
- Configuration services (refer to Chapter 3)
- Server Support services (refer to Chapter 4)
  - Name
  - Information
- Image services (refer to Chapter 5)
  - File
  - Document
- Storage services (refer to Chapter 6)
  - Volume Configuration
  - Cache
  - Queue
  - File Transport and Delivery
  - Archive
- Utility/Error Log service (refer to Chapter 7)

## What You Need to Know

This guide is intended for the administrator of Eastman Software Imaging Server. As a server administrator, you should be familiar with the Windows NT Server services and facilities.

## Organization

This document contains step-by-step instructions for installing and configuring the Eastman Software Imaging Server. It also explains how to control and monitor the services through a set of menu-based server utilities.

This guide is organized as follows:

**Chapter 1** — Provides an overview of the Eastman Software Imaging Server subsystems, including the server services, server support services, storage services, and optical disk management system. The chapter also contains information about hardware and software requirements.

**Chapter 2** — Explains how to install (and remove) the Image Server software on the Windows NT Server.

**Chapter 3** — Describes how to configure the Eastman Software Imaging Server services through the Configuration Utility (oixutil.exe).

**Chapter 4** — Describes the Name and Information services.

**Chapter 5** — Describes the file and document services, and explains how to convert UNIX-based document databases for use with the Windows NT Server.

**Chapter 6** — Describes the server storage services, including volume management, cache, queue, file transfer, document transfer, and archive services.

**Chapter 7** — Contains instructions for controlling the services and monitoring the status of all services through the Server Utility (oiutil.exe).

**Appendix A** — Describes the elements of the Archive script.

**Glossary** — Provides a list of terms related to the installation, configuration, and operation of the Eastman Software Imaging Server.

## Terms

Eastman Software Imaging Server terms are defined in the glossary.

## Conventions

This document uses the following conventions:

- Monospace font (fixed-spaced font) is used to set apart certain categories of text.
- In the Configuration and Server utilities, the Configure Service With Defaults? or Are You Sure? prompts have a default of No or n.

## Graphic Conventions

This document uses the following graphic convention:

- The less than and greater than (< >) symbols indicate a unique value, or variable that you must input into a command. For example:

```
dmdbimp <REMOTE_SRCDB> <LOCAL_DESTDB>  
<INSTALLED_IMGDIR>
```

## Keyboard Conventions

Keycap names and keyboard procedures are represented as follows:

- Keycap names appear in the text with initial capitals as they appear on some industry-standard keyboards:  
Press Enter.
- Function keys appear in the text as follows:  
From the Event Log Information screen, press F1.
- The control key appears as a key combination:  
To exit, press Ctrl+x.

# Eastman Software Imaging Server Documentation

This document provides information about installing, configuring,

controlling, and monitoring the status of Eastman Software Imaging Server. The service integrates with the Optical Disk Management System (ODMS), which is described in the following guide:

***Optical Disk Management System Administrator's Guide (715-A040A)*** — Contains step-by-step instructions for an administrator to configure and monitor the ODMS subsystem, which controls 5 1/4-, 12-, and 14-inch optical disk jukeboxes and standalone drives. It describes how to install the SCSI CAM interface, and to activate optical device support.



# Eastman Software Imaging Server



Eastman Software Imaging Server for Windows NT is an enterprise imaging server product that provides file, document, and object storage and retrieval services to image clients on a TCP/IP network. The server is designed with client/server architecture to provide PC client applications with location-independent file- and document-based storage and retrieval services using Remote Procedure Calls (RPCs).

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The multibyte-enabled server is a set of executable programs, libraries, and message files that integrates with existing Windows NT Server services and facilities. The server can communicate with LAN-based, industry-standard PCs running Microsoft Windows 95 (read only) or 3.1 imaging applications.

The Imaging server provides file and document support on magnetic media. In addition, the Image Services integrate with Windows NT Servers that contain interfaces to rewritable optical media through the native Windows NT file system.

The Optical Disk Management System (ODMS) integrates with the Image Services subsystem to provide flexible and expandable storage of files and documents on 5 1/4-, and 14-inch Write Once Read Many (WORM) optical disk jukeboxes and standalone drives. WORM technology maintains data integrity by enabling users to read and write, but not erase, valuable data.

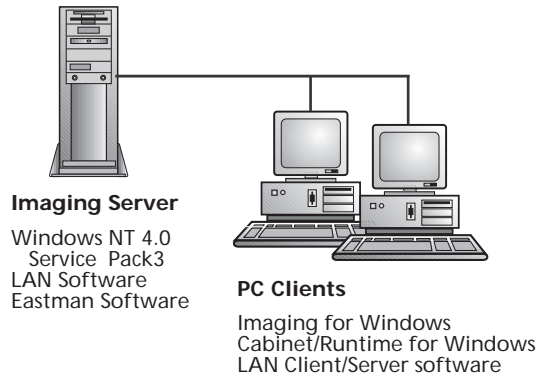
ODMS provides optical disk management features that improve system performance and flexibility, including predictive jukebox request management, optical volume mirroring, optical volume relabeling, and optical volume use list management. ODMS supports the industry-leading optical devices and jukeboxes from ATG, Cygnet, Hewlett-Packard, IBM, Kodak, Panasonic, Philips LMS, and Sony.

Mirroring creates and maintains duplicate image volumes on separate optical platters, which increases reliability for image storage. Optical volume relabeling changes the volume name of one or both sides of an optical cartridge. Volume use list management prioritizes the use of optical volumes based on available space and other considerations.



For more information about ODMS, refer to the Optical Disk Management System Administrator's Guide.

The Eastman Software Imaging Server contains the following environmental options:



## Imaging Server Services

Eastman Software Imaging Server provides the following services:

**Software Installation services** — Install (and remove) the software using the native software installation (and removal) facilities on your Windows NT Server.

**Software Configuration services** — Configure the Image Services for a single- or multiple-server network through the Configuration Utility options. In a multiple-server environment, you can distribute the image services among multiple- servers in a network domain.

**Server Support services** — Provide name and information services.

**Image File service** — Provides RPC-based interfaces to client applications to store, locate, and retrieve image files from optical and magnetic disks through the network.

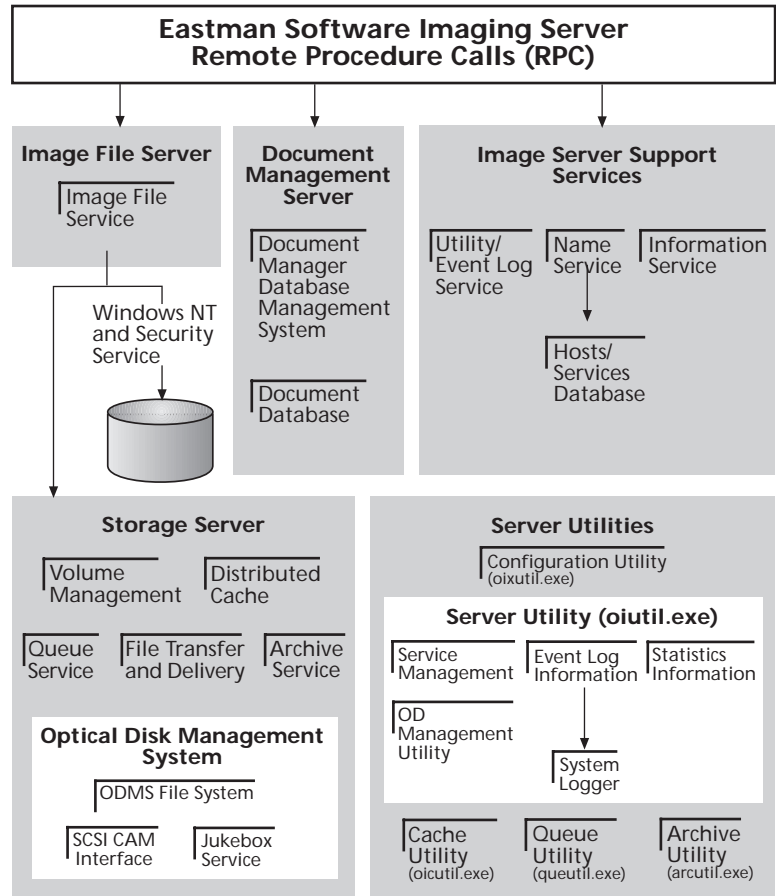
**Document service** — Provides RPC-based interfaces to client and host applications to group references to image files into a logical hierarchy of cabinets, drawers, folders, and documents.

**Storage services** — Provides volume configuration (aliasing), caching, queuing, file transferring, and archiving of file- and document-based objects.

**Server Management services** — Manage the Image Services, and provide operating status and event logging for the Image Services through the Server Utility interface. Additional services available through the command line include the cache (oicutil.exe), archive (arcutil.exe), and queue (queutil.exe) utilities.

**Optical Disk Management System** — Integrates with the Imaging Server to provide object storage on 5 1/4-, 12-, and 14-inch WORM optical jukeboxes and drives.

The Imaging Server integrates with existing native Windows NT Server services and facilities, as follows:



## Software Installation Services

Imaging Server includes a set of services that are distributed as executable programs, configuration files, and work files. The product is installed using the InstallShield® Wizard. You are prompted to install the imaging server with or without optical support. As you install the services, the appropriate directory

structures are built, and the services executable files and other dependent files from the CD-ROM are installed on the system.

## Software Configuration Services

The Imaging Server setup program installs the services using default configuration settings that enable you to start and use the server. However, you can access the Configuration Utility (oixutil.exe) at any time to make configuration changes to the services. The configuration screens enable you to customize the services, specify the name and directory location for various configuration and data files, and set the level of event logging.

## Server Support Services

The Server Support services include

- Name service
- Information service

### Name Service

In a network environment where the Imaging Server is configured, users need to identify by name, the server-based objects and services. The Name service enables applications residing on client PCs to list RPC-based services. Clients can receive the following information:

- Service names
- IP address of the server and port numbers of the services

The Name service uses standard network access mechanisms to manage the centralized name service list. The Name service must be running on the Imaging Server.

As services are added to the server, you do not need to update the host and services files for the client. All client RPC requests

reference the server-based services database, providing for centralized service name and location management.

## File Service

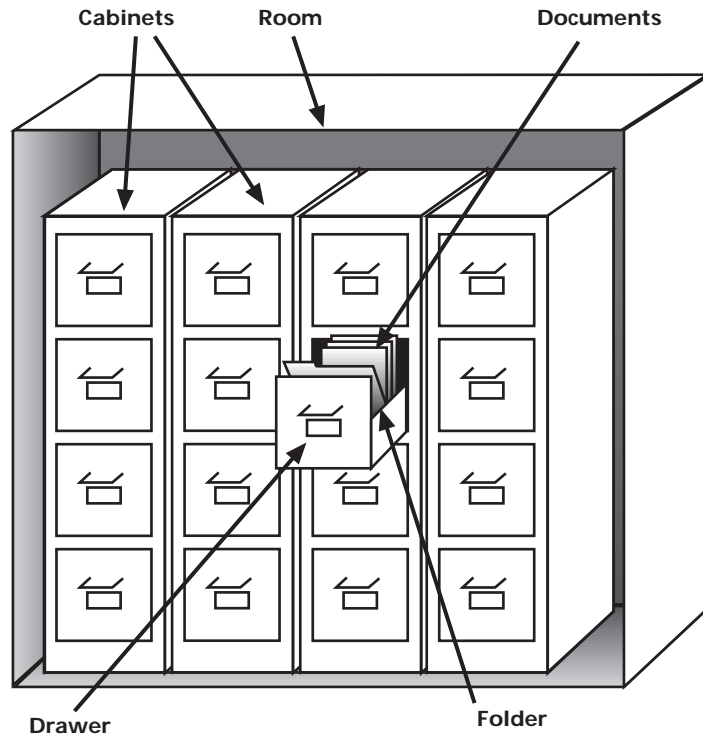
The File service provides flexible, RPC-based access to data and image files regardless of the system, format, or storage media. A client can access files from any server directory without mapping drives to the directories where the files are stored. The client/server software locates and retrieves data and image files from the network. The File service enables image applications to

- Read, write, and manipulate image files in Tagged Image File Format (TIFF), Wang Image File Format (WIFF), and Windows Bitmap (BMP) formats.
- Create, delete, rename, and copy image or binary files on the image server; also enables users to open, read, and write to binary files on the image server.
- Create, list, and delete directories on the server.
- Read and write descriptive data, such as image type, compression, and resolution.

## Document Service

The Document service is a higher-level access mechanism that enables imaging clients to form logical associations of images into a document organization. The underlying document database is created and managed by a database management system.

The Document Manager is a hierarchical filing and storage system that logically organizes image data similar to the naming conventions used in an office, as follows:



The images are organized as follows:

- Room is a database on the server. (A server may support multiple databases.)
- Room contains cabinets.
- Cabinets contain drawers or folders.
- Drawers contain folders.
- Folders contain documents.
- Documents contain references to single or multiple image pages.

Image documents can be logically grouped into folders, and stored in the appropriate drawer, cabinet, and room. In a network configuration where more than one server is used, each image server can have its own set of document databases. The images that make up a document can be distributed among multiple servers. The architecture enables users to create and delete one or more documents, while maintaining the integrity of the image files stored on the network.

The Document service offloads a large amount of processing from the client or host workstation. Users can attach keywords to documents, and then query the database on the basis of keywords and/or document attributes, such as Document Name, Creation Date, Modification Date, Folder Name, Drawer Name, and Cabinet Name.

## Storage Services

The Eastman Software Imaging Server storage services include

**Volume Management service** — Maintains a set of volumes on the Imaging Server, including aliases that map to magnetic disk directories as well as ODMS optical volumes.

**Cache service** — Provides one or more magnetic directories for clients to access magnetic and optical files from the server. The Cache service provides persistent caching of files over system restarts. The Cache utility enables you to access and control active cache directories and files. Listing options include cache attributes, cache contents, cached file attributes, cache housekeeping information, directory information, and version information.

**Queue service** — Provides asynchronous queuing for object transfer requests. The queue provides Server Administrators with concurrent access to archive and transfer services, and permits prioritization of the requests and balancing of server workload.

**File Transfer and Delivery (FTD) service** — Provides an application-controlled mechanism for clients to transfer objects, as follows:

*Document Transfer* — Transfers document-based objects to the local cache.

*File Transfer* — Transfers file-based objects to a specified destination (magnetic, optical, or cache).

*Optical and Magnetic Placement* — Transfers files appended as a new document page to a specific destination or a pre-defined destination based on user-defined attributes.

**Archive service** — Provides a script for Server Administrators to schedule the movement of documents and files to permanent storage.

## Server Management Services

The Imaging Server includes a set of server management utilities that enable you to start, monitor, and stop the services. The server utilities enable you to control and maintain the status of each component. The server administrator interface for the utilities is the menu-based Server Utility. Additional server utilities that provide command line options include the cache (oicutil.exe), archive (arcutil.exe), and queue (queutil.exe) utilities.

1 The Server Utility main menu contains the following options:



The Service Management screens enable you to control and maintain the status of each installed service, including the Optical File Manager. The Service Management screens enable you to

- Start, terminate, and update all services.
- Halt, resume, and update an individual service.
- Monitor the status of each installed service.

## Event Log Information

Each installed service logs event and information messages to a central log file on the server. The Event Log screens display the combined log for all services, or just the events logged for a single service. You can control the level of event reporting through the Configuration Utility. (The Utility/Event Log Service configuration screen is described in Chapter 3.) The standard event logging format provides the following event information:

- Date and time
- Service that logged the event
- Level of event

- Description of event
- Client name
- User name

## OD Management Utility



For more information about ODMU, refer to the *Optical Disk Management System Administrator's Guide*.

The Server Utility serves as a control panel to access the Optical Disk Management Utility (ODMU) screens, which enable you to

- Define ODMS and VS/VIIS parameters
- Define license parameters to activate 5 1/4-, 12-, and 14-inch optical device support.
- Define cluster paths as mounting points on magnetic disk for optical volumes
- Define optical volume use list priorities
- Configure attached WORM optical devices
- Attach and detach jukeboxes
- Initialize optical volumes
- Mount and dismount optical volumes on specified cluster paths
- Create and view directories and files on optical volumes
- Perform copies and backups of files on optical and magnetic disk based on file, directory, and volume criteria
- Relabel optical volumes
- Create and maintain mirror volumes on separate optical platters, and recreate a primary volume from a mirror volume
- View the events that are logged for ODMS
- List information about configured clusters, volumes, directories, and devices
- Manage multiple WORM optical jukeboxes and standalone drives on a single optical server

## Statistics Information

The Statistics Information screens enable you to access image service information and image client status, as follows:

- Service name, title, and version
- Service program file location
- Current and previous service status
- Service launches
- Total RPC clients serviced since service startup
- Total RPC client requests serviced since service startup
- Elapsed time to service RPC client requests
- Current number of RPC clients
- Maximum concurrent RPC clients since service startup

## Command Line Utilities

The Server Management services includes the following command line utilities:

**Cache utility (oicutil.exe)** — Enables you to access and control active cache directories and files. You can list the contents of the entire cache, attributes of one or more cache libraries, attributes of the objects in a particular cache, directory information, housekeeping information, and current version information. You can pre-load and clear the cache, and search for a particular object in the cache.

