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EOSDIS Core System Project

Release 6A.03 Storage Management and Data Distribution Subsystems Database Design and Database Schema Specifications for the ECS Project

March 2001

Raytheon Company
Upper Marlboro, Maryland

Release 6A.03 Storage Management and Data Distribution Subsystem Database Design and Database Schema Specifications for the ECS Project

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Preface

This document describes the database design and database schema specifications for the Storage Management (STMGT) Subsystem. It is one of nine documents comprising the detailed database design and database schema specifications for the as-delivered ECS subsystems. A complete list of the eight documents follows:

311-CD-600-001	Release 6A.03 Data Management (DM) Subsystem Database Design and Database Schema Specifications for the ECS Project
311-CD-601-001	Release 6A.03 Ingest Subsystem (INS) Database Design and Database Schema Specifications for the ECS Project
311-CD-602-001	Release 6A.03 Interoperability Subsystem (IOS) Database Design and Database Schema Specifications for the ECS Project
311-CD-603-001	Release 6A.03 Planning and Data Processing Subsystem (PDPS) Database Design and Database Schema Specifications for the ECS Project
311-CD-604-001	Release 6A.03 Science Data Server (SDSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project
311-CD-605-001	Release 6A.03 Storage Management (STMGT) Subsystem Database Design and Database Schema Specifications for the ECS Project
311-CD-606-001	Release 6A.03 Subscription Server (SUBSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project
311-CD-607-001	Release 6A.03 Management Support Subsystem (MSS) Database Design and Database Schema Specifications for the ECS Project
311-CD-608-001	Release 6A.03 Registry Database Design and Database Schema Specifications for the ECS Project

This submittal meets the milestone specified in the Contract Data Requirements List (CDRL) of NASA Contract NAS5-60000. This document is a contract deliverable with an approval code 2. As such, it does not require formal Government acceptance. Contractor approved changes to this document are handled in accordance with change control requirements described in the ECS Project Configuration Management Plan. Changes to this document will be made by document change notice (DCN) or by complete revision.

Entity relationship diagrams (ERDs) presented in this document have been exported directly from software tools and in some cases contain too much detail to be easily readable within hard copy page constraints. The reader is encouraged to view these diagrams in portable document format (PDF) on the ECS Data Handling System (EDHS) world wide web (WWW) site. The universal resource locator (URL) is: http://edhs1.gsfc.nasa.gov.

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Abstract

This document outlines the Release 6A.03 "as-built" database design and database schema specifications for the combined Storage Management (STMGT) and Data Distribution (DDIST) Subsystems. It includes the entity-relationship diagram (ERD), physical database table definitions, and database software which includes listings of triggers and procedures. The ERD describes data entities and the association between these entities used within the STMGT Subsystem. Other information is also included to support database installation and life-cycle maintenance.

Keywords: data**,** database, design, specifications, configuration, installation, parameters, scripts, security, data model, replication, performance tuning, SQL server, Sybase, database security, triggers, procedures, scripts.

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Abbreviations and Acronyms

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1. Introduction

1.1 Identification

This Storage Management (STMGT) Subsystem Database Design and Database Schema Specifications document, Contract Data Requirement List (CDRL) Item Number 050, whose requirements are specified in Data Item Description (DID) 311/DV2, is a required deliverable under the Earth Observing System (EOS) Data and Information System (EOSDIS) Core System (ECS), Contract NAS5-60000.

1.2 Scope

The *STMGT Subsystem Database Design and Database Schema Specifications* document describes the database that supports data requirements for the STMGT and DDIST Subsystems, Release 6A.03.

1.3 Purpose

The purpose of the *STMGT Subsystem Database Design and Database Schema Specifications* document is to support the administrators of the combined STMGT/DDIST Subsystem database throughout its life cycle. Also, this document communicates the database specifications in sufficient detail to support other ongoing installation and operational activities (e.g., configuration management, data administration, system installation and maintenance).

1.4 Audience

The *STMGT Subsystem Database Design and Database Schema Specifications* document is intended to be used and maintained by ECS maintenance and operations staff. The document is organized as follows:

Section 1 provides information regarding the identification, scope, purpose and audience.

Section 2 provides a listing of related documents used to develop this document.

Section 3 contains a design overview of the database design including the entity relationship diagram (ERD) representing the physical data model, the database tables and columns, flat file usage and fields, triggers, and stored procedures.

Section 4 provides a description of performance and tuning features, i.e., indexes, caches for the STMGT Subsystem database implementation.

Section 5 provides the database security high level description of the preliminary security infrastructure including listings of anticipated users, groups, and permissions expected for preliminary operational use.

Section 6 provides listings of the scripts used for database installation, de-installation, backup and recovery, and other miscellaneous administration functions.

2. Related Documents

2.1 Applicable Documents

The following documents, including Internet links, are referenced in this document, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

305-CD-600	Release 6A Segment Design Specification for the ECS Project
920-TDG-009	DAAC Hardware Database Mapping/GSFC
920-TDN-009	DAAC Hardware Database Mapping/NSIDC
920-TDE-009	DAAC Hardware Database Mapping/EDC
920-TDL-009	DAAC Hardware Database Mapping/LARC
920-TDS-009	DAAC Hardware Database Mapping/SMC
920-TDG-010	DAAC Database Configuration/GSFC
920-TDN-010	DAAC Database Configuration/NSIDC
920-TDE-010	DAAC Database Configuration/EDC
920-TDL-010	DAAC Database Configuration/LARC
920-TDS-010	DAAC Database Configuration/SMC
920-TDG-011	DAAC Sybase Log Mapping/GSFC
920-TDN-011	DAAC Sybase Log Mapping/NSIDC
920-TDE-011	DAAC Sybase Log Mapping/EDC
920-TDL-011	DAAC Sybase Log Mapping/LARC
920-TDS-011	DAAC Sybase Log Mapping/SMC
922-TDG-013	Disk Partitions/GSFC
922-TDN-013	Disk Partitions/NSIDC
922-TDE-013	Disk Partitions/EDC
922-TDL-013	Disk Partitions/LARC
922-TDS-013	Disk Partitions/SMC

These documents are maintained as part of the ECS baseline and available on the world wide web at the URL: http://cmdm.east.hitc.com/baseline. Please Note that this is a partial mirror site in that some items are Not available (they are identified) since this is OPEN to all. This site may also be reached through the EDHS homepage. Scroll page to the connections line and click on the ECS Baseline Information System link.