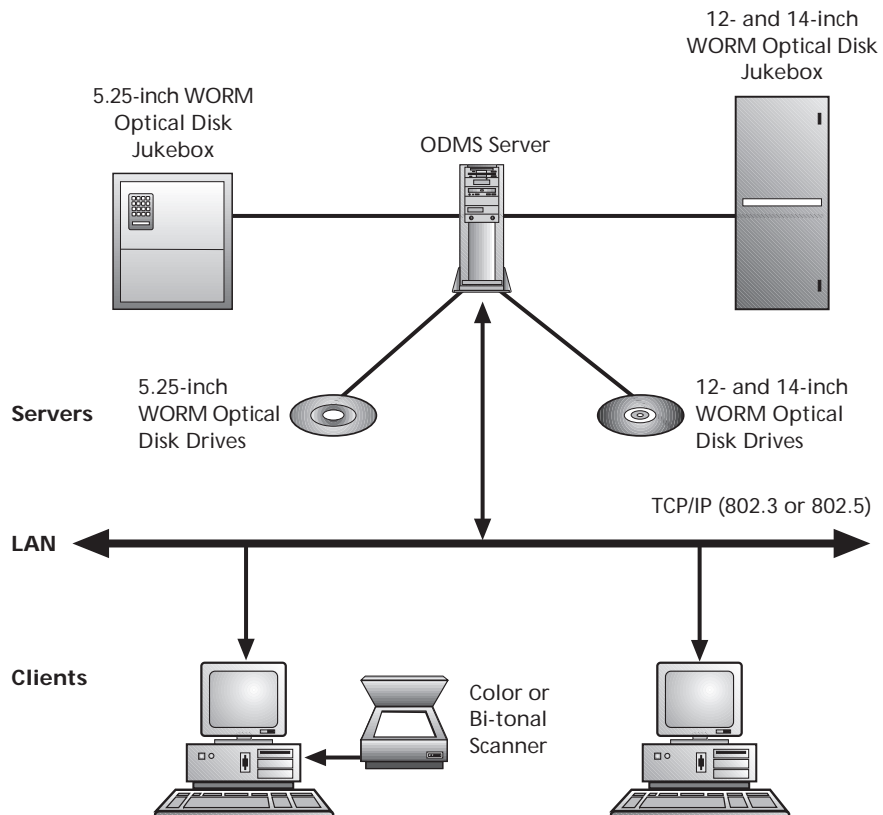
**Queue utility (queutil.exe)** — Enables you to access and control the File/Document Transfer and Archive queues, which queue jobs submitted by Server Administrators. You can list the contents of all the queues, a single queue, a priority chain, a single entry, and current version information. You can also delete a single entry, all entries on a priority chain, or all entries from the queue.

**Archive utility (arcutil.exe)** — Enables you to access and control the Archive queue, which queues archive jobs submitted by Server Administrators. You can submit archive jobs, delete jobs, move jobs to a different chain, and change the priority of jobs. You can list the contents of the Archive queue, a priority chain within the queue, or a single job

## Optical Disk Management System

The Optical Disk Management System (ODMS) is an enterprise optical server product that manages 5 1/4-, 12-, and 14-inch Write Once Read Many (WORM) optical disk jukeboxes and standalone drives. WORM technology maintains data integrity by enabling users to read and write, but not erase, valuable data. ODMS is a multi-byte-enabled application that integrates with both the Eastman Software Imaging Server and Eastman Software COLD Server.

ODMS can support a combination optical devices, as shown in the following sample configuration:



## Requirements

The following sections describe the software and hardware requirements for the Eastman Software Imaging Server for Windows NT.

## Software

The software requirements include:

- Windows NT Server, Release 4.0 operating system (including SMS, Release 1.2)
- Service Pack 3
- Windows NT TCP/IP software

## Hardware



For more information about server hardware requirements, refer to the sections titled "Server Memory" and "Magnetic Disk Space."

The hardware requirements include:

- Intel Pentium class machine with 64 megabytes (MB) minimum of memory (base) plus an addition 1 MB for each client
- 30 MB of magnetic disk space (minimum)
- Additional magnetic disk for caching (minimum one gigabyte)
- Network adapter (Token Ring or Ethernet)
- SCSI controller for optical peripheral support, if required (cannot be system SCSI board)

### Server Memory

A minimum of 64 MB of main memory is recommended for the imaging server. To improve processing speed, or to use the server for other purposes than imaging, you may require additional memory.

### Magnetic Disk Space

It is recommended that you establish a dedicated magnetic disk drive for Imaging Server operation and processing. You may require additional magnetic disk space to store, expand, and cache image files. The total disk space recommended depends on the size and number of files, and the availability of optical storage.

To determine the server magnetic disk drive requirement for image processing:

- 1 MB of magnetic disk space for each thousand image pages stored on the server for a Document Manager database (for example, 500 MB for 500,000 image pages)
- 1 MB of magnetic disk space for each gigabyte of optical storage for optical directory management (for example, 47 MB for a 47-GB jukebox)
- The number of concurrent clients times the average image file size for magnetic cache space to display images from optical drives



## Installing the Services



This chapter explains how to install the Eastman Software Imaging Server services, and how to install the SCSI CAM driver on your Windows NT Server. It also describes how to remove server and SCSI CAM driver from your system

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## Installing the Server With Optical Support

The Eastman Software Imaging Server for Windows NT setup program enables you to install the services with or without optical support. Installing the Optical Disk Management System (ODMS) is required for optical support of your 5 1/4, 12-, and 14-inch jukeboxes and standalone drives. The SCSI CAM driver is required for SCSI controller support for optical devices.

The ODMS product includes the SCSI CAM driver, and contains all of the software you need to support your attached jukeboxes and standalone drives.

## Program Directory Structure

The Setup program installs the Imaging Server files by default in:

```
drive:\Program Files\Eastman Software\  
Imaging Server
```

Setup enables you to change the drive and directory in which to install the software. The installation automatically creates the following subdirectories:

**\Program** — Contains non-modifiable files, including executable, library, and message files.

**\Config** — Contains modifiable configuration files.

**\Work** — Contains work directories and default cache.

## Running Setup

To install the Eastman Software Imaging Server, perform the following steps:

- 1 If the directory from which you plan to run the Setup program is not on your local machine, map the directory's network drive to your local machine.

- 2 Run Setup.exe from the Imaging Server directory on the CD-ROM, or from your mapped directory. Then follow the instructions on the screen. When Setup prompts you to specify the target directory and setup type, use the information in the following list to make your selections:

*Welcome* — Introduces the Imaging Server setup, and recommends that all Windows programs be closed before continuing with the installation. Options are Next or Cancel

*Operating System Version Check* — Displays warning that Imaging server software will not function if Service Pack 3 is not installed. To verify your operating system version, double click on My Computer, click Help, and click About Windows NT. Service Pack 3 must appear after Version 4.

*Choose Destination Location* — Specifies the location of the target directory. The drive letter must be assigned to a local drive, not to a mapped drive, and must identify an NTFS (not FAT) storage volume. The target path of the server must not exceed 80 characters, or you will be unable to uninstall the product through the Control Panel Add/Remove Programs utility. If you specify a target directory that is not the default and it does not exist, Setup prompts you to create the directory.

*Setup Type* — Specifies whether to install the Optical Disk Management System for optical support, or to not install optical support.

*Program Folder* — Creates a program folder in the Start menu to access the Configuration Utility, Optical Disk Management Utility, ReadMe, and Server Utility. Select any new or existing program folder.

*Start Copy Files* — Specifies Next to copy files using the current settings, or Cancel.

- 3 The Setup type you selected during setup determines if optical support is installed, as follows:

- If you selected “No Optical Support,” the installation is complete and Setup prompts you to read the readme files and restart the Windows NT Server. You must restart your computer for the Imaging Server services to start. When you restart your computer, the server is automatically started. You can use the NT Control Panel Services utility to check the status of the Imaging server. The status should be Started and the Startup parameter should be set to Automatic.
- If you selected “Optical Support,” the installation is complete and Setup prompts you to read the readme files and locate instructions for installing the SCSI CAM Driver (refer to the section titled “Installing the SCSI CAM Driver”).

**Note:** To troubleshoot problems that occur during the installation, you can look in the installation directory for `instlog.txt`, which contains information about the progress of the installation. (If the server directory has not been created, the file may be in `C:\`.) You can also use the NT Event Viewer for troubleshooting.

## Installing the SCSI CAM Driver

If you installed the Imaging server with optical support, you need to install the Eastman Software SCSI CAM driver, as follows:

- 1 Click Start, point to Settings, and then click Control Panel.
- 2 Double click on the SCSI Adapters icon. The SCSI Adapters window appears.
- 3 Click on the Drivers tab, and click on the Add button. The Install Driver window appears.
- 4 Click on the Have Disk button. The Install From Disk dialog box appears.
- 5 In the Copy manufacturer's files from: box, type in or browse to the directory in which you installed the Imaging server.
- 6 Select `oemsetup.inf`, and click on Open.

7 Click on OK. When prompted for the SCSI CAM driver file location, click on OK. The System Setting Change box prompts you to restart your computer.

8 Make sure all of your SCSI devices are powered on, and click on Yes to restart your system. When you restart your computer, the Eastman Software Imaging Server is automatically started. You can use the Control Panel Services utility to check the status of the server. The status should be Started and the Startup parameter should be set to Automatic.

After the system restarts, you must log in to the Windows NT Server with Administrator rights, and run the Configuration Utility (oixutil.exe) to configure your attached SCSI devices.

**Note:** Make sure your SCSI devices are powered on before you reboot the system. You must login to the system with Administrator rights to configure ODMS.

For complete instructions about configuring ODMS, refer to the *Optical Disk Management System Administrator's Guide*.

## Removing the Imaging Server

To remove the Imaging Server from your system:

- 1 Click Start, point to Settings, and then click Control Panel.
- 2 From the Control Panel, double click on the Services icon. The Services dialog box appears.
- 3 Select the Imaging Server Service Manager, and click Stop, and then click Yes.
- 4 When the Imaging Server Service Manager stops, click Close.
- 5 From the Control Panel, click on the Add/Remove Programs icon. The Add/Remove Programs Properties window appears.
- 6 In the Install/Uninstall tab, select Eastman Software Imaging Server.
- 7 Click on Add/Remove. The software is removed.

- 8** Click on OK to exit from the Add/Remove Programs Properties window.

## Removing the SCSI CAM Driver

To remove the SCSI CAM driver from your system:

- 1** Click Start, point to Settings, and then click Control Panel.
- 2** Double click on the SCSI Adapters icon. The SCSI Adapters window appears.
- 3** Click on the Drivers Tab, and select Eastman Software Scsi CAM Driver.
- 4** Click on Remove. The CAM SCSI driver is removed.
- 5** Click OK to exit from the SCSI Adapters window.

## Configuring the Services



This chapter explains how to configure the Eastman Software Imaging Server services.

**Note:** For information about configuring ODMS, refer to the *Optical Disk Management System Administrator's Guide*.

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## Configuring the Imaging Server Services

During the installation of the Eastman Software Imaging Server, the setup program creates all of the configuration files containing default settings that are required to start the Imaging Server services. To make configuration changes to the services or to update your software licensing information, you must access the Eastman Software Imaging Server Configuration Utility, `oixutil.exe`.

To access the Configuration Utility, perform the following steps:

- 1 Log in to the system with Administrator rights.
- 2 Click Start, point to Programs, point to Eastman Software Imaging Server (or other program group that you selected during setup), and click Configuration Utility. The Eastman Software Imaging Server Configuration Utility main menu appears.



- 3 Select one of the following options, and press Enter.

*Auto [Re-]Configure All Services* — Configures the services using the current values that are set in the configuration file, `oix.conf`.

*Auto [Re-]Configure All Services With Defaults* — Updates the `oix.conf` file with the initial values as delivered with the product. The initial values override any previous updates that you made to `oix.conf` through the Eastman Software Imaging Server Configuration Utility screens.

*Utility/Event Log Service* — Sets the Server Utility values, including screen refresh rate, event logging level, and event log pathname.

*Document Management Service* — Sets the Document Management service configuration values, and creates document databases.

*File Service* — Sets the File service configuration values.

*Name Service* — Sets the Name service configuration values.

*Server License* — (Required to start the image services.) Enables you to type in the software license information from your Server Installation Authorization Card.

*Volume Configuration* — Lists, adds, and removes volume names to the volume mapping file (`vols.dat`). The `vols.dat` file is a configuration file used by the Image File and Document Management services to map volume names (aliases) to the magnetic directories where clients' image files and databases are stored. The Volume Management service also maintains a list of mounted and enabled ODMS optical volumes, so you do not need to list ODMS optical volumes in the `vols.dat` file.

*Cache Service/Queue Service/Archive Service* — Defines general cache configuration values. Lists, adds, changes, and removes cache directories. Defines parameters for configuring the object transfer queue and archive services.

*Optical File System* — Sets license parameters to activate 5 1/4-, 12-, and 14-inch WORM optical device support. Defines ODMS and VS/WIIS parameters. Defines cluster paths for mounting optical volumes. Sets volume use list parameters. Configures attached WORM optical devices. This configuration option appears only when ODMS is installed.

For more information, refer to the *Optical Disk Management System Administrators Guide*.

*Exit oixutil* — Exits from the Eastman Software Imaging Server Configuration Utility main menu.

## Configuring the Utility/Event Log Service

To configure the Utility/Event Log Service

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 3 (Utility/Event Log Service), and press Enter. The Utility/Event Log Service screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields, and press Enter.

*Utility Screen Refresh Interval (seconds)* — The refresh rate of the Server Utility screens to provide server service status and information. The range is 1 to 3600 seconds, and the default is 5 seconds. If you are using terminal emulation to access the Server Utility, it is recommended that you increase the refresh rate.

*Global Event Log Level* — The level of event logging for all server services, including debug (most logging), information, notice, warning (default), error, critical, alert, and emergency (least logging). To avoid an invalid setting, you must type the levels in lower case and use the following spellings:

```
emerg
al
crit
error
warn
notice
info
debug
```

Event information for all server services is sent to a centralized event log file, `oix.log`. Events appear on the Event Log screen in the Server Utility, `oiutil.exe`. It is recommended that you periodically delete older messages from the log to maintain sufficient space on the magnetic disk. Be sure to retain the header information, and do not delete the file itself. For best server performance, keep the level between emergency and warning.

*Turn on Global Trace Log* — Turns on tracing for all server services, even if tracing for individual services is set to off. Trace information is sent to the event log file, `oix.log`. Tracing provides more information than debug, and therefore overrides the Global Event Log Level setting. It is recommended that you keep tracing off (default), because tracing can degrade server performance and use a significant amount of disk space.

*Event Log Filename* — The name of the event log file that contains event trace messages. The default filename is `oix.log`.

- 3 In the Perform Changes? field, type `y`, and press Enter. The system updates the Eastman Software Imaging Server Configuration file, `oix.conf`.
- 4 When the service is configured successfully, return to the main menu.

## Configuring the Document Management Service

To configure the Document Management service:

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 4 (Document Management Service), and press Enter. The Document Management Service screen appears.

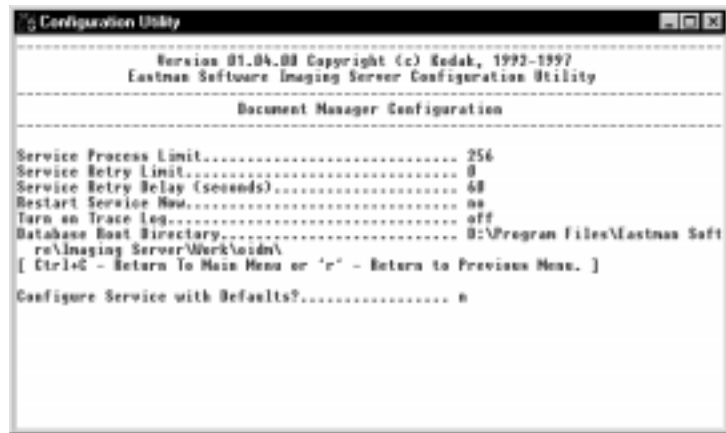


- 2 Select one of the following options, and press Enter.  
*Document Manager Configuration* — Sets the Document Management service configuration values.  
*Create Document Database* — Creates document databases.

## Setting Document Management Service Values

To set configuration values for the Document Management service:

- 1 From the Document Management Service screen, select option 1 (Document Manager Configuration), and press Enter. The Document Manager Configuration screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields, and press Enter.

*Service Process Limit* — Limits the number of concurrent client requests that the Document Management service will process. The default limit is 256 requests. The range is 0 to 1000 requests.

*Service Retry Limit* — The number of times the Server Manager will try to restart the Document Management service, if it fails to start when you start the service. The default limit is zero retries, which retries infinitely, and the range is 0 to 100 retries.

## Creating Document Databases

To create document databases:

- 1 From the Document Management Service screen, select option 2 (Create Document Database), and press Enter. The Create Document Database screen appears.

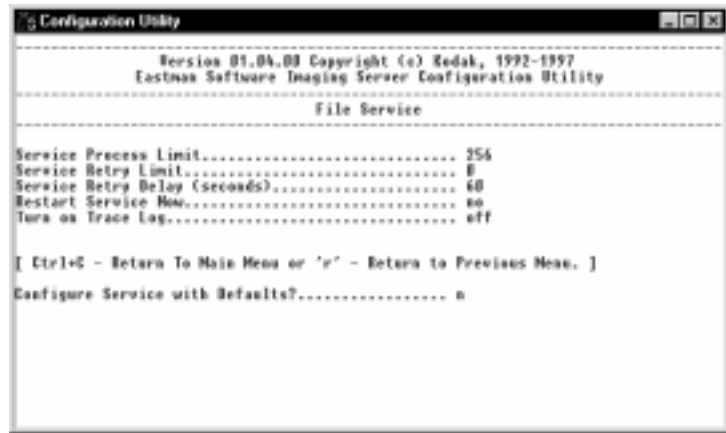


- 2 Type in values for the following fields, and press Enter.  
*Database Name* — Type in a unique alphanumeric name for the database. The limit is 15 bytes.  
*Database Path* — Type in the drive and pathname for the location of the database on your Windows NT Server filesystem. The limit is 128 bytes.
- 3 In the Create Database field, type *y*, and press Enter. The database is created in the directory you specified, and the Volume Mapping file, *vols.dat*, is updated.