2.2 Information Documents

The following documents, although not directly applicable, amplify or clarify the information presented in this document. These documents are not binding on this document.

313-CD-600	Release 6A Internal ICD for the ECS Project
609-CD-600	Release 6A Operations Tools Manual for the ECS Project
611-CD-600	Release 6A Mission Operation Procedures for the ECS Project

These documents are accessible via the EDHS homepage.

Advanced SQL Server Administration

3. Database Design

3.1 Design Overview

The combined STMGT/DDIST Subsystem database implements a majority of the persistent data requirements for the STMGT and DDIST Subsystems. Other data requirements, as used for system support, are implemented in flat files, see Section 3.2 for descriptions of these flat files. The database is designed to satisfy business rules while maintaining data integrity, consistency, and performance. Database tables are implemented using the Sybase Relational Database Management System (RDBMS) Version. All components of the combined STMGT/DDIST Subsystem database are described in the following sections; information is presented in sufficient detail to support operational needs.

3.1.1 Physical Data Model Entity Relationship Diagram

An entity relationship diagram (ERD) was developed for use as a "roadmap" to the combined STMGT/DDIST Subsystem database. An ERD is a schematic of the physical data structure that illustrates the dependencies and relationships between database entities, i.e., tables. On ERDs, database entities are represented by rectangles and arrows as shown by the key in Figure 3-1 represent relationships. Details on the syntax used by the *Power Designor Data Architect* Computer Aided Software Engineering (CASE) tool may be found in the *Powersoft: Power Designor for PowerBuilder* Reference Guide. The ERD presented in Appendix A for the STMGT Subsystem database was produced using the *Power Designor* tool.

The ECS Conceptual Model for the Science Data Processing Segment (SDPS) was developed using an Object Oriented (OO) CASE tool. However; since Sybase implements a RDBMS with an Object wrapper, the syntax (model Notation) is converted from OO to relational and the terminology changes-the "attribute" becomes "column" and "class" becomes "table." Since the specifications of some entities in this document are transferred from the OO Conceptual Model repository, there are many cases where the OO terminology is retained as, for example, in the table and column names and definitions.

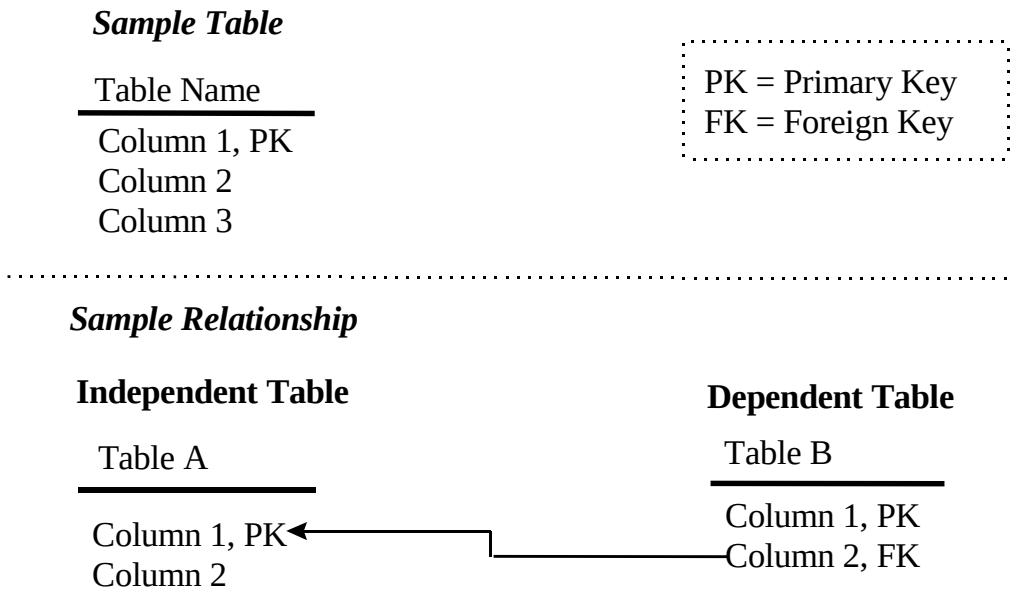

Figure 3-1. ERD Key

3.1.2 Database Table Specifications

Table 3-1 contains a listing of all the database tables within the combined STMGT/DDIST Subsystem databases. This list is presented in alphabetical order corresponding to the database tables illustrated in the ERD (reference Figure 3-2). The database tables listed immediately following Table 3-1 is presented in the same order as the table.

Table 3-1. Database Tables (1 of 3)

Table Name	Logical Grouping
DsDdFile	Data Distribution
DsDdGranule	Data Distribution
DsDdParameterList	Data Distribution
DsDdPriorityThread	Data Distribution
DsDdRequest	Data Distribution
DsDdServerGeneric	Data Distribution
DsStArchiveFileRequest	Archive Services
DsStArchiveRequest	Request Handling
DsStArchiveServer	Server Configuration
DsStBackup	Archive Services

Table 3-1. Database Tables (2 of 3)

Table Name	Logical Grouping
DsStBackupHistory	Archive Services
DsStCache	Server Configuration
DsStCacheFile	Cache Management
DsStCacheManagerRequest	Request Handling
DsStCancelledRequest	Request Handling
DsStCDROMServer	Server Configuration
DsStCompressionStats	Archive Services
DsStConfigParameter	Server Configuration
DsStDeleteLogCacheFile	Cache Management
DsStDependentRequest	Request Handling
DsStDevice	Media Operations
DsStErrorAttribute	Request Handling
DsStErrorText	Request Handling
DsStEventLog	Request Handling
DsStFile	Archive Services
DsStFileLien	Cache Management
DsStFileLink	Cache Management
DsStFtpRequest	FTP Services
DsStFtpServer	Server Configuration
DsStGenericRequest	Request Handling
DsStManagedCacheDir	Cache Management
DsStMedia	Media Operations
DsStMediaRequest	Request Handling
DsStMediaServer	Server Configuration
DsStMediaServerContacted	Media Operations
DsStMediaSet	Media Operations
DsStNotification	Cache Management
DsStPendingDelete	Archive Services
DsStPendingReservations	Cache Management
DsStPreconfiguredDevice	Media Operations
DsStPreconfiguredStacker	Media Operations
DsStPrintRequest	Request Handling
DsStRequestMedia	Request Operations
DsStSDLock	Staging Disk Operations
DsStServerType	Server Configuration
DsStServiceThreadConfig	Server Configuration
DsStSlot	Media Operations
DsStStacker	Media Operations
DsStStagingDisk	Staging Disk Operations

Table 3-1. Database Tables (3 of 3)

Table Name	Logical Grouping
DsStStagingDiskFile	Staging Disk Operations
DsStStagingDiskLien	Staging Disk Operations
DsStStagingDiskRequest	Staging Disk Operations
DsStStagingDiskServer	Staging Disk Operations
DsStTempGR	Temporary Table for GRCleanup
DsStVolumeGroup	Archive Services
EcDbDatabaseVersions	Database Versioning Information

The following report is produced by the Power Designor CASE tool and edited for format consistency. The report provides specifications on the STMGT Subsystem database tables. The report is sorted in alphabetical order by table name. Specifications include the table name, a brief description of the table, and the columns comprising the table. The column information includes the column name and the column attributes, i.e., type (format of the data stored within the database), primary key indicator(s), and a mandatory indicator for determining if the column must contain data when the row exists. In some cases the content of the column specification "Type" will reference a domain value (refer to Section 3.1.4 for more information on the domain values).

Table 3-2 holds the distribution files currently being maintained and processed by the EcDsDistributionServer. Table abbreviation is "F" to be used as standard naming convention for stored procedures.

Table 3-2. DsDdFile

Name	Code	Type	P	M
ArchiveId	ARCHIVEID	path	No	No
BackupId	BACKUPID	path	No	No
CheckSum	CHECKSUM	checksum	No	No
DistName	DISTNAME	file	No	No
EstFileSize	ESTFILESIZE	sizeddist	No	No
FileSize	FILESIZE	sizeddist	No	No
GranuleId	GRANULEID	granuleid	Yes	Yes
OffsiteId	OFFSITEID	path	No	No
RequestId	REQUESTID	requestid	Yes	Yes
SourceName	SOURCENAME	source	Yes	Yes
SourcePath	SOURCEPATH	path	No	No
StageDiskSize	STAGEDISKSIZE	sizeddist	No	No

Table 3-3 holds the distribution granules currently being maintained and processed by the EcDsDistributionServer. The table abbreviation is "G" to be used as standard naming convention for stored procedures.

Table 3-3. DsDdGranule

Name	Code	Type	P	M
Compressability	COMPRESSABILITY	compression	No	No
EsdtType	ESDTTYPE	esdttype	No	No
EstGranuleSize	ESTGRANULESIZE	sizeddist	No	No
GranuleId	GRANULEID	granuleid	Yes	Yes
GranuleSize	GRANULESIZE	sizeddist	No	No
NrGranFiles	NRGRANFILES	largecount	No	No
RequestId	REQUESTID	requestid	Yes	Yes
StageDiskSize	STAGEDISKSIZE	sizeddist	No	No

Table 3-4 holds the GLParameter list for each request currently being maintained and processed by the EcDsDistributionServer. This data is provided from external metadata (MCF) by SDSRV. Request information is initiated here first. The table's abbreviation is "PL" to be used as standard naming convention for stored procedures.

Table 3-4. DsDdParameterList

Name	Code	Type	P	M
FtpHost	FTPHOST	Node	No	No
FtpPassword	FTPPASSWORD	password	No	No
FtpPullExp	FTPPULLEXP	<None>	No	No
FtpPullHost	FTPPULLHOST	path	No	No
FtpPushDest	FTPPUSHDEST	path	No	No
FtpUser	FTPUSER	username	No	No
MediaFormat	MEDIAFORMAT	mediumtype	No	Yes
MediaType	MEDIATYPE	mediumtype	No	Yes
Notify	NOTIFY	Notify	No	No
NotifyType	NOTIFYTYPE	Notify	No	No
RequestId	REQUESTID	requestid	Yes	Yes
Site	SITE	site	No	No
UserProfile	USERPROFILE	profile	No	No
UserString	USERSTRING	userstring	No	No

Table 3-5 holds the threshold for the number of threads that can be active for each request. The table's abbreviation is "PT" to be used as standard naming convention for stored procedures.

Table 3-5. DsDdPriorityThread

Name	Code	Type	P	M
ThreadLimit	THREADLIMIT	<None>	No	Yes
ThreadName	THREADNAME	thread	Yes	Yes

Table 3-6 holds the distribution requests currently being maintained and processed by the EcDsDistributionServer. This table's abbreviation is "R" to be used as standard naming convention for stored procedures.