## Configuring the Image File Service

To configure the Image File service:

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 5 (File Service), and press Enter. The File Service screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields, and press Enter.

*Service Process Limit* — Limits the number of concurrent client requests that the File service will process. The default limit is 256 requests. The range is 0 to 1000 requests.

*Service Retry Limit* — The number of times that the Server Manager will try to restart the File service, if it fails to start when you start the service. The default limit is zero retries, which retries infinitely. The range is 0 to 100 retries.

*Service Retry Delay (seconds)* — The length in seconds in which the Server Manager delays before it tries to restart the File service, should it fail to start the first time. The default delay is 60 seconds. The range is 1 to 300 seconds.

*Restart Service Now* — Type yes to start the service as soon as it is configured, or no (default) to start it later through the Server Utility. If you are configuring the service for the first time, it is

recommended that you not start the service until all of the services are installed and configured, including ODMS (if appropriate). Then you can use the Server Utility (oiutil.exe) to start all of the services.

*Turn on Trace Log* — Turns on tracing for the File service. Trace information is sent to the event log file, `oix.log`, regardless of the Global Event Log Level set in the Utility/Event Log service, and appears on the Event Log screen in the Server Utility. It is recommended that you keep tracing off (default) because it can degrade system performance and use a significant amount of disk space.

*Volume Mapping File* — The file that is used for mapping (aliasing) user-specified volume names to pathnames on the Windows NT filesystem. The default is `vols.dat`.

**3** In the Perform Changes? field, type `y`, and press Enter. The system updates the Server Configuration file, `oix.conf`.

## Configuring the Name Service

To configure the Name service:

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 6 (Name Service), and press Enter. The Name Service screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields, and press Enter.

*Service Process Limit* — Limits the number of concurrent client requests that the Name service will process. The default limit is 256 requests. The range is 0 to 1000 requests.

*Service Retry Limit* — The number of times that the Server Manager will try to restart the Name service, if it fails to start when you start the service. The default limit is zero retries, which retries infinitely. The range is 0 to 100 retries

*Service Retry Delay (seconds)* — The length in seconds in which the Server Manager delays before it tries to restart the Name service, should it fail to start the first time. The default delay is 60 seconds. The range is 1 to 300 seconds.

*Restart Service Now* — Type yes to start the service as soon as it is configured, or no (default) to start it later through the Server Utility. If you are configuring the service for the first time, it is

recommended that you not start the service until all of the services are installed and configured, including ODMS (if appropriate). Then you can use the Server Utility to start all of the services.

*Turn on Trace Log* — Turns on tracing for the Name service. Trace information is sent to the event log file, `oix.log`, regardless of the Global Event Log Level set in the Utility/Event Log service, and appears on the Event Log screen in the Server Utility. It is recommended that you keep tracing off (default) because it can degrade system performance and use a significant amount of disk space.

3 In the Perform Changes? field, type `y`, and press Enter. The system updates the Server Configuration file, `oix.conf`.

## Configuring the License Service

During the Eastman Software Imaging Server installation, the setup program enables you to type in software license information from your Installation Authorization Card. If you were unable to configure the License Service at that time, or if your licensing agreement has changed, you need to access the License Service screen. You must properly configure the License Service screen before you can start the image services.

To access the License Service screen:

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 7 (License Service), and press Enter. The License Service screen appears.



- 2 In the Configure Service with Defaults? field, type *y*, and press Enter. Accept the current values, or type in values for the following fields using information from your Server Installation Authorization Card, and press Enter.

*Serial Number* — The serial number listed on your authorization card.

*Authorization Code* — The authorization code listed on your authorization card.

*Capacity Code* — The capacity code listed on your authorization card.

*Maximum Number of Concurrent Users* — The number of concurrent users listed on your authorization card.

- 3 In the Do you want to make changes? Field, type *y* and press Enter to make the changes you entered.

## Configuring Volumes for Client Access to Images and Documents

The magnetic volume mapping file, `vols.dat`, is a configuration file used by the Image File and Document Management services to map volume names (aliases) to the directories where clients' image files and databases are stored. During Imaging Server installation, a `vols.dat` file is created similar to the following example:

```
#
# $Header: R:/RCS/vols.dat,v 1.2 1997/07/30 16:15:06 das Exp
#
#
# Eastman Software Imaging Server volume configuration file
#
#Each line contains:
#Logical volume name (1..15) characters
#Resolution pathname (1..1024) characters
#Media type of volume:
# MEDIA_MAGNETIC   Magnetic disk
# MEDIA_WDOC1      Wang Document Manager Database
#
# Vol           Path/           Media
Client1         D:\Client1      MD
Client2         D:\Client2      MD
Client3         D:\Client3      MD
```

The Volume Configuration screens in the Configuration Utility provide an interface to the `vols.dat` file. They enable you to list, add, and remove volumes as required by your client configuration. You add volume names, drive and directory location, and media type to the `vols.dat` file, as follows:

- The volume names that you create and add to the `vols.dat` file are case sensitive, so you must type in the correct uppercase and lowercase letters. (Some applications such as Cabinet require all lowercase volume names.)
- The path of a volume must be a valid drive and directory. If the directory does not exist, it will be automatically created. It is recommended that you add volumes to an area of your system

that is expandable, and where files are not regularly deleted. Be sure to check for available physical hard drive space.

- The media type for a volume can be either MD or MEDIA\_MAGNETIC (for magnetic disk) or MEDIA\_WDOC1 (for Wang Document Management Database). Do not add WORM optical volumes to the vols.dat file. The Volume Management service maintains all of the vols.dat volumes as well as all mounted and enabled ODMS optical volumes, so you do not need to add optical volumes in the vols.dat file.
- If the image services are running, you must update the Image File service through Service Management in the Server Utility for Volume Configuration changes to take effect. You do not need to halt and resume the service. If a volume maps to a document database, you must also update the Image Document service.

**Note:** For information about updating an individual service in the Server Utility, refer to Chapter 7.

To configure the volume mapping file, vols.dat:

- 1 From the Eastman Software Imaging Server Configuration Utility, select option 8 (Volume Configuration), and press Enter. The Volume Configuration screen appears.



- 2 Select one of the following options, and press Enter.

*Volume Configuration* — Configures the Volume Management service.

*List Volumes* — Lists the names, drive and directory locations, and media type of the configured volumes.

*Add a Volume* — Adds a volume to the Volume Mapping File, vols.dat.

*Remove a Volume* — Removes a volume from the configuration.

## Configuring the Volume Management Service

The Volume Configuration enables you to set default values for the Volume Management service. To access the Volume Configuration screen:

- 1 From the Volume Configuration screen, select option 1 (Volume Configuration), and press Enter. The Volume Configuration screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields, and press Enter.

*Volume Mapping File* — The drive and directory location and name of the volume mapping file. The default volume mapping file is `...\Config\vols.dat`.

*Maximum Number of Volumes* — The maximum number of volumes that can be configured on the system. The default is 256 volumes.

## Listing Volumes

The List Volumes option enables you to view the names, drive and directory locations, and media type of the configured volumes.

To list the volumes:

- 1 From the Volume Configuration screen, select option 2 (List Volumes), and press Enter. The List Volumes screen appears.



- 2 To return to the Volume Configuration screen, press Enter.

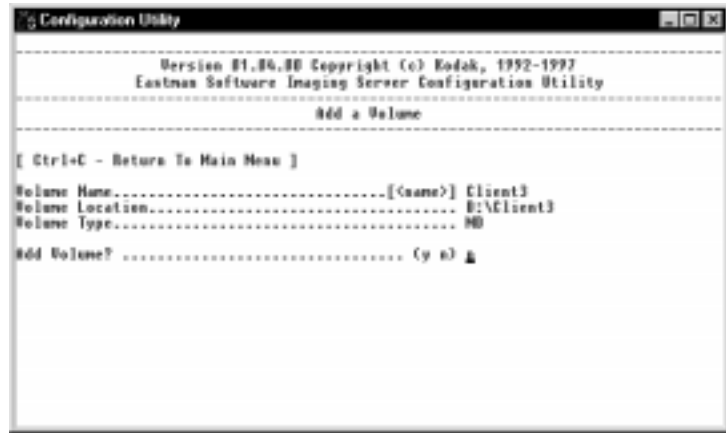
## Adding a Volume

The Add a Volume option enables you to add volume information to the Volume Mapping File, vols.dat. After adding the volume(s), you must update the service(s) that use volume names for the changes to the vols.dat file to take effect.

To add a volume

- 1 From the Volume Configuration screen, select Add a Volume, and press Enter. The Add a Volume screen appears.

- 1 From the Volume Configuration screen, select option 3 (Add a Volume), and press Enter. The Add a Volume screen appears.



- 2 In the fields at the bottom of the screen, type in the following configuration information, and press Enter.

*Volume Name* — Unique name of the volume you are adding, which is used as an alias for a drive and directory. (Some applications require all lowercase volume names.)

*Volume Location* — Full pathname of the volume you are adding. Must be a valid drive and directory. If the directory does not exist, it will be automatically created. It is recommended that you add volumes to an area of your system that is expandable, and where files are not regularly deleted. Be sure to check for available physical drive space as well as logical file system space.

*Volume Type* — Type of volume, which can be magnetic disk (MD or MEDIA\_MAGNETIC) or Wang Document Management Database (MEDIA\_WDOC1).

- 3 In the Add Volume? field, type y, and press Enter. The volume directory is created on the filesystem disk, and the volume mapping information is included in the Volume Mapping File, vols.dat.

## Removing a Volume

The Remove a Volume option enables you to remove a volume from the Volume Mapping file, vols.dat. The directory is not deleted to protect from unintentionally deleting files. After removing a volume, you must update the service(s) that use volume names for the changes to the vols.dat file to take effect. Then you can manually remove the directory from the system, if desired. You need to remove any entries in your document databases that reference the removed volume, if any.

To remove a volume

- 1 From the Volume Configuration screen, select option 4 (Remove a Volume), and press Enter. The Remove a Volume screen appears.



- 2 In the Volume Name field, type the name of the volume you want to remove, and press Enter.
- 3 In the Remove Volume? field, type *y*, and press Enter. The volume is removed from the Volume Mapping file. The directory on the NT Server filesystem is not deleted, but can be removed manually, if desired.

## Configuring the Cache, Queue, and Archive Services

The following sections provide information about configuring the following services:

**Cache service** — Provides one or more magnetic directories for clients to access optical and magnetic files from the server. The Cache service provides persistent caching of files over system re-starts. The Cache utility (`oicutil.exe`) enables you to access and control active cache directories and files.

**Queue service** — Provides server administrators with a service to review, modify, and delete file transfer and archive requests. The Queue utility (`queutil.exe`) is a command line interface that enables you to review and manage object transfer and archive job requests.

**Archive service** — Provides server administrators with a facility to perform unattended, multi-volume backups of document and files. The Archive utility (`arcutil.exe`) is a command line interface that enables you to submit archive jobs for processing, and to access and control jobs on the Archive queue.

## Accessing the Cache, Queue, and Archive Service Screens

To access the Cache, Queue, and Archive service screens

- 1 From the Eastman Software Imaging Server Configuration Utility main menu, select option 9 (Cache Service/Queue

Service/Archive Service), and press Enter. The Cache Service/Queue Service/Archive Service screen appears.



## Configuring the Cache Service

The Cache service enables clients to retrieve commonly-accessed optical files from one or more magnetic cache directories rather than from optical media on the same server.

The Cache service is shipped with the following files:

...\**Program\oicutil.exe** — The Cache utility enables you to access and control one or more active cache directories on the server. This command line interface enables you to list status information about configured caches and cached files. Listing options include cache attributes, cache contents, cached file attributes, cache housekeeping information, directory information, and version information. To view a complete description of the Cache utility, click on `readme.oicutil.txt` (located in the server installation directory).

...\**Config\cache.conf** — The cache configuration file contains the name and attributes of each cache directory. This

file is created during cache configuration, and is modified when you configure, add, or remove a cache directory through the Configuration Utility.

...\Work\cache.dat— The cache memory mapping file contains a table of pointers to active cache files. This dynamic data file is created when the Cache Housekeeping service is initialized.

When you set up multiple caches, the files are distributed among the caches based on the rules you establish for each cache. Starting with the most recently configured cache, each cache is checked until the file meets the criteria of the cache. The attributes you specify include cache capacity, minimum/maximum object size, high/low water mark, access mode, and read cutoff size.

If you configure multiple caches similarly (same capacity and high/low water mark), the files are distributed evenly among the caches, as shown in the following example:

```
cache_1 30 files
cache_2 30 files
cache_3 30 files
cache_4 29 files
```

## Cache Initialization

Caches are built/rebuilt during initialization from the information in the `cache.conf` configuration file. Any pre-existing cache files will remain cached until you remove them manually through

the Cache Utility, `oicutil.exe` or until cache housekeeping removes them when the cache retention period expires.

**Note:** *Before configuring a cache, you must Halt or Terminate the File service. After you configure the cache, restart or resume the service for the modifications to become effective.*

*Before running a cold start through the Cache Utility (`oicutil -ic`), you must Halt or Terminate the File service. A cold start will destroy all previously cached objects.*

## Cache Housekeeping

The cache housekeeping environment monitors the caching process, as follows:

- Performs a periodic check of cache retention period (age) for cached files, and deletes aged files from the cache directory. The default Cache Housekeeping Frequency is 10,800 seconds, or every 3 hours.
- Employs a Least Recently Used (LRU) methodology in which LRU files are flushed to optical disk when required. Cache housekeeping monitors the status of each cache directory and the attributes of each file in the cache. If a cache directory reaches the High Water Mark that you set, LRU methodology removes cached files from the directory down to the Low Water Mark that you set, to permit new files to enter the cache.

## Cache Configuration Options

To configure the Cache Service

- 1 From the Cache Service/Queue Service/Archive Service screen, select option 1 (Cache Configuration), and press Enter. The Cache Configuration screen appears.



- 2 Select one of the following options, and press Enter.

*General Cache Configuration* — Sets the location of the cache configuration and memory mapping files, and configures the cache housekeeping frequency.

*Housekeeper Service* — Sets the location of the cache configuration and memory mapping files, and configures the cache housekeeping frequency.

*List All Caches* — Lists the names and drive and directory locations of the configured caches.

*Add a Cache* — Adds a cache.

*Change/Show Characteristics of a Cache* — Displays and modifies the characteristics of a configured cache.

*Remove a Cache* — Removes a cache from the configuration.

## General Cache Configuration

The General Cache configuration option enables you to define cache configuration file pathnames, and cache housekeeping frequency.

To configure general cache parameters:

- 1 From the Cache Configuration screen, choose the General Cache Configuration option. The General Cache Configuration screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields.

*Cache Configuration File* — Drive and directory location of the cache.conf file, which contains the name and attributes of each cache directory.

*Cache Memory Mapping File* — Drive and directory location of the oixcache.dat file, which contains a table of pointers to active cache files.

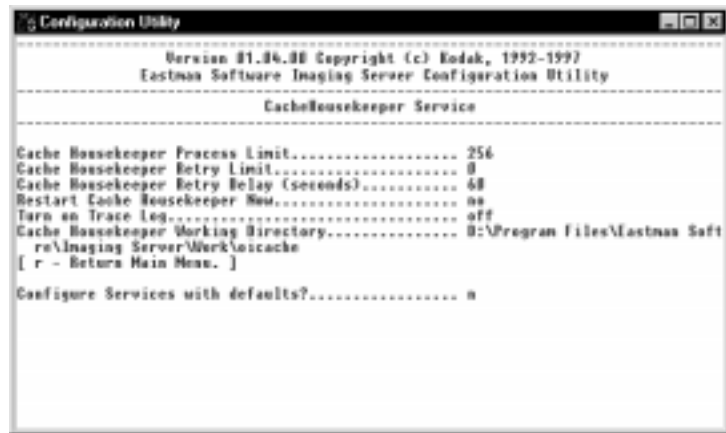
*Cache Housekeeping Frequency* — Performs periodic checking of aged objects, directory efficiency, and other tasks. The default of 10,800 seconds (3 hours) is recommended.

## Cache Housekeeper Service

The Cache Housekeeper service monitors the status of each cache directory and the attributes of each file in the cache. Based on the frequency you set in the General Cache Configuration screen, it performs a periodic check of the retention period you set for cached files when you add a cache directory, and deletes aged files from the cache.

To configure cache housekeeping parameters:

- 1 From the Cache Configuration screen, choose the Cache Housekeeper Service option. The Cache Housekeeper Service screen appears.



- 2 In the Configure Service With Defaults? field, type *y* to configure the service with the shipped defaults, or *n* (default), and press Enter. If you typed *n*, type in values for the following fields.

*Cache Housekeeper Process Limit.* — Limits the number of concurrent cache requests that the service will process. The default limit is 256 requests. The range is 0 to 1000 requests.