Table 3-6. DsDdRequest

Name	Code	Type	P	M
AuxState	AUXSTATE	varchar(255)	No	No
CallBackFunction	CALLBACKFUNCTION	nvarchar(50)	No	No
CurrDdistStageDisk	CURRDDISTSTAGEDISK	nvarchar(255)	No	No
EcsUserId	ECSUSERID	username	No	No
EndTime	ENDTIME	reqtime	No	No
EsdtType	ESDTTYPE	esdttype	No	No
LastSuccMediaNr	LASTSUCCMEDIANR	largecount	No	No
LastSuccStageNr	LASTSUCCSTAGENR	largecount	No	No
MediaBlockSize	MEDIABLOCKSIZE	float	No	No
MediaCapacity	MEDIACAPACITY	float	No	No
NrGranules	NRGRANULES	largecount	No	No
NrMedia	NRMEDIA	largecount	No	No
NrReqFiles	NRREQFILES	largecount	No	No
OrderId	ORDERID	orderid	No	No
OrderedState	ORDEREDSTATE	state	No	No
Priority	PRIORITY	priority	No	No
RequestId	REQUESTID	requestid	Yes	Yes
RPCId	RPCID	rpcid	No	No
SDSRVStageArea	SDSRVSTAGEAREA	path	No	No
SizeInMB	SIZEINMB	float	No	No
StartTime	STARTTIME	reqtime	No	No
State	STATE	state	No	No
Status	STATUS	status	No	No
WarmStartCounter	WARMSTARTCOUNTER	int	No	No

Table 3-7 holds generic configuration settings for the EcDsDistributionServer.

Table 3-7. DsDdServerGeneric

Name	Code	Type	P	M
GenericName	GENERICNAME	genericname	Yes	Yes
GenericValue	GENERICVALUE	genericvalue	No	Yes

Table 3-8 stores file level information associated with store and retrieve requests. Abbreviated table name "AFR" for consistency of stored procedure naming.

Table 3-8. DsStArchiveFileRequest

Name	Code	Type	P	M
FileIndex	FILEINDEX	fileindex	No	Yes
OriginalRPCId	ORIGINALRPCID	rpcid	No	Yes
RPCId	RPCID	rpcid	Yes	Yes

Table 3-9 contains information for Archive specific Requests. Subsequently, when additional servers' requests are handled, the appropriate server's request table will be created. Abbreviated table name "AR" for consistency of stored procedure naming.

Table 3-9. DsStArchiveRequest

Name	Code	Type	P	M
CompressionType	CompressionType	compression	No	No
CurrentFileIndex	CurrentFileIndex	fileindex	No	Yes
NumFiles	NumFiles	largecount	No	No
ArchiveId	ARCHIVEID	backup	No	No
BackupId	BACKUPID	backup	No	No
RPCId	RPCID	rpcid	Yes	Yes
OffsiteId	OFFSITE	offsite	No	No

Table 3-10 contains the configuration parameters for archive server. Abbreviated table name "AS" for consistency of stored procedure naming.

Table 3-10. DsStArchiveServer

Name	Code	Type	P	M
IsRetrieveCksumEnabled	ISRETRIEVECKSUMENABLED	boolean	No	No
IsStoreCksumEnabled	ISSTORECKSUMENABLED	boolean	No	No
ServerId	SERVERID	serverid	Yes	Yes

Table 3-11 looks to the outside world to backup to for Archive. Abbreviated table name "B" for consistency of stored procedure naming.

Table 3-11. DsStBackup

Name	Code	Type	P	M
ArchiveId	ARCHIVEID	Backup	No	Yes
BackupId	BACKUPID	Backup	No	No
BackupTransferStage	BACKUPTRANSFERSTAGE	stage	No	No
BackupTransferStatus	BACKUPTRANSFERSTATUS	stage	No	No
CompressionType	COMPRESSIONTYPE	compression	No	No
CreateDate	CREATEDATE	Datetime	No	No
EndDate	ENDDATE	Datetime	No	No
FileName	FILENAME	File	Yes	Yes
OffsiteId	OFFSITEID	offsite	No	No
OffsiteTransferStage	OFFSITETRANSFERSTAGE	stage	No	No
OffsiteTransferStatus	OFFSITETRANSFERSTATUS	stage	No	No
OriginalFileName	ORIGINALFILENAME	File	No	No
Priority	PRIORITY	priority	No	No
StartDate	STARTDATE	Datetime	No	No
StillStoring	STILLSTORING	boolean	No	No

Table 3-12 contains a historical record of all (Archive related) backup activity. Abbreviated table name "BH" for consistency of stored procedure naming.

Table 3-12. DsStBackupHistory (1 of 2)

Name	Code	Type	P	M
ArchiveId	ARCHIVEID	backup	No	Yes
BackupId	BACKUPID	backup	No	No
BackupTransferStage	BACKUPTRANSFERSTAGE	stage	No	No
BackupTransferStatus	BACKUPTRANSFERSTATUS	stage	No	No
CompressionType	COMPRESSIONTYPE	compression	No	No

Table 3-12. DsStBackupHistory (2 of 2)

Name	Code	Type	P	M
CreateDate	CREATEDATE	datetime	No	No
DeleteDate	DELETEDATE	datetime	No	No
EndDate	ENDDATE	datetime	No	No
FileName	FILENAME	file	Yes	Yes
OffsiteId	OFFSITEID	offsite	No	No
OffsiteTransferStage	OFFSITETRANSFERSTAGE	stage	No	No
OffsiteTransferStatus	OFFSITETRANSFERSTATUS	stage	No	No
OriginalFileName	ORIGINALFILENAME	file	No	No
Priority	PRIORITY	priority	No	No
StartDate	STARTDATE	datetime	No	No
StillStoring	STILLSTORING	boolean	No	No

Table 3-13 contains configurable parameters for CDROM Server.

Table 3-13. DsStCDROMServer

Name	Code	Type	P	M
BufferNumber	BUFFERNUMBER	size	No	No
BufferSize	BUFFERSIZE	size	No	No
Format	FORMAT	format	No	No
RecorderSpeed	RECORDERSPEED	speed	No	No
ServerId	SERVERID	serverid	Yes	Yes

Table 3-14 identifies every instance of a cache related to Pull Monitor Cache Management. Abbreviated table name "C" for consistency of stored procedure naming.

Table 3-14. DsStCache (1 of 2)

Name	Code	Type	P	M
CacheId	CACHEID	integer	Yes	Yes
AvailableCacheSpace	AVAILABLECACHESPACE	cachespace	No	Yes
CacheBlockSize	CACHEBLOCKSIZE	blocksize	No	No
ConfirmDelete	CONFIRMDELETE	status	No	No
Description	DESCRIPTION	description	No	Yes
ExpirationThreshold	EXPIRATIONTHRESHOLD	size	No	Yes
HighWaterMark	HIGHWATERMARK	watermark	No	No
LowWaterMark	LOWWATERMARK	watermark	No	No

Table 3-14. DsStCache (2 of 2)

Name	Code	Type	P	M
ManagedDirectoryArea	MANAGEDDIRECTORYAREA	path	No	No
RootPath	ROOTPATH	path	No	Yes
ServerId	SERVERID	serverid	No	Yes
TotalCacheSpace	TOTALCACHESPACE	cachespace	No	Yes

Table 3-15 contains an entry for each file that the Storage Management is currently processing (pull-list). An entry is inserted into the entity for each file retrieved from the archive (AMASS). DsStFileLocation (pull-link) will track the individual cache locations of the file. Abbreviated table name "CF" for consistency of stored procedure naming.

Table 3-15. DsStCacheFile

Name	Code	Type	P	M
AlwaysInCache	ALWAYSINCACHE	flag	No	No
CacheId	CACHEID	identityid	Yes	Yes
DeleteFlag	DELETEFLAG	flag	No	Yes
FileName	FILENAME	file	Yes	Yes
FileSize	FILESIZE	size	No	Yes
LastAccessed	LASTACCESSED	datetime	No	No
State	STATE	cachestate	No	No
UncompressedFileSize	UNCOMPRESSEDFILESIZE	size	No	No

Table 3-16 contains requests to be serviced by the Cache Manager Server. Abbreviated table name "CMR" for consistency of stored procedure naming.

Table 3-16. DsStCacheManagerRequest (1 of 2)

Name	Code	Type	P	M
CheckSum	CHECKSUM	checksum	No	No
CheckSumFlag	CHECKSUMFLAG	boolean	No	No
CompressionType	COMPRESSIONTYPE	compression	No	No
DirectoryName	DIRECTORYNAME	file	No	No
ExternalRequestId	EXTERNALREQUESTID	requestid	No	No
FileSize	FILESIZE	size	No	No
NoWaitFlag	NOWAITFLAG	boolean	No	No
RPCId	RPCID	rpcid	Yes	Yes
RestartMode	RESTARTMODE	size	No	No

Table 3-16. DsStCacheManagerRequest (2 of 2)

Name	Code	Type	P	M
Size	SIZE	size	No	No
SourceFileName	SOURCEFILENAME	file	No	No
SourceLocation	SOURCELOCATION	path	No	No
SourceServerId	SOURCESERVERID	serverid	No	No
TargetFileName	TARGETFILENAME	file	No	No
TargetPath	TARGETPATH	path	No	No
Username	USERNAME	username	No	No

Table 3-17 contains information on requests that have been cancelled. Abbreviated table name "CR" for consistency of stored procedure naming.

Table 3-17. DsStCancelledRequest

Name	Code	Type	P	M
ErrorCode	ERRORCODE	errorcode	No	No
ProcessedFlag	PROCESSEDFLAG	boolean	No	No
RPCId	RPCID	rpcid	Yes	Yes

Table 3-18 Abbreviated table name "CS" for consistency of stored procedure naming.

Table 3-18. DsStCompressionStats

Name	Code	Type	P	M
CompressionFactor	COMPRESSIONFACTOR	<None>	No	No
CompressionId	COMPRESSIONID	identityid	Yes	Yes
CompressionMean	COMPRESSIONMEAN	<None>	No	No
CompressionType	COMPRESSIONTYPE	compressiontype	No	Yes
Confidence80	CONFIDENCE80	<None>	No	No
Confidence85	CONFIDENCE85	<None>	No	No
Confidence90	CONFIDENCE90	<None>	No	No
Confidence95	CONFIDENCE95	<None>	No	No
Confidence99	CONFIDENCE99	<None>	No	No
NumFiles	NUMFILES	size	No	No
VolumeGroupId	VOLUMEGROUPID	identityid	No	Yes

Table 3-19 contains an entry for information necessary to initialize each DsStServerType supported by Storage Management. The data will consist of information currently available in the configuration files plus information as it pertains to the status and Node of each server. An entry is inserted for each parameter that a server uses. Abbreviated table name "CP" for consistency of stored procedure naming.

Table 3-19. DsStConfigParameter

Name	Code	Type	P	M
FileIOBlockSize	FILEIOBLOCKSIZE	blocksize	No	Yes
HWCI	HWCI	hwci	No	No
HostName	HOSTNAME	host	No	No
PortNumber	PORTNUMBER	size	No	No
RPCSubTag	RPCSUBTAG	rpcsubtag	No	No
Retries	RETRIES	smallcount	No	No
ServerId	SERVERID	serverid	Yes	Yes
ServerName	SERVERNAME	servername	No	Yes
ServerType	SERVERTYPE	nvarchar(20)	No	Yes
Sleeptime	SLEEPTIME	smallint	No	No

Table 3-20 contains an entry for each file that Storage Management deletes from its cache or the DsStCacheFile table. This entity is used for maintaining a history of file and cache usage for reporting and analysis purposes. An entry is inserted into the entity via a delete trigger on the DsStCacheFile table. Abbreviated table name "DL" for consistency of stored procedure naming

Table 3-20. DsStDeleteLogCacheFile

Name	Code	Type	P	M
AlwaysInCache	ALWAYSINCACHE	flag	No	No
CacheId	CACHEID	identityid	No	No
DeleteDate	DELETEDATE	datetime	No	Yes
Expiration	EXPIRATION	datetime	No	No
FileName	FILENAME	file	No	Yes
FileSize	FILESIZE	size	No	No
LastAccessed	LASTACCESSED	datetime	No	No
State	STATE	cachestate	No	No
UncompressedFileSize	UNCOMPRESSEDFILESIZE	size	No	No

Table 3-21 indicates requests whose presumption is predicated on the completion of active requests. Abbreviated table name "DR" for consistency of stored procedure naming.