*Cache Housekeeper Retry Limit* — The number of times the Server Manager will try to restart the service, if it fails to start when you start the service. The default limit is zero retries, which retries infinitely, and the range is 0 to 100 retries.

*Cache Housekeeper Retry Delay (seconds).* — The length in seconds in which the Server Manager delays before it tries to restart the service, should it fail to start the first time. The default delay is 60 seconds. The range is 1 to 300 seconds.

*Restart Cache Housekeeper Now* — Type yes to start the service as soon as it is configured, or no (default) to not start the service.

*Turn On Trace Log* — Turns on tracing for the Cache Housekeeper service. Trace information is sent to the event log file, oix.log, regardless of the Global Event Log Level set in the Utility/Event Log service, and appears on the Event Log screen in the Server Utility, oiutil.exe. It is recommended that you keep tracing off (default) because it can degrade system performance and use a significant amount of disk space.

*Cache Housekeeper Working Directory* — The work-in-progress directory for the cache housekeeper. The default subdirectory is \<install directory>\Config\oicache.

## Listing All Caches

The List All Caches option enables you to view the names and directory locations of the optical file system caches.

To list all caches:

- 1 From the Cache Configuration screen, select List All Caches, and press Enter. The List All Caches screen appears.



**Note:** The cache name is a unique logical name assigned to a cache, and the cache path is the drive and directory location of the cache.

- 2 To return to the Cache Configuration screen, press Enter.

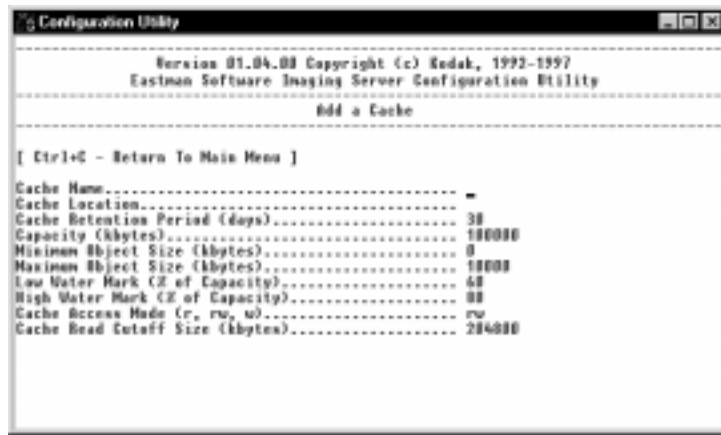
## Adding a Cache

The Add a Cache option enables you to add an optical file system cache.

**Note:** After adding a cache, you must halt and resume the Cache Housekeeping service in the Server Utility for the change to take effect. You can manually preload the cache through the Cache Utility, oicutil.exe.

To add a cache:

- 1 From the Cache Configuration screen, select Add a Cache, and press Enter. The Add a Cache screen appears.



- 2 In the fields at the bottom of the screen, type in the following configuration information, and press Enter.

*Cache Name* — Unique logical name for the cache you are adding.

*Cache Location* — Drive and directory location of the cache you are adding. If the directory does not exist, it will be automatically created. It is recommended that you add caches to an area of your system that is expandable, and where files are not regularly deleted. Each cached object consumes approximately 500 bytes of disk space in addition to the size of the cached file. Each cache should be configured on a separate, mounted file system no larger than 2048 MB (2 GB) in size. Be sure to check for available physical hard drive space as well as logical file system space.

*Cache Retention Period (days)* — Age or lifespan of a file in the cache you are adding (default is 30 days). When cache files reach their retention period, cache housekeeping automatically deletes them from the cache. (A file may be deleted before its retention period if the High Water Mark is reached and it is the LRU file.) A cache retention period of 0 days creates a tempo-

rary cache, and cache housekeeping deletes cache files immediately after use.

*Capacity (kbytes)* — Total cache capacity allocated for cached files for the cache you are adding (default is 100,000 KB). The capacity should be at least two times the size of your largest file. If your largest file is 100,000 KB, then you should set this value to at least 200,000 KB. Be sure that the disk space you are allocating for each cache directory is available on your system. The maximum capacity of each cache is 2,048,000 KB (2 GB).

*Minimum Object Size (kbytes)* — Minimum file size allowed in the cache (default is 0 KB).

*Maximum Object Size (kbytes)* — Maximum file size allowed in the cache (default is 10,000 KB). When configuring multiple caches, you can adjust this value to control the size of the largest file in each cache.

*Low Water Mark (% of Capacity)* — Ratio (percent) at which cache housekeeping will stop deleting files in the cache based on LRU methodology (default is 60 percent).

*High Water Mark (% of Capacity)* — Ratio (percent) at which cache housekeeping will begin deleting files in the cache based on LRU methodology (default is 80 percent).

*Cache Access Mode (r, rw, w)* — Access rights for the cache directory. A value of r (read only) will prevent users from writing to optical volumes, and can be used for secure copies or backups to magnetic disk. A value of w (write only) will prevent users from reading from optical volumes, and can be used for secure copies or backups to optical disk. The default value of rw (read/write) is recommended.

*Cache Read Cutoff Size (kbytes)* — Determines whether a file will be completely or partially cached. Files that are smaller than the Cache Read Cutoff Size are fully cached, and files that are larger than the Cache Read Cutoff Size are partially cached.

- 3 In the Add Cache? field, type y, and press Enter. The cache directory is created on the magnetic disk, and is listed in the `cache.conf` configuration file.

## Changing/Showing the Characteristics of a Cache

The Change/Show Characteristics of Cache option enables you to view the characteristics of a cache, and to reconfigure or modify the cache.

**Note:** Before reconfiguring or modifying a cache, you must stop the Imaging Server through the Control Panel, and halt the Cache Housekeeper service through the Server Utility. After you reconfigure the cache, resume the Cache Housekeeper service, and start the Imaging Server through the Control Panel for the modifications to take effect.

To view and change the characteristics of a cache:

- 1 From the Cache Configuration screen, select Change/Show Characteristics of a Cache, and press Enter. The Change/Show Characteristics of a Cache screen appears.



- 2 In the Select Number of Cache To Change? field, specify the number of the cache you want to change or view, and press Enter. The characteristics of the cache you selected appear.



- 3 In the Change Cache? field, type n if you do not want to reconfigure or modify the cache, and press Enter. To change the cache, type y, and press Enter. Type in the cache configuration information, and press Enter.

**Note:** For information about the cache characteristics fields, refer to the section titled "Adding a Cache."

- 4 In the Change Cache? field, type y, and press Enter. The cache is changed with the characteristics that you selected.

## Removing a Cache

The Remove a Cache option enables you to remove a cache from the `cache.conf` configuration file. The directory is deleted if the directory is empty.

**Note:** Before removing a cache, you must halt the Cache Housekeeper service through the Server Utility. After you remove the cache, resume the Cache Housekeeper service through the Server Utility for the modifications to take effect. You can manually delete any files that remain in the directory.

To remove a cache:

- 1 From the Cache Configuration screen, select Remove a Cache, and press Enter. The Remove a Cache screen appears.



- 2 In the Select Number of Cache to Remove field, specify the number of the cache you want to remove, and press Enter.
- 3 In the Remove Cache? field, type `y`, and press Enter. The cache is removed from the `cache.conf` configuration file. The directory is not deleted, but you can remove it manually.

## Configuring the Queue Service

The Queue service provides a multiple-server queue for multiple Host Application Service client requests that can be processed asynchronously. The queue library contains the application requests (jobs) and their supporting parameters. You can access and control the queue library through the Queue utility (queutil.exe).

The Queue service is shipped with the following files:

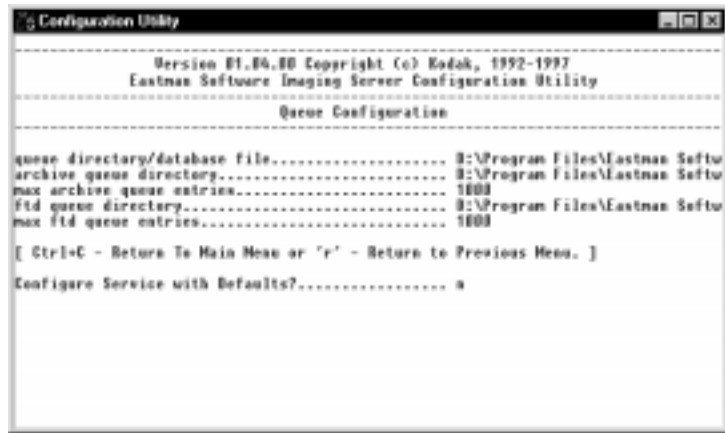
...\Program\queutil.exe — The Queue utility that enables you to access and control the service queues that can be used by the server administrator. To view a complete description of queutil.exe, you can access the man pages by typing

...\Config\queue.conf — The queue configuration file that contains the drive and directory location and configuration values for each queue. This file is created during Queue service configuration, and is modified when you change the queue configuration values through the Configuration Utility.

...\Work\queue.dat — The queue database including the contents of all queued requests.

To configure the Queue service:

- 1 From the Cache Service/Queue Service/Archive Service screen, select option 2 (Queue Configuration), and press Enter. The Queue Configuration screen appears.



- 2 In the fields at the bottom of the screen, type in the following configuration information, and press Enter.

*Queue Directory/Database File* — The Queue database including the contents of all queued requests. The default is ...\\Work\\oiqueue.dat.

*Archive Queue Directory* — Path location of the Archive queue. The default is ...\\Work\\queue\\arc.

*Max Archive Queue Entries* — The number of entries allowed in the Archive queue. The default is 100.

*FTD Queue Directory* — The path location of the Fast Transfer and Delivery (FTD) queue. The default is ...\\Work\\queue\\ftd.

*Max FTD Queue Entries* — The maximum number of entries allowed in the queue. The default is 100.

- 3 In the Perform Changes? field, type y, and press Enter. The system updates the configuration file with the selected parameters.

## Configuring the Archive Service

The Archive service enables Host Application Service client and server administrators to perform Server-based unattended archive (backup) of documents and files for permanent storage. The source and destination document or file specified in the Archive script can be on different media (optical and magnetic) and different servers within the same domain.

The Archive service is shipped with the following files:

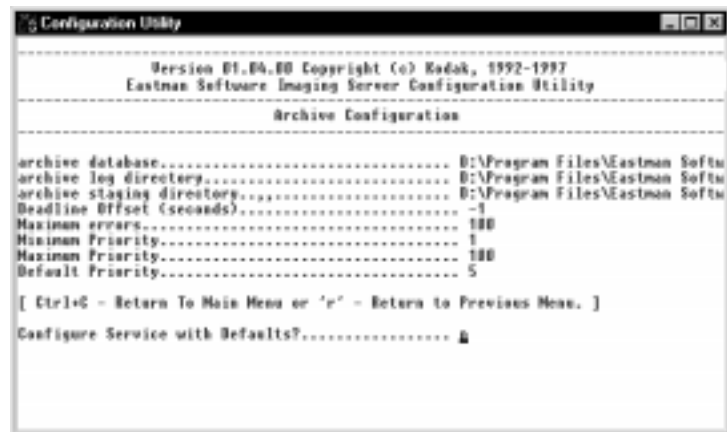
...\**Program\arcutil.exe** — The Archive utility that enables you to access and control the Archive queue.

...\**Config\archive.conf** — The Archive configuration file that contains non-configurable values for the Archive service.

...\**Work\archive.dat** — The Archive service work-in-progress data file.

To configure the Archive service:

- 1 From the Cache Service/Queue Service/Archive Service screen, select option 3 (Archive Configuration), and press Enter. The Archive Configuration screen appears.



- 2 In the fields at the bottom of the screen, type in the following configuration information, and press Enter.

*Archive Database* — The Archive service work-in-progress data file. The default is ...\\Work\\archive.dat.

*Archive Log Directory* — The directory for the overall archive log file and the individual archive job log files. The default directory is ...\\Work.

*Archive Staging Directory* — The directory that contains the Archive work-in-progress data file. The default directory is ...\\Work.

*Deadline Offset (seconds)* — The default is -1.

*Maximum Errors* — The default is 100.

*Minimum Priority* — The default is 1.

*Maximum Priority* — The default is 100.

*Default Priority* — The default is 5.

- 3 In the Perform Changes? field, type y, and press Enter. The archive directory is created on the magnetic disk with the selected parameters.

## Configuring Clients for Imaging Server Access

After you have configured and started the Imaging Server services, you are ready to configure clients for Imaging Server access, which include:

- Providing logins for any Imaging Server clients that are not configured
- Installing and configuring the client software
- Converting any existing Document Manager databases (if applicable)
- Configuring volumes using the Volume Configuration option in oixutil. The volume names are aliases mapped to user

directories on the Imaging Server. The volume names appear in the magnetic volume mapping file, `vols.dat`.

## Providing Logins for Imaging Server Clients

Client access to the Imaging Server services is provided by the native security facilities on the Windows NT Server. The login at the client workstation identifies the user to the Windows NT Server, and determines the level of access to the Imaging Server services.

To provide logins for image services clients, use the Windows NT Server administrative procedures to provide each client that is allowed to access the Imaging Services with a login account and password.

## Configuring the Client Workstation

This section discusses the following steps for completing the client workstation installation:

- Identifying Windows NT Server IP address information for clients
- Configuring clients for the Document Management service
- Configuring clients for the File service

For more information about client installation and configuration, refer to the documentation that is shipped with your client software.

## Identifying Windows NT Server Address Information

After you configure the Name service, the screen displays the following information:

- Internet address of your Windows NT Server, which is used by the client PC workstation to establish communications with the server. For example, 197.56.214.227.

- TCP port number of the Name service (wangoiname), which is used during the client workstation installation. For example, 4010.

For example, to configure a Cabinet for Windows client, you provide the IP address and TCP port number in the NAMESERVER field in the [O/i] section of the WOI.INI and WOICAB.INI files (or application-specific .INI file), either directly or through the installation procedure.

For example, type:

```
NAMESERVER=197.56.214.227/4010
```

## Configuring for the Document Management Service

To configure the client workstation for the server-based, Document Management service:

- 1 Make sure that a document database directory exists on the server, and that enough disk space is available. The directory should be set up exclusively for storing a client document database. The database directory must be available to everyone, but you can modify higher-level directories to meet your security requirements.
- 2 For use during the client workstation installation, record the following information:

*Room Name* — Server name running the Document Management service (for input into the DMRoomName field). For example, type:

```
SERVER1.wangoidm
```

*Document Database Path* — Server directory that contains the document database (for input into the DMSysPath field). For example, type:

volume:\path\ (volume is optional)

**Note:** The volume name must be defined in the vols.dat file, and mapped to a magnetic directory on the Windows NT Server. The full length of the document database path should be less than 256 bytes. All clients sharing the same document database should point to the same path. For more information about the Document service, refer to Chapter 5.

## Configuring for the Image File Service

If the client workstation is used to store image files on the server during auto-document scanning and file creation, you should specify the location on the server where the image files are to be stored, as follows:

- 1 Make sure that the directory used to store image files and other objects exists on the server, and that enough disk space is available.
- 2 For use during the client workstation installation, record the following information:

*Image Files Path* — Full path location of image files (for input into the FilePath and DMFilePath fields). For example, type:

SERVER1\volume:\path\

**Note:** The volume name must be defined in the vols.dat file, and mapped to a magnetic directory on the Windows NT Server. The full length of the file path should be less than 1024 bytes.

## Migrating Existing Document Manager Databases

The Document service supports the conversion and migration of databases from UNIX platforms to the format required by the Windows NT Server. The only versions that are supported for

upgrade are 1.2 or above. Older database versions must be upgraded to 1.2 or above before upgrading to 1.4.

**Note:** For prerequisites and complete instructions about migrating a Document Manager database, refer to Chapter 5.

## Setting Persistent Connection Values for the Image File Service

The File service is persistently connected for 600 seconds (10 minutes) by default. The expiration of this time is checked by counting clock ticks. You can specify any period of time (in seconds) that clients are persistently connected to the File service using the `tmoutvalue` value in the Server Configuration file, `oix.conf`. You can add the `tmoutvalue` for the File service in the `wangoifile` stanza.

For example, add:

```
wangoifile:
tmoutvalue = 900
```

If the timeout value is missing from the stanza, the 10 minute default will be used.

**Note:** *You cannot associate a time out value with the Document Management service. The Document Management service is persistently connected from the time that clients are first initialized.*

## Server Support Services



The Eastman Software Imaging Server support services include the Name and Information services.

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## Name Service

The Name service provides users of PC client applications with access to information about the location of Imaging Server services on the network. The Name service provides lists of service names, types, and port numbers.

The Name service enables clients to obtain the list of services that have been configured on the server. Clients can request lists of the types of services (for example, Image File and Document Management) available on each server.

### Name Service Database

The Name service builds a `services.bytype` file, located in the `\Config` directory, based on the configuration of the services. The file uses information that is appended to the server services file. The `services.bytype` map contains a list of the services by type and the server name.

The following sample shows a `services.bytype` file:

```
WANGDOCUMENT SERVER1.wangoidm
WANGFILE SERVER1.wangoifile
WANGNAME SERVER1.wangoiname
WANGSRV SERVER1.wangoisrv
```

The following sample shows a list of available services appended to an server services file:

```
wangoidm 4040/tcp
wangoifile 4020/tcp
wangoiname 4010/tcp
wangsrv 4051/tcp
```

Each line of the services file contains the name that the service registers when it is first started. The adjoining column contains the port number and protocol type. The port number is the number

of the port assigned to the service for incoming requests, and from which to accept or service requests. Because the services file is shared, each service in the domain must have a unique port number and protocol assignment (the protocol must be tcp).

## Information Service

The Information service is used internally by the Imaging Server to access volume management and server status information. The Information service must be running on the server. The Information service provides the server with the following information:

- Status of the server.
- Mapped volumes available for sharing among the clients.
- Distributed document and file location information.



## File and Document Services



The Eastman Software Imaging Server provides PC clients with location-independent, file- and document-based storage and retrieval services over a local area network (LAN) using Remote Procedure Calls (RPCs).

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## File Service

The File service provides client applications with location-independent and secure access to the directory structure, image files, and data files on the server. It provides flexible, RPC-based file access regardless of the system, format, or storage media. The client/server software locates and retrieves data and image files from the server.

A client can store and retrieve files from any server directory without redirecting, or mapping drives, to the server. The main function of the File service is to provide a single and consistent method for clients to access different image file formats. The File service enables imaging client applications to:

- Read, write, and manipulate image files in TIFF, WIFF, and BMP formats.
- Create, delete, rename, and copy image and binary files; and open, read, and write to binary files on the server.
- Create, list, and delete directories on the server.
- Read and write image descriptive data, such as image type, compression, and resolution.

## Setting Persistent Connection

The File service is persistently connected for 600 seconds (10 minutes) by default. The expiration of this time is checked by counting clock ticks. You can specify any period of time (in seconds) that clients are persistently connected to the File service using the `tmoutvalue` value in the configuration file, `oix.conf`. You can add the `tmoutvalue` for the File service in the `wangoifile` stanza. For example, add

```
wangoifile:
tmoutvalue = 900
```

If the timeout value is missing from the stanza, the 10 minute default will be used.

## Document Service

The Document service provides a hierarchical image document storage and retrieval system. The service works in conjunction with a relational database management system to help organize, store, and retrieve documents.

The Imaging Server defines a document as a series of references to various image files. References consist of the page number, filename, and file location. The documents, and information to provide the hierarchical structure, are stored as records in a series of indexed files. The indexed files of a document database are created and manipulated using a database management system.

## Database Records

The files that comprise a document database reside in a single directory of the server that you configure with the Document service. Because standard filenames are used for the database files, a directory on the server can contain only one image document database.

Although the document database files must be contained in a single directory, the image files referenced by a document can reside in different directories on the servers. Multiple document databases can exist on the server, depending on your needs.

Groups who want to share a common database can set up each client workstation to point to the same room (server) where the database is located. For example, the server name and directory are recorded in the DMRoomName and DMSysPath fields in the WO1.INI and WOICAB.INI files (or application-specific .INI file) on the client.



If you expect the Document Management database will become large, it is recommended that you keep the database in a separate server filesystem.

When reviewing a directory that contains a database, you will see a number of files with the suffixes `.dbl` and `.kfl`. These files make up the database schema, and can be accessed only by Document service.

The following sample shows a Document Manager database listing:

```
cdfid.kfl
control.dbl
control.kfl
create.kfl
docid.kfl
document.dbl
document.kfl
extent.dbl
extent.kfl
fname.
keyword.dbl
keywordl.kfl
keywords.kfl
map.dbl
map.kfl
moddate.kfl
namespace.dbl
objid.kfl
path.dbl
pathid.kfl
ptjoin.dbl
token.dbl
token.kfl
```

To access a Document Manager database in Cabinet, a user specifies in the client initialization file (`WOI.INI` and `WOICAB.INI` or application-specific `.INI` file) the directory in which the database resides. The following sample shows a client initialization file:

```
[o/i]
```

```
CabName=ROOT CABINET
DrawerName=ROOT DRAWER
FolderName=ROOT FOLDER
DMSysPath=D:\Document Databases\Finance\
DMFilePath=SERVER1\Finance:
DMRoomName=SERVER1.wangoidm
NAMESERVER=192.58.227.224/4010
```

The DMRoomName is the server on which the Document service is running, and the DMSysPath is the directory on the same server where the database records are stored. Clients that are sharing a database should point to the same server and directory.

## Running the Document Manager Export and Import Utilities

The Document Manager Export and Import utilities support the conversion and migration of databases from UNIX platforms to the format required by the Windows NT Server. The only versions that are supported for upgrade are 1.2 or above. Older database versions must be upgraded to 1.2 or above before upgrading to 1.4.

The prerequisites for database conversions include:

- Before running the Export utility on an original UNIX database, make sure all database users are logged out, and the Document Management service is halted or down.
- It is recommended that you back up the UNIX-based database before running the Export utility even though the original database is preserved.
- It is recommended that you pick an overnight or weekend to perform the conversion.

- The UNIX system must contain sufficient disk space to include both the current and revised versions of the database at the same time.
- If you interrupt the conversion process, you will need to completely rerun the Export utility on the database.
- The destination directory on the Windows NT Server must be created as a Document Database through the Configuration Utility (oixutil.exe) before running the Import utility. You will be prompted by the Import utility to delete the existing database files in that directory.
- Dmdbimp uses ftp to transfer the files from the UNIX server to the Windows NT server. Make sure an ftp user name and password are available.
- If you run dmdbimp without the ftp file transfer operation, the exported data files must be in the current directory.

## **Converting UNIX-Based Databases to Windows NT Format**

To convert a UNIX-based database for use with the Windows NT Server, you need to:

- Run the Export utility from the UNIX platform
- Create a new document database from the Windows NT Server
- Run the Import utility from the Windows NT Server

## **Running the Export Utility**

To run the Export utility from the UNIX platform:

- 1 Log on to the UNIX server where the source database is located.
- 2 Load the database export utilities, dmdbcv14, dmdbexp, and dbexp onto a directory in the PATH.
- 3 Export the data as follows:



From the UNIX server, you can type `dmbexp /help` to get information about export options.

```
dmbexp /src_dbdir <database-directory> /
dest_txtdir <export-datadir>
```

where `<database-directory>` is the directory containing the database files (the default is the current directory), and `<export-datadir>` is the directory that contains the exported data files (the default is the current directory).

Some status information will appear as the various database files (`*.db1`) are converted to their respective `dbv_*.txt` files.

## Creating a New Document Database

To create a new document database:

- 1 Log on to the Windows NT Server, and run the Configuration Utility, `oixutil.exe`.
- 2 Select option 4 (Document Service), and press Enter.
- 3 From the Document Service screen, select option 2 (Create Document Database), and press Enter.
- 4 In the Create Document Database screen, specify a unique Database Name and Database Path, type `y`, and press Enter.

## Running the Import Utility

To create a new document database:

- 1 From the database directory you just created on the Windows NT Server, run the following command to import the data:

```
dmbimp <REMOTE_SRCDB> <LOCAL_DESTDB>
<INSTALLED_IMGDIR>
```

where `REMOTE_SRCDB` = `/remote_source unix-host ftp-login-user source-data-path`,  
`LOCAL_DESTDB` = `/dest_dbdir destination-db-path`, and  
`INSTALLED_IMGDIR` = `/image_server_dir local-installed-ImageServer-path`



From the Windows NT server, you can type `dmbimp /help` to get information about import options.

- 2 The Import utility detects the existing database files that you just created, and prompts you to delete them. To delete the files and continue the conversion, type *y*, and press Enter.
- 3 Make sure the status information that appears on the screen does not contain any errors or warnings.

## Maintaining the Databases

It is recommended that you back up frequently all of the Document Manager databases on the server. A Document database directory must provide for full privileges to everyone. If database files are accidentally lost, or corrupted due to a system failure, you can re-create the database with the most recent backup. The Document service should be halted or down when you are backing up the database.

## Storage Services



This chapter describes the features of the Eastman Software Imaging Server storage services. Clients can request transfers of a file, set of files, or a document between classes of media (magnetic and optical) on the server.

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The Imaging Server storage services includes:

**Volume Configuration service** — Maintains a set of volumes (aliases) that map to directories on an image server magnetic disk.

**Cache service** — Provides one or more magnetic directories for clients to access optical files from the current server, or magnetic and optical files from other servers in the domain. The Cache service provides persistent caching of files over system re-starts.

**Queue service** — Provides asynchronous queuing for object transfer requests. The queue provides OPEN/image Host Application Service clients and server administrators with concurrent access to transfer and archive services, and permits prioritization of the requests and balancing of server workload.

**File Transfer and Delivery (FTD) service** — Provides an application-controlled mechanism for transferring objects between media and systems in the domain, including:

*Document Transfer* — Transfers document-based objects to the cache.

*File Transfer* — Transfers file-based objects to a specified destination (magnetic, optical, or cache).

*Optical and Magnetic Placement* — Transfers files associated with a new document page to a pre-defined destination based on user-defined attributes.

**Archive service** — Provides a mechanism for server administrators to schedule the movement of files and documents to permanent storage. You can submit an archive script containing document or file source, destination, and job parameter directly through the command line using the Archive utility (arcutil.exe).

**Optical Disk Management System (ODMS)** — Configures, controls, and monitors the status of 5 1/4-, 12-, and 14-inch optical disk jukeboxes and drives. For more information about ODMS, refer to the *Optical Disk Management System Administrator's Guide*.

## Volume Configuration

The Volume Configuration option maintains a set of volumes (aliases) in the vols.dat file that map to drives and directories on the server magnetic disk. The Volume Configuration option in the Configuration Utility (oixutil.exe) enables you to list all volumes, add a volume, and remove a volume.

The volume names are used by clients to store and retrieve files and documents on the server. The vols.dat file maps volume names as aliases only to the server magnetic disk. If applicable, clients can map volume names to rewritable optical disks that are accessible through the Windows NT Server file system.

The media type in vols.dat can be MD (for magnetic disk) or MEDIA\_WDOC1 (for Document Manager databases), as shown in the following sample List Volumes screen.



For information about listing, adding, and removing volumes through the Volume Configuration option in oixutil, refer to Chapter 3.

volume name	path	Media
Client1	d:\Client1	MD
Client2	d:\Client2	MD
Client3	d:\Client3	MD

Do not add WORM optical volumes to the vols.dat file. WORM optical volumes are dynamically mounted and managed by ODMS. The Volume Manager maintains the list of mounted and enabled ODMS volumes as well as the vols.dat volumes, so you do not need to add WORM optical volumes to the vols.dat file.

The following sample shows an vols.dat file:

```
#####
# System Generated
# vols.dat
#####
Client1      D:\Client1      MD
Client2      D:\Client2      MD
Client3      D:\Client3      MD
```

The volume names that you add through the Volume Configuration option in oixutil must be unique on the server. The volume names are case sensitive, so you must type in the correct uppercase and lowercase letters. (Some applications require all lowercase volume names.) The directory that corresponds to the volume name is created on the server if you use the Configuration Utility to configure the volume. The permissions on the directory will govern the access rights to the volume.

If you add a volume, you must update the File service using the Service Management option in the Server Utility (oiutil.exe). If any of the volumes map to a document database, you must also update the Document service.



For information about updating a service, refer to Chapter 7.

## Cache Service



To view information complete information about the Cache utility options, click on the readme.oicutil.txt file in the \Program subdirectory.

The storage server uses a persistent caching mechanism to provide clients with access to documents and files on WORM optical disks. The distributed caching architecture also enables clients to access data from magnetic or optical media. You can allocate one or more logical cache directories on the server for accessing WORM optical files and for moving files to and from other servers in the domain. You configure caching on the server through the Cache Service option in the Configuration Utility.

The Cache Service screens enable you to:

- Set up cache directories on magnetic disk.

- Add, list, and remove caches.
- Obtain general information about configured caches.
- Change the characteristics of caches.

Cache directories are created on the server magnetic disk, and defined in the cache configuration file, `cache.dat`, as shown in the following example:

```
cache1:
    path      = D:\cache1
    age       = 0
    capacity  = 100000
    minsize   = 0
    maxsize   = 30000
    highwater = 80
    lowwater  = 60
    accessmode = rw
    readcutoff = 204800

cache2:
    path      = D:\cache2
    age       = 0
    capacity  = 100000
    minsize   = 0
    maxsize   = 30000
    highwater = 80
    lowwater  = 60
    accessmode = rw
    readcutoff = 204800
```

The Cache utility (`oicutil.exe`) enables you to access and control active Cache directories on the server. A command line interface enables you to list status information about configured caches and cached files. Listing options include cache attributes, cache contents, cached file attributes, cache housekeeping information, directory information, and version information.

## Queue Service



To view information complete information about the Queue utility (queutil.exe) options, click on the `readme.queutil.txt` file in the `\Program` subdirectory.

The Queue service provides a queue for server administrator requests that can be processed asynchronously. The queue contains the application requests (jobs) and their supporting parameters. The Queue service supports the File Transfer and Delivery (FTD) and Archive (ARC) service queues.

The Queue service waits for jobs to appear on the queue, and then executes them. If multiple jobs appear on the queue, the service selects the job to execute first based on the following criteria:

- Priority
- Deadline date and time
- Start date and time

For example, if two jobs appear on the queue, the one with the highest priority is executed first. If both jobs have the same priority, the job with the earliest deadline is executed first. If both jobs have the same deadline, the job with the earliest start time is used. If a queued job has a start time that has not passed, the worker waits until the job is ready or until another job is added to the queue.

The queue maintains two classes of information, as follows:

**Job information** — Includes timestamps, priority, and service type for all service requests.

**Service parameters** — Lists specific parameters for the end service to process.

You can access and control the queue library through the Queue utility (queutil.exe), which enables you to list the contents of all the queues, a single queue, a priority chain, or a single queue entry. You can also delete all entries from the queue, all entries on a priority chain, or a single entry.

## File Transfer and Delivery (FTD) Service

The File Transfer and Delivery (FTD) service provides OPEN/image Host Application Service clients with OPEN/image Server support to programmatically transfer documents to local or distributed cache, and transfer files to a specified destination within the same domain, local cache, or optical disk. Files that have been indexed into a document database can be placed through user-defined attribute values in groups or clusters on any optical or magnetic disk in the domain.

The document or file source and destination can be on different media and servers within the domain. Transfer priority and/or transfer class parameters can be used to determine the priority of the document or file transfer requests. Transfer request processing is logged, which enables you to review the history of a specific document or file transfer request.

You can access and control the FTD service queue through the Queue utility (queutil.exe). The Queue utility enables you to list the contents of the FTD queue, a chain within the queue, or a single FTD job.

### Document Transfer

The FTD service provides support for the asynchronous transfer of a document to the cache. When a document is transferred, any identified user defined attributes and/or keywords will be migrated with it. A user application can pass information to a stored document to uniquely identify it.

Documents transferred to cache can be referenced by the same volume and pathname as the source document. Documents residing in cache or on WORM optical disk cannot be overwritten.

## File Transfer

The FTD service provides support for the asynchronous transfer of a file to a specified destination (magnetic or optical disk) on the server. When a destination location of a file reference includes only the server name, the source file is transferred to the cache.

File transferred to cache can be referenced by the same volume and pathname as the source file. Files residing in cache or on WORM optical disk cannot be overwritten.

## Optical and Magnetic Placement

The FTD service provides support for the asynchronous transfer (placement) of a new file to a magnetic or optical volume location on the server. The file is appended as a new page to the specified destination document. Since you know what disks are mounted on the server and how much space is available, you can determine the location of the placed files.

When a file is placed (transferred), any identified user-defined attributes are used to determine the routing of the file to the magnetic or optical destination. The file will be grouped (clustered) with other files that have the same attribute values.

You can register the user-defined attributes for file placement in the “ftd” stanza of the oix.conf file. The stanza can contain all of the attribute information or point to the location of a separate configuration file. The attributes can include priorities, application groups, and keywords. The keywords are associated with a database table and a keyword column in the Document Manager database.

## Archive Service

The Archive service enables server administrators to submit server-based unattended archive (backup) requests. Archive jobs schedule the movement of documents or files to a unit of media for permanent storage.

The Archive service enables you to submit an archive script for processing by the server. The script contains document or file source, destination, and job parameter information. Source and destination locations can be on different drives and media within the server. Archive service logging enables you to review the overall archive job log file or access individual archive job log files.

Archive scripts are submitted for processing by the server administrator directly through the command line using the Archive utility (arcutil.exe) on the server. When you submit an archive request, the job is either processed immediately or sent to the Archive queue.

You can access and control the Archive queue through the Archive utility (arcutil.exe), which enables you to list the contents of the Archive queue, a priority chain within the queue, or a single archive job. You can also add jobs, delete jobs, move jobs to a different chain, and change the priority of jobs. You can delete all queue entries, all entries from a priority chain, or a single entry.

To view a complete description of the Archive utility (arcutil.exe) options and Archive script elements, click on the readme.arcutil.txt file (located in the installation directory).

**Note:** For complete information about preparing an Archive script, refer to Appendix A.



## Server Management Services



The Server Management services enable you to manage the image services, and to display operating status and event log information through the Server Utility, `oiutil.exe`.

In This Chapter

The Server Utility enables you to monitor and control the image services, including:

- 
- Name
- File
- Document
- Information (used internally to obtain server status, and for sharing distributed file and document location and volume mapping information)

This chapter explains how to use each of the options within the Server Utility, including:

- Service Management
- Event Log Information
- Statistics Information

You can also access the Optical Disk Management Utility (ODMU). For more information about ODMU, refer to the *Optical Disk Management System Administrator's Guide*.

## Accessing the Server Utility

To access the Server Utility:

To access the Configuration Utility, perform the following steps:

- 1 Log in to the system with Administrator rights.
- 2 Click Start, point to Programs, point to Eastman Software Imaging Server (or other program group that you selected

during setup), and click Server Utility. The Eastman Software Imaging Server Utility main menu appears.