Table 3-21. DsStDependentRequest

Name	Code	Type	P	M
ActiveRPCId	ACTIVERPCID	rpcid	No	Yes
DependReqId	DEPENDREQID	identityid	Yes	Yes
RPCId	RPCID	rpcid	No	Yes

Table 3-22 contains an entry for each peripheral device that Storage Management uses to service requests to Ingest or Distribution data. A Server Type's DsStConfigParameter record is associated with each piece of hardware for configuration parameters required to operate the Device/Resource. Abbreviated table name "D" for consistency of stored procedures naming.

Table 3-22. DsStDevice

Name	Code	Type	P	M
ControllerId	CONTROLLERID	size	No	No
CurrentOperation	CURRENTOPERATION	operation	No	No
Description	DESCRIPTION	description	No	No
DeviceName	DEVICENAME	device	Yes	Yes
DriveNumber	DRIVENUMBER	drive	No	No
ElementNo	ELEMENTNO	element	No	No
IsDriveAllocated	ISDRIVEALLOCATED	boolean	No	No
IsDriveOnline	ISDRIVEONLINE	boolean	No	No
IsMedianInDrive	ISMEDIANINDRIVE	boolean	No	No
MediaId	MEDIAID	barcode	No	No
Model	MODEL	model	No	No
Node	NODE	Node	No	No
OperationStatus	OPERATIONSTATUS	operation	No	No
PathName	PATHNAME	path	No	No
SCSIId	SCSIID	size	No	No
ServerId	SERVERID	serverid	No	Yes
StackerId	STACKERID	resource	No	No

Table 3-23 is required for all clients that wish to use the DsStErrorDetails class. Provides a mapping between character mnemonics and numeric error codes. It also defines the attributes for each error, providing adequate characterization for clients to infer appropriate retry/recovery procedures from the error attributes. Abbreviated table name "EA" for consistency of stored procedure naming.

Table 3-23. DsStErrorAttribute

Name	Code	Type	P	M
ErrorCode	ERRORCODE	errorcode	Yes	Yes
Scope	SCOPE	scope	No	No
Severity	SEVERITY	severity	No	No

Table 3-24 provides text descriptions and suggested recovery actions for each error code; presents errors in a meaningful manner. Abbreviated table name "ET" for consistency of stored procedure naming.

Table 3-24. DsStErrorText

Name	Code	Type	P	M
Description	DESCRIPTION	Description	No	No
ErrorCode	ERRORCODE	Errorcode	Yes	Yes
Mnemonic	MNEMONIC	mnemonic	No	Yes
Suggestion	SUGGESTION	description	No	No

Table 3-25 contains a history of STMGT Subsystem events and COTS errors encountered by Storage Management. The STMGT Subsystem software will insert records into the table using the DsStELInsert.sp stored procedure. The calling sequence is DsStELInsert @EventNumber= value,@ EventMessage= value,@ EventDate= value,@ EventType= value.

Events and errors included in the entity are: Errors received from AMASS, Sybase, and other COTS software; Checksum errors received during archive monitoring; Operator Notification levels for Cache Management; Device errors; Other errors generated by the Storage Management Software.

The Storage Management software will insert a new ERROR_LOG entry each time an event occurs or an error is encountered. The operator will have the ability to purge this entity periodically based on a date/time value.

Abbreviated table name "EL" for consistency of stored procedure naming.

Table 3-25. DsStEventLog

Name	Code	Type	P	M
EventDate	EVENTDATE	datetime	No	Yes
EventLevel	EVENTLEVEL	eventlevel	No	No
EventLogId	EVENTLOGID	id	Yes	Yes
EventMessage	EVENTMESSAGE	description	No	Yes
EventNumber	EVENTNUMBER	errorcode	No	No
EventType	EVENTTYPE	eventtype	No	Yes
RPCID	RPCID	rpcid	No	No

Table 3-26 contains an entry for each file that Storage Management is currently processing related to a DsStArchiveRequest entry. Abbreviated table name "F" for consistency of stored procedure naming.

Table 3-26. DsStFile

Name	Code	Type	P	M
CheckPointState	CHECKPOINTSTATE	status	No	No
Checksum	CHECKSUM	checksum	No	No
DiskTag	DISKTAG	disktag	No	No
EventMessage	EVENTMESSAGE	description	No	No
FileIndex	FILEINDEX	fileindex	Yes	Yes
FileLocation	FILELOCATION	path	No	No
FileName	FILENAME	file	No	No
FileSize	FILESIZE	size	No	No
LastArchiveVolumeGroup	LASTARCHIVEVOLUMEGROUP	identityid	No	No
LastBackupVolumeGroup	LASTBACKUPVOLUMEGROUP	identityid	No	No
LastOffsiteVolumeGroup	LASTOFFSITEVOLUMEGROUP	identityid	No	No
OriginalFileName	ORIGINALFILENAME	file	No	No
RPCId	RPCID	rpcid	Yes	Yes
RetrievedFileSize	RETRIEVEDFILESIZE	size	No	No
ServerId	SERVERID	serverid	No	No
Source	SOURCE	sourcesize	No	No
SourcePosition	SOURCEPOSITION	size	No	No
VolumeGroupSource	VOLUMEGROUPSOURCE	tablename	No	No

Table 3-27 Notes the client’s expressed intent to link or copy files into cache. Abbreviated table name "F2" for consistency of stored procedure naming.