**Note:** You can navigate the options by pressing space, tab, arrow keys, and the first letter of each menu selection.

### 3 Select one of the following options, and press Enter.

*Service Management* — Displays the status of all services on the current server. If the service is running, the version number of the service is also displayed. You can start, terminate, and update all image services. In addition, you can halt, resume, and update an individual service.

*Event Log Information* — Displays the event information from the oix.log file (default) logged by the service(s) that you select.

*OD Management Utility* — Provides control over the optical disk jukebox and/or standalone drives attached to the server.

*Statistics Information* — Displays the name, version, and status information about each service.

*Exit* — Exits from the Server Utility.

## Using Command Line Options

You can run the Server Utility with command line options. To access the list of options from the command line:

- 4** From the directory where `oiutil.exe` is located, type:

```
oiutil -?
```

- 5** Press Enter. The Server Utility command line options appear.

```
oiutil Version: 01.04.00.00
```

```
usage: /oiutil [-l <logfilename>] [-v] [-?]
```

To list the Server Utility version number:

- 6** From the directory where `oiutil.exe` is located, type:

```
oiutil -v
```

- 7** Press Enter. The Server Utility version number appears.

```
oiutil Version: 01.04.00.00
```

To run the Server Utility with an Event log file other than the one specified in the `oix.conf` file (the default Event log file is `oix.log`):

- 8** From the directory where `oiutil.exe` is located, type:

```
oiutil -l <logfilename>
```

- 9** Press Enter. The Server Utility main menu appears, using the Event log file that you specified.

## Service Management

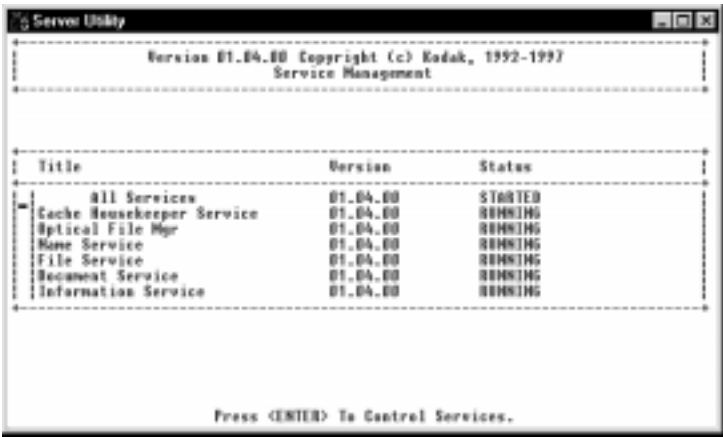
The Service Management screen displays the status of each image service that you have installed. Service Management enables you to control all services as a group, or to control an individual service. The information displayed in Service Management is updated every five seconds (default), or as you specified in the Utility Screen Refresh Interval field of the Utility/Event Log Service screen.

The Service Management option enables you to:

- Display image services and their status.
- Display the version numbers of all services that are running.
- Start, terminate, or update all services.
- Halt, resume, or update an individual service.

To view the image services and their status:

- 1 From the Server Utility main menu, select Service Management, and press Enter. The Service Management screen appears



- 2 View the status of each image service in the following fields:  
*Title* — A listing of the image services installed on the server.  
*Service* — The names of the services as reported to the Server Utility.  
*Version* — The version of the service (displayed only when the service is running).  
*Status* — The status of All Services includes  
STARTED — The Server Manager is running. All services are available to be running.

**TERMINATED** — The Server Manager is not running. All services are down.

The status of an individual service includes

**NOT INSTALLED** — The service is not installed on the server.

**COMING UP** — The service is initializing, and will soon be running.

**RUNNING** — The service is up and available for use.

**HALTED** — The service is halted.

**DOWN** — The service is terminated because you have terminated all services.

**NEEDS RUNNING** — The service is in the process of being retried.

**COMING DOWN** — The service shut down is in progress.

**NOT RUNNABLE** — The Service Retry Limit (default of infinite tries) that you specified for the service in the Configuration Utility has not been reached.

**Note:** If the status of an image service toggles between COMING UP and NEEDS RUNNING, you must log out of any active imaging client applications, and then Halt and Resume the service.

- 3 Control all services or an individual service using the steps in the following sections.

## Controlling All Services

To control all of the image services that are installed on the server:

**Note:** You must be logged in with Administrator rights to control the services.

- 1 From the Service Management screen, place the cursor on All Services, and press Enter. The Service Control dialog box for all services appears.



- 2 Select one of the following options, and press Enter.

*Start Services* — Starts up all services installed on the Imaging Server.

*Terminate Services* — Terminates all services that are running on the Imaging Server.

*Update Services* — Updates all of the services with the configuration settings in the oix.conf file. When you reconfigure image services through the Configuration Utility, you need to update the services for the changes to take effect.

You must update services when the configuration is changed, as follows:

- Add, modify, or delete a user account and/or password on the server.
- Change the level of event logging for a service.
- Modify any parameter of an image service using the Configuration Utility.

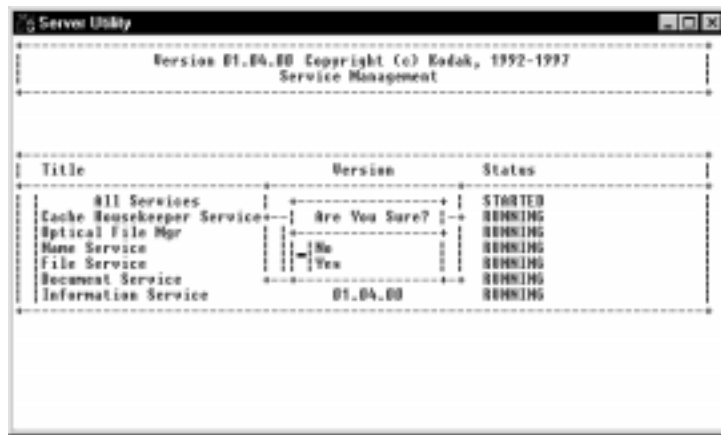
## Starting, Terminating, or Updating All Services

To start, terminate, or update all services:

- 1 Place the cursor on Start Services, Terminate Services, or Update Services, and press Enter.
  - If you selected Start Services, the status of each service is shown on the screen as COMING UP, then RUNNING. If an individual service was previously halted, it will not be started by this function. You can resume the service individually (refer to the next section).
  - If you selected Update Services, the services are automatically updated with the settings in the oix.conf file.
  - If you selected Terminate Services, the Are You Sure? prompt appears.



If you re-start the services while they are coming up or running, you will not affect their status or the system.



- 2 To complete the process of terminating all services:
  - If you decide to not terminate all services, select No (default), and press Enter (or press Esc).
  - or
  - If you decide to terminate all services, select Yes, and press Enter. The status of All Services appears on the screen as

TERMINATED, and the status of each service is shown as DOWN.

Controlling an Individual Service

To control an individual image service:

- 1 From the Service Management screen, select an image service, and press Enter. The Service Control dialog box for the service(s) that you selected appears.



- 2 Select one of the following options, and press Enter.

*Halt Service* — Halts an individual service that is running.

*Resume Service* — Resumes an image service that was halted.

*Update Service* — Updates an individual image service with the configuration settings that apply to that service in the oix.conf file. When you reconfigure an image service through the

Configuration Utility, you need to update that service for the changes to take effect.

**Note:** Some configuration changes require you to Halt and Resume the service. For example, if you add a cache for WORM optical support, you need to Halt and Resume the services that use caching (Optical File Manager and Image File service)

## Halting, Resuming, or Updating an Individual Service

To halt, resume, or update an individual service:

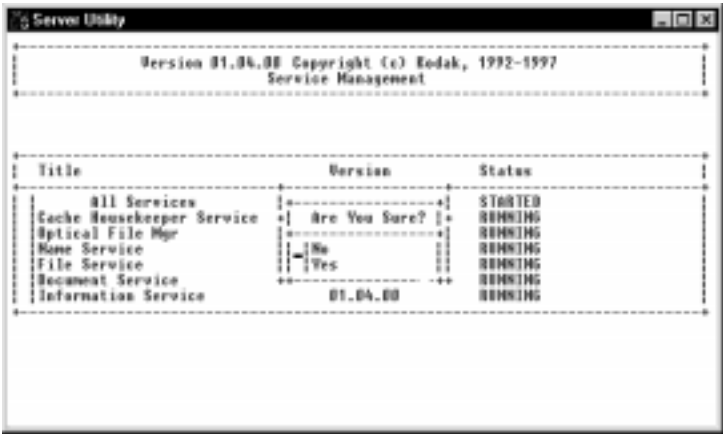
- 1 Place the cursor on Halt Service, Resume Service, or Update Service, and press Enter.



If you resume a service that is already coming up or running, you will not affect the service's status or the system

- If you selected Resume Service, the service status appears on the screen as COMING UP, then RUNNING. You can resume only those services with the status of HALTED. If the status of each service is DOWN, you must start all services.
- If you selected Update Service, the service is updated with the settings that you specified in the oix.conf file. (If you have caching set up for WORM optical support, and updated the Image File service, the service is also updated with the settings in the oix.cache file.)

- If you selected Halt Service, the Are You Sure? prompt appears.



2 To complete the process of halting an individual service:

- If you change your mind and decide to not halt the service, select No (default), and press Enter (or press Esc).
- or
- If you decide to halt the service, select Yes, and press Enter. The service's status is reflected on the screen as HALTED.

**Note:** After halting a service, you must resume it from the individual service control options (rather than starting all services). If you halt an individual service and then terminate all services, the status of the service will change from HALTED to DOWN.

## Event Log Information

The Event Log Information option enables you to view the events logged for all image services, events logged for an individual service, or events matching a string that you specify. You can view expanded information to help diagnose a problem. You can delete

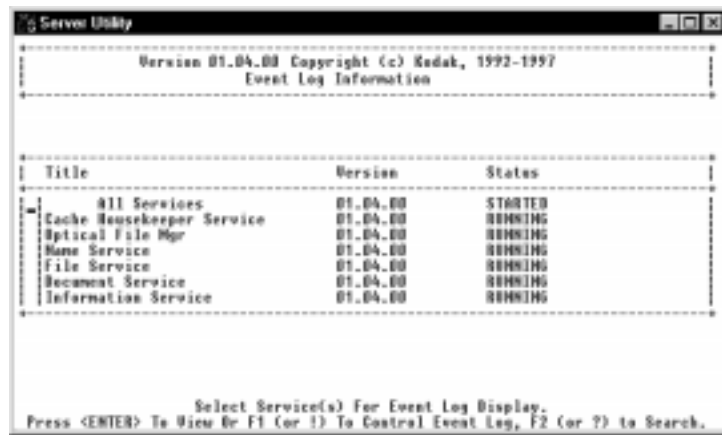
all events, or a specific group of events based on the date or severity level. The default event log file is `oix.log`.

The Event Log Information option provides the following functions:

- Displays event messages for one or all image services
- Displays possible reasons for or causes of the event
- Displays possible solutions

To use the Event Log Information option:

- 1 From the Server Utility main menu, select Event Log Information, and press Enter. The Event Log Information screen appears, and displays the image services and their status.



- 2 View the Event Log entries for one or all services (or based on a string you specify), or delete entries in Event Log, as described in the next sections.

## Viewing the Event Log

The Event Log Information option enables you to view the combined event log entries for all services, entries for an individual service, or entries based on a string you specify.

## Viewing Events for One or All Services

To view event log entries for one or all services:

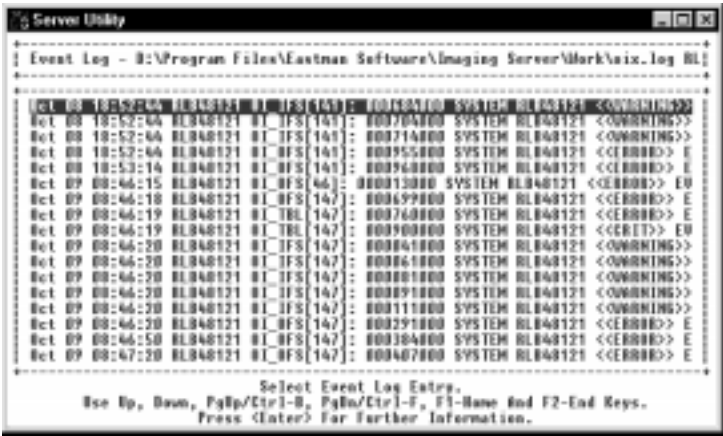
- 1 From the Event Log Information screen, select All Services (default) or an individual service, and press Enter.
  - If no events exist for a service, the following message appears:  
No Event Log Entries for Selected Service(s).  
Press <ENTER> to continue.
  - If you selected All Services, and an event exists for a service, the Event Log screen appears.
  - If you selected an individual service, and an event exists for that service, the Event Log screen appears.
  - If the Optical Disk Management System is not installed, the following event message appears in the log:

No OFS cluster found -- OFS access not available.

The Event Log screen displays the date-and-time stamp, service name, server, and the first line of information about an event.



Additional navigation keys include n or j (Down), p or k (Up), H (First message on screen), L (Last message on screen), b (Home), and e (End). If you attempt to navigate beyond the end of the Event log, you are prompted to press Enter to continue.



- 2 Select an event in which to view more information, and press Enter. (In this example, an alert event was selected.) The Expanded Event Log screen appears.



- 3 After viewing expanded information about the event, press Esc. The Event Log screen enables you to select another event.

## Viewing Events Based on a User String

To view a subset of the Event Log based on a string you specify



- 1 From the Event Log Information screen, press F1 (or ! or 1). The Log File Control dialog box appears.



- 2 Select one of the following options, and press Enter.
  - Delete Log Entries - All* — Deletes all of the entries in the log.
  - Delete Log Entries By Date* — Displays the current date (which you can modify), and deletes the events that were logged prior to that date.
  - Delete Log Entries By Severity* — Displays the list of event reporting by level of severity, and deletes all the events that were logged up to the severity you select.
- 3 Select a Log File Control option as follows:
  - To retain the event log for future reference, press Esc. All of the event log entries are retained, and the system returns to the Event Log Information screen.
  - To delete entries in the event log, select one of the delete options, and press Enter. The entries will be deleted from the event log.

## Delete Log Entries - All

To delete all of the entries from the event log:

- 1 Select Delete Log Entries, and press Enter. The Are You Sure? prompt appears.

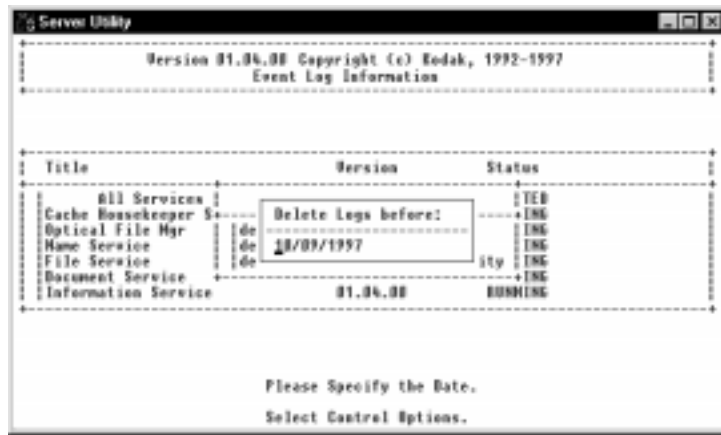


- 2 Select Yes, and press Enter. All of the entries in the event log are deleted.

**Delete Log Entries by Date**

To delete all the events logged prior to a particular date:

- 3 Select Delete Log Entries by Date, and press Enter. The Delete Logs before: prompt appears.



- 4 Select the current date (default), or type in another date, and press Enter. The events that were logged prior to that date are deleted.

## Delete Log Entries by Severity

To delete entries from the event log by severity:

- 1 Select Delete Log Entries by Severity, and press Enter. The Delete Logs Below: prompt appears.

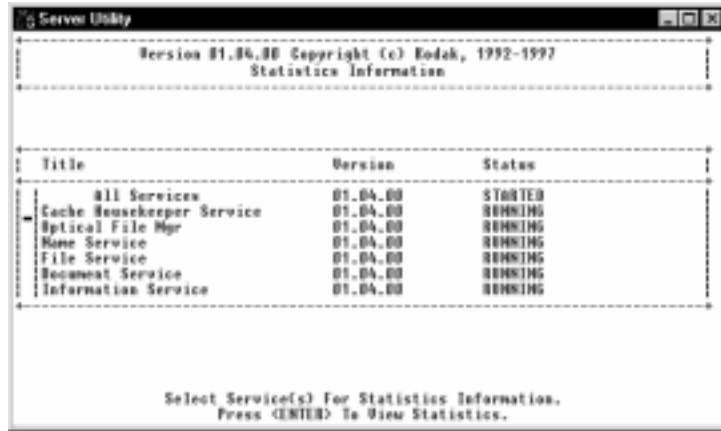


- 2 Place your cursor on the severity, and press Enter. The Are You Sure? prompt appears.
- 3 Select Yes, and press Enter. The events that were logged up to and including the severity that you selected are deleted, as follows:
- If you select Emergency (default), all events will be deleted.
  - If you select Alert, Critical, Error, Warning, Notice, or Information those events and all of the events of lesser severity will be deleted.
  - If you select Debug, only Debug messages will be deleted.

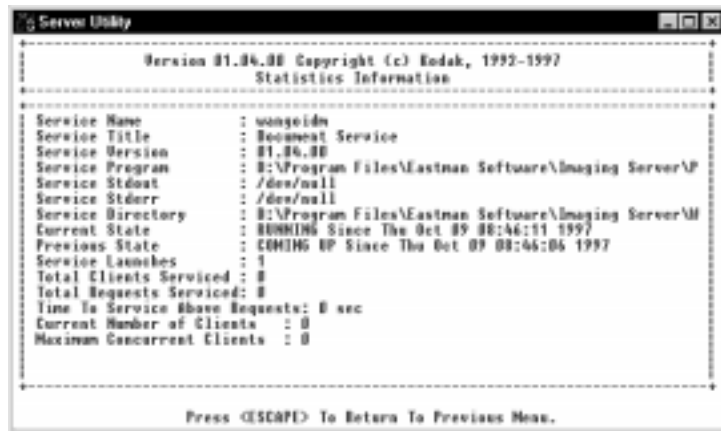
## Statistics Information

The Statistics Information option enables you to display name, version, and status information about each service that is running. To use the Statistics Information option:

- 1 From the Server Utility main menu, select Statistics Information, and press Enter. The Statistics Information screen appears, and displays the image services and their status.



- 2 To view the statistics for an individual service, place the cursor on the service, and press Enter. For example, place the cursor on the Document Service. The Statistics Information screen for the Document service appears.



View the statistics information for the Document service in the following fields:

*Service Name* — Name of the Document service.

*Service Title* — Full title of the Document service.

*Service Version* — Version number of Document service.

*Service Program* — Directory and filename of the Document service program, or daemon.

*Service Stdout* — Service standard output information, used for debugging purposes.

*Service Stderr* — Service standard event information, used for debugging purposes.

*Service Directory* — Current directory of the Document service.

*Current State* — Current status of the Document service.

*Previous State* — Previous status of the Document service.

*Service Launches* — Number of times the Document service was started before running successfully.

**Note:** The remaining fields apply only to Remote Procedure Call (RPC) services. Since the Cache Housekeeper, Optical File Manager, and Information services are not RPC services, the fields will contain a value of 0.

*Total Clients Served* — Total number of RPC clients the Document service has serviced since the last time the service was started.

*Total Requests Served* — Number of requests processed by the Document service since the last time the service was started.

*Time To Service Above Requests* — Total elapsed time of the Document service since the last time the service was started.

*Current Number of Clients* — Number of clients currently accessing the Document service.

*Maximum Concurrent Clients* — Maximum number of concurrent clients that was serviced by the Document service since the last time the service was started.

## Exiting from the Server Utility

The Exit option enables you to exit from the Server Utility main menu. To exit from the utility:

- 1 Select Exit, and press Enter. The Exit Utility? prompt appears.



If you press Esc from the Server Utility main menu, the Exit Utility? prompt appears.



- 2 If you decide to exit from the Server Utility, select Yes, and press Enter. The system returns to the location in which you executed the Server Utility.

or

If you decide to stay in the Server Utility, select No (default), and press Enter. The Server Utility main menu reappears.

## Archive Script



The Archive service supports unattended archive (backup) of documents and files through the submission of an archive script, which contains archive processing instructions for the Eastman Software Imaging Server Archive queue. Archive scripts can be submitted by Server Administrators through the Archive utility (arcutil.exe) command line options. This appendix describes the elements of the Archive script.

In this Appendix

## Archive Job Request Script

You need to prepare a script containing Archive processing instructions for the OPEN/image Server Archive queue. The script is composed of stanza/keyword definitions. Comments should be preceded by the # symbol. The script is submitted to the Archive queue for processing. Before a script is submitted to the Archive queue for processing, only the starting and deadline times are checked for syntax and logic errors. All other script contents are checked for validity when they are executed.

Server Administrators can check the status of an archive job, as follows:

- Check the status in the queue using the Archive utility (arcutil).
- View the overall and individual archive log files in /var/wang/oix/archive/ (default). (You can specify the name and path for an individual archive job log file in the log stanza of the script.)

The following table describes the archive stanzas:

Stanza	Description
criteria	Values of attributes used to select objects for archiving.
destination	Object destination location names.
log	Options for logging operation and error conditions.
plan	Starting, ending, and repeat times.
preprocess	Conditions met before archive operation starts.
postprocess	Actions after archive operation ends.
process	Conditions and actions during archive operations.
source	Object source location names.

## Internationalization

The date and time formats, the days of the week, and their abbreviations are taken from the user's environment. If the LANG environment variable is not set, the default is "C".

## Error Detection and Recovery

Archive job processing, including the recording of errors, is logged in the archive.log file, which is located in the archive log directory (default is /var/wang/oix/archive/) identified in the "archive" stanza of the OPEN/image Server configuration file, /etc/wang/oix/oix.conf. Basic recovery will occur for archive jobs that are partially executed due to halting of the archiver. An archive job will be re-executed from the point in which it was stopped. If a job was in its cleanup state when it stopped, cleanup will occur, but the job will not be re-executed.

## Stanzas

This section provides details about the archive script stanzas and their keywords. A stanza begins with the following entry:

```
<stanza name> :
```

A keyword is formatted as follows:

```
<keyword name> = <value>
```

You can include comments by entering "#" as the first character of the comment line. For examples of file and document archive scripts, refer to the section titled "Example Archive Scripts."

## Criteria

Keyword	Description
created	<p>Creation date of the document. Date (or time) expression. The format of the month, day, and year depends on the user's location. You can specify a creation date in four ways. The default is to ignore the creation time. The following criteria is available only for documents:</p> <p><i><b>Note:</b> The &lt;date expression&gt; is evaluated when the job is executed, not when the job is submitted.</i></p> <p><i><b>BEFORE</b> &lt;date expression&gt;</i> ( All documents created before the specified time will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portion for dates is 00:00:00.</p> <p><i><b>AFTER</b> &lt;date expression&gt;</i> ( All documents created after the specified time will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portion for dates is 23:59:59. Partial times default to 00.</p> <p><i>&lt;date expression&gt; TO &lt;date expression&gt;</i> ( All documents created in the specified time range will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portions are 00:00:00 for the first date expression and 23:59:59 for the</p>

(continued)

## Criteria (continued)

Keyword	Description
cabinet	Cabinet name template. The template may include the following wildcard characters: ‘*’ ( Matching zero or more characters. ‘?’ ( Matching a single character.
drawer	Drawer name template. The template may include the following wildcard characters: ‘*’ ( Matching zero or more characters. ‘?’ ( Matching a single character.
folder	Folder name template. The template may include the following wildcard characters: ‘*’ ( Matching zero or more characters. ‘?’ ( Matching a single character.
document	Document name template. The template may include the following wildcard characters: ‘*’ ( Matching zero or more characters. ‘?’ ( Matching a single character.
keyword keyword- <i>n</i>	One or more keywords. Keywords are separated by either AND or OR. You can enter multiple lines of keywords by substituting integer values for - <i>n</i> . The keywords may include the following wildcard characters: ‘*’ ( Matching zero or more characters. ‘?’ ( Matching a single character.

(continued)

## Criteria (continued)

Keyword	Description
modified	<p>Modification date of the object. Date (or time) expression. The format of the month, day, and year depends on the user's locale. You can specify a modification date in four ways. The default is to ignore the modification time. The following criteria is available for documents and files:</p> <p><i><b>Note:</b> The &lt;date expression&gt; is evaluated when the job is executed, not when the job is submitted.</i></p> <p><i><b>BEFORE</b> &lt;date expression&gt;</i> ( All documents modified before the specified time will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portion for dates is 00:00:00</p> <p><i><b>AFTER</b> &lt;date expression&gt;</i> ( All documents modified after the specified time will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portion for dates is 23:59:59.</p> <p><i>&lt;date expression&gt; TO &lt;date expression&gt; (&gt;</i> All documents modified in the specified time range will be archived. Valid date expressions are m/d/y hh:mm:ss, TODAY, NOW, TOMORROW, PREVIOUS n, day of the week, and month of the year. The default time portions are 00:00:00 for the first date expression and</p>
path	<p>File name template. The file name template may include the following wildcard characters:</p> <p>‘*’ ( Matching zero or more characters.</p> <p>‘?’ ( Matching a single character.</p>

## Destination

Keyword	Description
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path path- <i>n</i>	<p>Name of storage location to contain archived files. You can enter multiple names on the same line. You can enter multiple lines of path names by substituting integer values for <i>-n</i>.</p> <p>Paths may <u>not</u> contain wildcards.</p> <p>The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate them in the script.</p>
volume volume- <i>n</i>	<p>Name of storage volume where the objects are to be archived. You can enter multiple names on the same line. You can enter multiple lines of volume names by substituting integer values for <i>-n</i>.</p> <p>The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate them in the script.</p>
doc_db	<p>Name of database (document database name entry in oix.vols) where the documents are to be archived. This <b>MUST</b> be specified if the source is a database.</p> <p>If document pages are to be archived, then a destination volume or path for the document pages is required.</p>

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## Log

Keyword	Description
logname	Log file name. If the file already exists, the log will appended to the existing one. Otherwise, the log file will be created. If not specified, a log file is created based on the job id (archive log directory with filename _ARC<job id>.log).
header	Header text to precede log information.
errorlevel	Log errors to specified level and detail. <i>NONE</i> ( Show no error conditions. <i>PARTIAL</i> ( Show only the errors resulting from the archiving of documents and files. <i>FULL</i> ( Show all conditions.
transferlevel	Log transfers to specified level and detail. <i>NONE</i> ( Log no transfer information. <i>BASIC</i> ( Log summary statistics. <i>PARTIAL</i> ( Log summary statistics, names, and counts with no expansion. <i>FULL</i> ( Log summary statistics, expanded names of documents and files.

## Plan

Keyword	Description
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start	<p>Starting time for archive operation. The default value is the date and time the script was “submitted.”</p> <p><b>Note:</b> <i>The start time is evaluated when the job is submitted.</i></p> <p><i>m.d.y, m-d-y, or m/d/y (depending on the locale format), m, m/d, m/d/y, m/d/y hh, m/d/y hh:mm, and m/d/y hh:mm:ss ( Date (or time) expression, using format in user’s environment, indicating earliest time to start the job.</i></p> <p><b>Note:</b> <i>Objects with only date timestamps have default times of 00:00:00.</i></p> <p><i>TODAY ( Indicates today’s date with a time of 00:00:00.</i></p> <p><i>TOMORROW ( Indicates tomorrow’s date with a time of 00:00:00.</i></p> <p><i>NOW ( Indicates the current date and time.</i></p> <p><i>NEXT n ( Indicates a date ‘n’ days from now with a time of 00:00:00.</i></p> <p><i>Day ( Indicates day of the week with a time of 00:00:00.</i></p> <p><i>Month ( Indicates the first day of the month with a time of 00:00:00.</i></p>
deadline	<p>Deadline for completing the archive operation. The default date value is infinite.</p> <p><b>Note:</b> <i>The deadline is evaluated when the job is submitted.</i></p> <p><i>m.d.y, m-d-y, or m/d/y (depending on the locale format), m, m/d, m/d/y, m/d/y hh, m/d/y hh:mm, and m/d/y hh:mm:ss ( Date (or time) expression, using format in user’s environment, indicating earliest time to start the job.</i></p> <p><b>Note:</b> <i>Objects with only date timestamps have default times of 23:59:59.</i></p> <p><i>NEXT n ( Indicates ‘n’ days after the start date with a time of 23:59:59. Default for ‘n’ is 1.</i></p> <p><i>TODAY ( Indicates today’s date with an ending time of 23:59:59.</i></p> <p><i>TOMORROW ( Indicates tomorrow’s date with a time of 23:59:59.</i></p> <p><i>Day ( Indicates day of the week after the start time with a time of 23:59:59.</i></p> <p><i>Month ( Indicates the last day of the month after the start time with a time of 23:59:59.</i></p>

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(continued)

## Plan (continued)

Keyword	Description
recurring	<p>Expression indicating method to calculate the next time to perform the archive operation.</p> <p><b>Note:</b> <i>The recurring value is evaluated after the job has executed.</i></p> <p><b>NO</b> ( Do not repeat. Default condition.</p> <p><i>m.d.y, m-d-y, or m/d/y</i> (depending on the locale format), <i>m, m/d, m/d/y, m/d/y hh, m/d/y hh:mm, and m/d/y hh:mm:ss</i> ( Date (or time) expression, using format in user's environment, indicating time to repeat the job.</p> <p><b>Note:</b> <i>Objects with only date timestamps have default times of original submission start time.</i></p> <p><b>Day</b> ( Repeat the job on this day of the week.</p> <p><b>Month</b> ( Repeat the job on the first day of this month.</p> <p><b>DAILY</b> <i>n</i> ( Repeat every 'n' days. The default is '1'.</p> <p><b>WEEKLY</b> <i>n ON MON TUE WED THU FRI SAT SUN</i> ( Repeat every 'n' weeks on specified day(s). The default is '1' and day-of-week corresponding to start date. More than one day of week may be specified.</p> <p><b>MONTHLY</b> <i>n ON d1 d2 d3 ... dx LAST</i> ( Repeat every 'n' months. The default is '1' and day-of-month corresponding to start date. More than one day of month may</p>

(continued)

## Plan (continued)

Keyword	Description
end	<p>Ending time for archive operation. Meaningful only if a “recurring” expression is defined. Without this keyword, recurring jobs will run forever.</p> <p><i>Note: The end time is evaluated each time the archive job has completed.</i></p> <p><i>m.d.y, m-d-y, or m/d/y</i> (depending on the locale format), <i>m, m/d, m/d/y, m/d/y hh, m/d/y hh:mm, and m/d/y hh:mm:ss</i> ( Date (or time) expression, using format in user’s environment, indicating the time after which the job can not be repeated.</p> <p><i>Note: Objects with only date timestamps have default times of 23:59:59.</i></p> <p><i>NEXT n</i> ( Stop ‘n’ days after start date at 23:59:59. Default for ‘n’ is 1.</p> <p><i>TODAY</i> ( Finish today at 23:59:59.</p> <p><i>TOMORROW</i> ( Finish tomorrow at 23:59:59.</p> <p><i>Day</i> ( Finish on this day of the week at 23:59:59.</p> <p><i>Month</i> ( Finish on the last day of this month at 23:59:59.</p> <p><i>ITERATIONS n</i> ( Stop after ‘n’ iterations as defined in the “recurring” expression.</p>
priority	<p><i>n</i> ( Indicates job priority with a number from 1-99. This helps priorities be generated based on the information in the script.</p>

## Preprocess

Keyword	Description
capacity capacity- <i>n</i>	<p><i>n</i>KB or <i>n</i>MB or <i>n</i>GB or <i>n</i>% where <i>n</i> indicates the limiting capacity on destination volume expressed in space or percent followed by one or more destination volume keywords to designate which volume(s) to apply the limit to. Following the space or percent value by ‘ALL’ indicates that the limiting capacity should be applied to all destination volumes.</p> <p>Examples: capacity=“100KB volume-2, volume” capacity=“85% ALL”</p> <p>You can enter multiple capacity lines by substituting integer values for -<i>n</i>.</p>

## Postprocess

Keyword	Description
purge	One or more of the comma separated values described below. If <b>NONE</b> is specified, any other values will be ignored and no purging will be performed. <i>NONE</i> ( Don't purge anything. <i>FILES</i> ( Purge source files. <i>DOCUMENTS</i> ( Purge source documents. <i>KEYWORD</i> ( Purge selection keyword(s).

## Process

Keyword	Description
duplicate	Handle condition at destination. <i>OVERWRITE</i> ( Replace destination with source unconditionally. <i>SKIP</i> ( Ignore condition and continue processing. <i>ERROR</i> ( Handle condition as error and continue processing. <i>UPDATE</i> ( Replace destination with source if older. <i>Note:</i> <i>Objects with only date timestamps may skip updates.</i>
doc_name	Archive the document name and internal information. <i>NONE</i> ( Do not archive the document name. <i>COPY</i> ( (Default) Copy the document name and internal information to a new location. <i>MOVE</i> ( Move the document name and internal information to a new location. The original name and information are deleted as soon as the document is archived.
doc_pages	Archive the pages of the document. <i>NONE</i> ( Do not archive the document pages. <i>COPY</i> ( (Default) Copy the document pages to a new location. <i>MOVE</i> ( Move the document pages to a new location. The original pages are deleted as soon as the document is archived. The internal document information is updated to point to the new pages.

errorlimit n

Stop processing if error count exceeds limit n.

## Source

Keyword	Description
path path- <i>n</i>	<p>Name of storage location containing files to be archived. You can enter multiple lines of path names by substituting integer values for <i>-n</i>.</p> <p>The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate paths and volumes in the script.</p>
volume vol- ume- <i>n</i>	<p>Name of storage volume for source objects. Multiple names may be entered on the same line. You can enter multiple lines of volume names by substituting integer values for <i>-n</i>.</p> <p>The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate paths and volumes in the script.</p>
doc_db	<p>Name of database containing documents to be archived. The <i>criteria</i> stanza contains the template for the document names.</p>

## Wild Card Examples

This section includes examples of how the wild cards function. All of the examples are based on the following directory structure:

```
/work/d1/afile
/work/d1/abc/ffile1
/work/d1/abc/file1
/work/d1/abc/file2
/work/d1/abc/file3
```

```

/work/d1/arc/tests/f2
/work/d1/arc/tests/ab
/work/d1/arc/test1.c
/work/d1/arc/file1.c

```

Source Path	Files Found
/work/d1/a*	afile abc/ffile1 abc/file1 abc/file2 abc/file3 abc/tests/f2 abc/tests/ab arc/test1.c arc/file.c
/work/d1/af*	afile
/work/d1/a*/f*	abc/ffile1 abc/file1 abc/file2 abc/file3 arc/file.c
/work/d1/a*/t*	abc/tests/f2 abc/tests/ab arc/test1.c
/work/d1/abc	abc/ffile1 abc/file1 abc/file2 abc/file3
/work/d1/abc/*	abc/ffile1 abc/file1 abc/file2 abc/file3 abc/tests/f2 abc/tests/ab
/work/d1/abc/f*le1	abc/ffile1 abc/file1
/work/d1/abc/f?le1	abc/file1

## Example Archive Scripts

This section includes examples of file and document archive scripts.