Table 3-27. DsStFileLien

Name	Code	Type	P	M
CacheId	CACHEID	identityid	No	Yes
Expiration	EXPIRATION	datetime	No	No
FileLienId	FILELIENID	identityid	Yes	Yes
FileName	FILENAME	file	No	Yes
LienHolder	LIENHOLDER	name	No	Yes

Table 3-28 tracks links associated with files in cache and their associated expiration date. Abbreviated table name "FL" for consistency of stored procedure naming.

Table 3-28. DsStFileLink

Name	Code	Type	P	M
CacheId	CACHEID	identityid	No	Yes
DirectoryId	DIRECTORYID	identitylg	Yes	No
Expiration	EXPIRATION	datetime	No	No
FileName	FILENAME	file	No	Yes
LinkName	LINKNAME	name	Yes	Yes

Table 3-29 contains information for Ftp specific Requests. Subsequently, when additional servers' requests are handled, the appropriate server's request table will be created. Abbreviated table name "FR" for consistency of stored procedure naming.

Table 3-29. DsStFtpRequest

Name	Code	Type	P	M
DestinationPath	DESTINATIONPATH	path	No	No
EncryptedPassword	ENCRYPTEDPASSWORD	password	No	No
Expiration	EXPIRATION	datetime	No	No
ExternalRequestId	EXTERNALREQUESTID	requestid	No	No
FileName	FILENAME	file	No	No
FileSize	FILESIZE	size	No	No
Host	HOST	host	No	No
LoopIndex	LOOPINDEX	size	No	No
PullHost	PULLHOST	host	No	No
PullServerId	PULLSERVERID	serverid	No	No
RPCId	RPCID	rpcid	Yes	Yes
RequestDirectoryId	REQUESTDIRECTORYID	identitylg	No	No
SourcePath	SOURCEPATH	path	No	No
Username	USERNAME	username	No	No

Table 3-30 contains the FTP Server Configuration Parameters. Abbreviated table name "F" for consistency of stored procedure naming.

Table 3-30. DsStFtpServer

Name	Code	Type	P	M
Datalist	DATALIST	path	No	No
MaxRequestSize	MAXREQUESTSIZE	size	No	No
ServerId	SERVERID	serverid	Yes	Yes

Table 3-31 contains common information related to all Storage Management requests regardless of type. Abbreviated table name "GR" for consistency of stored procedure naming.

Table 3-31. DsStGenericRequest

Name	Code	Type	P	M
CheckPointState	CHECKPOINTSTATE	status	No	No
CreationTime	CREATIONTIME	datetime	No	No
ErrorCode	ERRORCODE	errorcode	No	Yes
LastUpdated	LASTUPDATED	datetime	No	No
Priority	PRIORITY	priority	No	No
ProcessingState	PROCESSINGSTATE	process	No	No
ProgressPartial	PROGRESSPARTIAL	size	No	No
ProgressTotal	PROGRESSTOTAL	size	No	No
ProgressUnits	PROGRESSUNITS	thread	No	No
RPCId	RPCID	rpcid	Yes	Yes
ReqMgrNotified	REQMGRNOTIFIED	boolean	No	Yes
ServerId	SERVERID	serverid	No	No
Submitter	SUBMITTER	name	No	No
ThreadId	THREADID	size	No	No
TypeOperation	TYPEOPERATION	operation	No	No

Table 3-32 maintains information regarding user request directory in the pullarea. Abbreviated table name “MCD“ for consistency of stored procedure naming.

Table 3-32. DsStManagedCacheDir

Name	Code	Type	P	M
CacheId	CACHEID	identityid	No	Yes
DirectoryId	DIRECTORYID	identitylg	Yes	Yes
DirectoryName	DIRECTORYNAME	file	No	Yes
Expiration	EXPIRATION	datetime	No	No
OwnerName	OWNERNAME	name	No	Yes
UsedFlag	USEDFLAG	boolean	No	Yes

Table 3-33 contains individual pieces of media and their associated status. Abbreviated table name "M" for consistency of stored procedure naming.

Table 3-33. DsStMedia

Name	Code	Type	P	M
CompletedLocation	COMPLETEDLOCATION	description	No	No
MediaCapacity	MEDIACAPACITY	size	No	No
MediaId	MEDIAID	barcode	Yes	Yes
MediaStatus	MEDIASTATUS	status	No	No
MediaUse	MEDIAUSE	status	No	No
ServerType	SERVERTYPE	servertype	No	No

Table 3-34 tracks the requests associated with media operations. Abbreviated table name "MR" for consistency of stored procedure naming.

Table 3-34. DsStMediaRequest

Name	Code	Type	P	M
DeviceName	DEVICENAME	resource	No	No
DistributionEstSize	DISTRIBUTIONESTSIZE	size	No	No
ExternalRequestId	EXTERNALREQUESTID	requestid	No	No
FileList	FILELIST	tablename	No	No
Format	FORMAT	format	No	No
LastOperation	LASTOPERATION	operation	No	No
MediaId	MEDIAID	barcode	No	No
MediaStagingDisk	MEDIASTAGINGDISK	disktag	No	No
RPCId	RPCID	rpcid	Yes	Yes
SlotId	SLOTID	slotid	No	No
SourceStagingDisk	SOURCESTAGINGDISK	disktag	No	No
StackerId	STACKERID	resource	No	No
WorkingDirectory	WORKINGDIRECTORY	source	No	No

Table 3-35 contains configurable parameters for each media server. Abbreviated table name "MS" for consistency of stored procedure naming.