### Archive Script 1 (File)

```

# O/i archive test script 1
# -----
plan:

                                start = now

```

```
source:
    path = /work/das/arc/arcf/
    pfine/
destination:
    path = /work/das/arc/arcf/d/
preprocess:
    # empty
process:
    # empty
postprocess:
    purge = NONE
log:
    logname = /work/das/arc/arcf/
    test1.log
    header = "Archive log for test
    script 1"
    errorlevel = full
    transferlevel = full
# END
```

## Archive Script 2 (File)

```
# This script will archive all *.c files from
the
# /work/as/arc directory. The job will be
executed
# every day for 30 days. The job must be
completed
# by the end of the day.
#
```

```
# O/i archive test script 2
# -----

plan:

                                start = today
                                deadline = tomorrow
                                recurring = DAILY
                                end = "next 30"

source:

                                path = /work/das/arc/*.c

destination:

                                path = /work/das/arc/arcf/d/

preprocess:

                                # empty

process:

                                duplicate = overwrite

postprocess:

                                purge = NONE

log:

                                logname = /work/das/arc/arcf/
                                test2.log
                                header = "Archive log for test
                                script 2"
                                errorlevel = full
                                transferlevel = basic

# END
```

## Archive Script 3 (File)

```
# O/i archive test script 3
# -----
```

```

plan:

    start = "12/08/95 22:00:00"
    deadline = "12/11/95 04:00:00"
    priority = 29
    recurring = "Weekly on Friday"
    end = 12/31/96

source:

    path = /work/das/*/a*.c
    path-1 = /work/das/arc/*.h
    path-2 = /work/das/arc/*.arc
    path-3 = /work/das/arc/arcf/f*

destination:

    path = /work/das/arc/arcf/d/

preprocess:

    # empty

process:

    duplicate = update

postprocess:

    purge = NONE

log:

    errorlevel = full
    transferlevel = partial
    header = "Weekly backup"

# END

```

## Archive Script 4 (File)

```

# O/i archive test script 4
# -----
plan:

```

```
start = "9/29/95 02:00"
end = 12/29/95
priority = 12
recurring = "weekly on wed fri"

source:

    path = /usr/new/name/
    path-1 = /usr/new/name1/
    path-2 = /usr/new/name2/
    path-3 = /usr/new/name3/
    path-4 = /usr/new/name4/
    path-5 = /usr/new/name5/

destination:

    path = /u/logbackup/

process:

    errorlimit = 2

postprocess:

    purge = FILES

log:

    errorlevel = full
    log=/path/log-file

# END
```

## Archive Script 5 (Capacity)

```
# This script will archive all *.c files from
the
# /src directory. The archive will stop when the
# destination volume reaches 60% of its total
capacity.
#
```

```

# O/i archive test script 5
# -----
plan:
                                start = today

source:
                                path = /src/*.c

destination:
                                volume = cbackup:

preprocess:
                                capacity = "60% volume"

process:
                                duplicate = overwrite

log:
                                logname = /logs/arc655.log
                                transferlevel = full

# END

```

## Archive Script 6 (Document)

```

# This script will archive all pages referenced
in
# document database 'imgdb' from magnetic to
optical
# volume 'backups'. Database 'imgdb' will be
updated
# to point to new document pages on optical. The
job
# will start on the next Friday and be run every

```

```
# subsequent Friday until the end of 1997.
Duplicate

# documents will not be archived.

#

# O/i archive test script 6
# -----

plan:

                                start = Friday
                                end = 12/31/97
                                priority = 12
                                recurring = "weekly on fri"

source:

                                doc_db = imgdb:

destination:

                                doc_db = imgdb:
                                volume = backups:

process:

                                errorlimit = 0
                                duplicate = overwrite

log:

                                errorlevel = full
                                logname = backup.log

# END
```

## Archive Script 7 (Document)

```
# This script will archive all documents meeting
the
```

```
# criteria to database 'backups'. Document pages
will

# be archived in volume 'data'. The job will
start on

# the next day and be run every subsequent
Friday until

# the end of 1997. Duplicate documents will not
be

# archived.

#

# O/i archive test script 7

# -----

plan: start = TOMORROW

        end = 12/31/97
        recurring = "weekly on fri"

source:

        doc_db = reports:

destination:

        doc_db = backups:
        volume = data:

criteria:

        cabinet = sales
        drawer = *west
        folder = *
        document = day*.doc

process:

        errorlimit = 0
        duplicate = skip

log:
```

```
errorlevel = full
logname = backup.log

# END
```

## Archive Script 8 (Document)

```
# This script will archive all documents in the
# database 'reports' meeting the criteria to
# database
# 'backups'. Document pages will be archived in
# volume
# 'data'. The job will start on the next day and
# be run
# every subsequent month until the end of 1997.
# Duplicate documents will not be archived.
#
# O/i archive test script 8
# -----

plan:

    start = TOMORROW
    end = 12/31/97
    recurring = monthly

source:

    doc_db = reports:

destination:

    doc_db = backups:
    volume = data:

criteria:
```

```

cabinet = sales
drawer = north*
folder = *
document = week*.doc
keywords = escort AND week?

process:

    errorlimit = 0
    duplicate = overwrite

log:

    errorlevel = full
    logname = backup.log

# END
```

# Script Elements

The following table shows the Archive script elements:

Stanza	Keyword	Valid Data	Meaning
Plan	start	Date and Time Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss] (default is date and time job is submitted) TODAY TOMORROW NOW NEXT n Day Month	The earliest date and time at which the job can start. TODAY ( Start today at 00:00:00. TOMORROW ( Start tomorrow at 00:00:00. NOW ( Start now (current date and time). NEXT n ( Start 'n' days from now at 00:00:00. Day ( Start on this day of the week at 00:00:00. Month ( Start on the first day of this month at 00:00:00.

Deadline	<p>Date and Time (default is infinite)</p> <p>Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss]</p> <p>TODAY</p> <p>TOMORROW</p> <p>NEXT n</p> <p>Day</p> <p>Month</p>	<p>When the job is required to have been started. (Think of it as a window of opportunity, with start as one boundary, and deadline as the other.)</p> <p>TODAY ( Today's date at 23:59:59</p> <p>TOMORROW ( Tomorrow's date at 23:59:59</p> <p>NEXT n ( 'n' days from now at 23:59:59.</p> <p>Day ( Day of the week at 23:59:59.</p> <p>Month ( Last day of the month at 23:59:59.</p>
----------	--	---

continued

Stanza	Keyword	Valid Data	Meaning
recurring		<p>NO (overall default)</p> <p>Date and Time</p> <p>Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss]</p> <p>Day</p> <p>Month</p> <p>DAILY n (n defaults to 1)</p> <p>WEEKLY n ON [MON-SUN] (n defaults to 1)</p> <p>MONTHLY n ON Dx (n defaults to 1)</p> <p>MONTHLY n ON LAST (n defaults to 1)</p> <p>ANNUALLY n (n defaults to 1)</p>	<p>Specifies if the job recurs and, if so, how often.</p> <p>NO (overall default) ( Don't repeat.</p> <p>Day ( Repeat on this day of the week.</p> <p>Month ( Repeat on the first day of this month.</p> <p>DAILY n (n defaults to 1) ( Repeat every 'n' days.</p> <p>WEEKLY n ON MON TUE WED THU FRISAT SUN ( Repeat every n weeks on the day specified. More than one day may be specified. If no days are specified, it will repeat weekly from the start date.</p> <p>MONTHLY n ON d1 d2 d3 ... dx (</p>

continued

Stanza	Keyword	Valid Data	Meaning
	end	<p>Date and Time</p> <p>Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss]</p> <p>NEXT n (n defaults to 1)</p> <p>TODAY</p> <p>TOMORROW</p> <p>Day</p> <p>Month</p> <p>ITERATIONS n (n defaults to 1)</p>	<p>The date and time for a recurring job to end.</p> <p>NEXT n ( Stop ‘n’ days after today.</p> <p>TODAY ( Finish today at 23:59:59.</p> <p>TOMORROW ( Finish tomorrow at 23:59:59.</p> <p>Day ( Finish on this day at 23:59:59.</p> <p>Month ( Finish on the last day of this month at 23:59:59.</p> <p>ITERATIONS n ( Stop after ‘n’ iterations as defined by in “recurring.”</p>
	Priority	A number from 1-99	Priorities will be generated from information in the script.
Source	path path- <i>n</i>	path name	<p>Name of storage location containing files to be archived. Multiple lines of path names may be entered by substituting integer values for -<i>n</i>.</p> <p>The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate paths and volumes in the script.</p>
	volume volume- <i>n</i>	volume name	<p>Name of storage volume of source objects. Multiple lines of volume names may be entered by substituting integer values for -<i>n</i>.</p>

doc_db	database name	Name of database containing documents to be archived. The <i>criteria</i> stanza contains document names, keywords, and dates.
continued		

Stanza	Keyword	Valid Data	Meaning
Destination	path	path name	Name of storage location to contain archived files. Multiple lines of path names may be entered by substituting integer values for <i>-n</i> . Paths may not contain wildcards.  The destination paths are processed first, and then the destination volumes are processed, in the order they are encountered in the script, even if you list the volumes first or alternate paths and volumes in the script.
	path- <i>n</i>		
	volume	volume name	Name of storage volume to contain archived files. Multiple lines of volume names may be entered by substituting integer values for <i>-n</i> .
	volume- <i>n</i>		
	doc_db	database name	Name of database to contain archived documents.
continued			

Stanza	Keyword	Valid Data	Meaning
--------	---------	------------	---------

criteria	created	<p>Date and Time</p> <p>Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss]</p> <p>TODAY</p> <p>NOW</p> <p>TOMORROW</p> <p>PREVIOUS <i>n</i></p> <p>Day of the week</p> <p>Month of the year</p>	<p>Select documents by their creation time. This is valid only for documents and it will be ignored for other objects. The criteria may be expressed, as follows:</p> <p>BEFORE &lt;date expression&gt;</p> <p>AFTER &lt;date expression&gt;</p> <p>&lt;date expression&gt; TO &lt;date expression&gt;</p> <p>&lt;date expression&gt;</p>
	cabinet	Characters including ?, *	Cabinet name template, regular expression.
	drawer	Characters including ?, *	Drawer name template, regular expression.
	folder	Characters including ?, *	Folder name template, regular expression.
	document	Characters including ?, *	Document name template, regular expression.
	keyword keyword- <i>n</i>	Characters including ?, *	Selection keywords separated by AND or OR. Multiple lines of keywords may be entered by substituting integer values for - <i>n</i> .
	modified	<p>Date and Time</p> <p>Format for all dates and times is: [m.d.y   m-d-y   m/d/y] [hh:mm:ss]</p> <p>TODAY</p> <p>NOW</p> <p>TOMORROW</p> <p>PREVIOUS <i>n</i></p> <p>Day of the week</p> <p>Month of the year</p>	<p>Select files and documents by their modification time. This may be expressed, as follows:</p> <p>BEFORE &lt;date expression&gt;</p> <p>AFTER &lt;date expression&gt;</p> <p>&lt;date expression&gt; TO &lt;date expression&gt;</p> <p>&lt;date expression&gt;</p>

path	Characters including ?, *	Path name template, regular expression
		continued

Stanza	Keyword	Valid Data	Meaning
Preprocess	capacity capacity- <i>n</i>	Space (nKB,nMB,1GB) Percent (n%) Followed by one or more destination volume keywords to designate the volume(s) in which to apply the limit, or ALL to indicate that limiting capacity should be applied to all destination volumes.	Amount of space to use on the indicated volumes or all volumes.
Process	duplicate	OVERWRITE SKIP (default) ERROR UPDATE	OVERWRITE ( Replace destination with source unconditionally. SKIP (default) ( Skip file and continue, not entering in log. ERROR ( Handle as error. Continuation based on error rules. UPDATE ( Replace destination if source is newer.
	doc_name	NONE COPY (default) MOVE	NONE ( Do not archive name and information. COPY (default) ( Archive the name and information. MOVE ( Archive the name and information, delete the originals.

doc_pages	NONE COPY (default) MOVE	NONE ( Do not archive document pages. COPY (default) ( Archive the document pages. MOVE ( Archive the document pages, delete the originals.
errorlimit n	Integer (default don't stop)	Stop processing if errorcount exceeds limit n.

continued

Stanza	Keyword	Valid Data	Meaning
Post-process	purge	NONE (default) FILES DOCUMENTS KEYWORD	NONE (default) ( Purge nothing. FILES ( Purge source files. DOCUMENTS ( Purge source documents. KEYWORD ( Purge selection keywords from source document.
Log	logname	Any character string (default is local path with filename _ARC<job id>.log)	The log file with fully qualified destination path. If the log doesn't exist it will be created. If it exists, it will be appended.
	header	Any character string (default is nothing)	Header text to precede log information.
	errorlevel	NONE PARTIAL FULL (default)	Log errors to specified level and detail. NONE ( Don't record errors. PARTIAL ( Show only error conditions resulting from the archiving of documents and files. FULL (default) ( Show all error conditions in log.

transferlevel	NONE	Log transfers to specified level and detail.
	BASIC	
	PARTIAL (default)	NONE ( Log no transfer information.
	FULL	BASIC ( Log summary statistics. PARTIAL (default) ( Log names and counts with no expansion. FULL ( Log summary statistics, and expand all names of documents and files.

# Glossary

<b>Archive Utility</b>	The Archive utility (arcutil.exe) contains command line options that enable server administrators to submit archive jobs, delete jobs, change the priority of jobs, and control the contents of the Archive queue.
<b>Cache Utility</b>	The Cache Utility (oicutil.exe) contains command line options that enable server administrators to access and control active cache directories on the server.
<b>Client</b>	A client is a user of a PC application that requests services from the imaging server. Each client can login to the Windows NT Server through the network.
<b>Configuration Utility</b>	The Configuration Utility (oixutil.exe) is an interface that enables server administrators to configure the services, and add cache directories, document databases, and volumes.
<b>Directory</b>	A directory is a grouping of files and subdirectories that are stored on media or a hard disk drive.
<b>Document</b>	A document is the lowest category in the Document Manager hierarchy of cabinet, drawer, folder, and document that is used to organize images.
<b>Image</b>	An image is a visual representation of information. The image data can be typed text, line drawings, photographs, or handwriting. A scanner is used by clients to create images from hard copy, and then store them on either magnetic or optical disks. Images can be displayed through a PC workstation monitor, sent to a printer, or electronically copied to other media.
<b>Imaging Server</b>	An imaging server controls image files, document pages, and binary files stored on magnetic or optical disk. The server takes over some of the processing workload from the client.

<b>Jukebox</b>	An optical disk jukebox is an optical disk storage device that uses an autochanger (robot) to automatically store, retrieve, insert, and remove optical disk cartridges. The jukebox contains internal optical disk drives and slots to store multiple optical disk cartridges.
<b>Local Area Network (LAN)</b>	A LAN is a collection of servers and PC workstations that are connected through network interface controllers, cabling, and other network hardware to share resources across the network.
<b>Optical Volume</b>	An optical volume is logical name given to an optical disk side upon initialization (a volume can span both sides of an optical disk). An optical volume may contain directories, subdirectories, and files. The volume appears as a directory in the server environment.
<b>Path</b>	A path is a drive and directory, including subdirectories where files are stored.
<b>Pathname</b>	A pathname provides the volume, directory, subdirectory, and file location information. For example, <code>finance:/a/b/c</code> .
<b>PC client application</b>	A PC client is an imaging application and is connected physically to the LAN through a network interface card. The client requests services from the server through the TCP/IP network.
<b>Queue Utility</b>	The Queue utility (queutil.exe) contains command line options that enable server administrators to access and control the contents of all the queues, a single queue, a priority chain, or a single queue entry.
<b>Room</b>	The room is the imaging server in which the Document service is running.
<b>SCSI device</b>	A SCSI device is hardware that transmits data according to American National Standards Institute (ANSI) Small Computer Systems Interface (SCSI) standards. The device connects to a SCSI port in the server through a SCSI cable. Some SCSI devices also require a serial port (tty) connection to the server.

<b>Server Utility</b>	The Server Utility (oiutil.exe) is an interface that enables server administrators to monitor and control the services.
<b>Services</b>	The services are server-based systems and facilities that are used by PC client applications. Services names, including File and Document services, have TCP/IP port numbers listed in the services file on the Windows NT Server.
<b>Volume</b>	Volumes are aliases maintained in the vols.dat file that map to drives and directories on the server magnetic disk. The Configuration Utility (oixutil.exe) enables you to list all volumes, add a volume, and remove a volume.
<b>Write Once Read Many (WORM)</b>	WORM refers to the type of optical disk cartridges and optical disk drives that enable information to be written to each location on the optical disk only once. The information can be read many times. WORM technology is useful in maintaining data integrity by eliminating the ability to modify information without detection.