Table 3-35. DsStMediaServer

Name	Code	Type	P	M
Capacity	CAPACITY	size	No	No
DefaultBlockFactor	DEFAULTBLOCKFACTOR	defaultblockfactor	No	No
MediaBlockSize	MEDIABLOCKSIZE	blocksize	No	No
NetworkDistribution	NETWORKDISTRIBUTION	boolean	No	No
NumColumns	NUMCOLUMNS	smallcount	No	No
NumRows	NUMROWS	smallcount	No	No
PrintQue	PRINTQUE	file	No	No
ServerId	SERVERID	serverid	Yes	Yes

Table 3-36 correlates with media servers that have made an attempt to service a given request. Abbreviated table name "MSC" for consistency of stored procedure naming.

Table 3-36. DsStMediaServerContacted

Name	Code	Type	P	M
ErrorCode	ERRORCODE	errorcode	No	Yes
RPCId	RPCID	rpcid	Yes	Yes
ServerId	SERVERID	serverid	No	Yes

Table 3-37 contains the logical aggregation of media objects. Abbreviated table name "MS" for consistency of stored procedure naming.

Table 3-37. DsStMediaSet

Name	Code	Type	P	M
MediaId	MEDIAID	barcode	Yes	Yes
MediaSetId	MEDIASETID	name	Yes	Yes

Tables 3-38 frequently conduct polls to check for user pulled files from the pullarea. Abbreviated table name "SN" for consistency of stored procedure naming.

Table 3-38. DsStNotification

Name	Code	Type	P	M
CacheId	CACHEID	identityid	Yes	Yes
Datalist	DATALIST	path	No	No
PollingFrequency	POLLINGFREQUENCY	time	No	No

Table 3-39 is used for batch deletion of files from the archive. Abbreviated table name "PD" for consistency of stored procedure naming.

Table 3-39. DsStPendingDelete

Name	Code	Type	P	M
CreationTime	CREATIONTIME	datetime	No	No
ErrorCode	ERRORCODE	errorcode	No	No
FileName	FILENAME	file	Yes	Yes
InsertTime	INSERTTIME	datetime	No	No
ServerId	SERVERID	serverid	No	No
Stage	STAGE	stage	No	No
Status	STATUS	status	No	No
VersionedDataType	VERSIONEDDATATYPE	datatype	Yes	Yes
VolumeGroupId	VOLUMEGROUPID	identityid	No	No

Table 3-40 Abbreviated table name "PR" for consistency of stored procedure naming.

Table 3-40. DsStPendingReservations

Name	Code	Type	P	M
CacheId	CACHEID	identityid	No	Yes
FileName	FILENAME	file	No	Yes
FileSize	FILESIZE	size	No	Yes
OwnerName	OWNERNAME	name	No	Yes
PendingId	PENDINGID	identityid	Yes	Yes
RPCId	RPCID	rpcid	No	Yes

Table 3-41 contains the list of standard configuration settings available from pulldown menu Abbreviated table name "F" for consistency of stored procedure naming.

Table 3-41. DsStPreConfiguredDevice (1 of 2)

Name	Code	Type	P	M
ControllerId	CONTROLLERID	size	No	No
CurrentOperation	CURRENTOPERATION	status	No	No
Description	DESCRIPTION	description	No	No
DriveNumber	DRIVENUMBER	drivenumber	No	No
ElementNo	ELEMENTNO	elementNo	No	No
IsDriveAllocated	ISDRIVEALLOCATED	boolean	No	No

Table 3-41. DsStPreConfiguredDevice (2 of 2)

Name	Code	Type	P	M
IsDriveOnline	ISDRIVEONLINE	boolean	No	No
IsMediaInDrive	ISMEDIAINDRIVE	boolean	No	No
Model	MODEL	model	Yes	Yes
Node	NODE	Node	No	No
OperationStatus	OPERATIONSTATUS	status	No	No
PathName	PATHNAME	path	No	No
SCSIId	SCSIID	size	No	No
ServerType	SERVERTYPE	servertype	No	No

Table 3-42 contains the list of standard stacker configuration settings available from Pulldown menu Abbreviated table name "PCS" for consistency of stored procedure naming.

Table 3-42. DsStPreConfiguredStacker

Name	Code	Type	P	M
Barcode	BARCODE	boolean	No	No
Description	DESCRIPTION	description	No	No
ElementNo	ELEMENTNO	elementNo	No	No
FixedSlot	FIXEDSLOT	slotnumber	No	No
MediumType	MEDIUMTYPE	mediumtype	No	Yes
OnlineDrives	ONLINEDRIVES	smallcount	No	Yes
OnlineSlots	ONLINESLOTS	smallcount	No	Yes
ServerType	SERVERTYPE	servertype	No	No
StackerModel	STACKERMODEL	model	Yes	Yes
StackerNumber	STACKERNUMBER	stackernumber	No	No
StackerPath	STACKERPATH	path	No	No
StackerStatus	STACKERSTATUS	status	No	Yes
TotalDrives	TOTALDRIVES	smallcount	No	Yes
TotalRoSlots	TOTALROSLOTS	smallcount	No	Yes
TotalRwSlots	TOTALRWSLOTS	smallcount	No	Yes
TotalSlots	TOTALSLOTS	smallcount	No	Yes

Table 3-43 holds the requests to print packing list for media distribution Abbreviated table name "F" for consistency of stored procedure naming.

Table 3-43. DsStPrintRequest

Name	Code	Type	P	M
ExternalRequestId	EXTERNALREQUESTID	requestid	No	No
PrintFileName	PRINTFILENAME	file	No	No
PrintUser	PRINTUSER	username	No	No
PrinterSource	PRINTERSOURCE	disktag	No	No
RPCId	RPCID	rpcid	Yes	Yes

Table 3-44 maps media distribution requests to media used to fulfill requests. Abbreviated table name "RM" for consistency of stored procedure naming.

Table 3-44. DsStRequestMedia

Name	Code	Type	P	M
CreateDate	CREATEDATE	datetime	No	No
MediaId	MEDIAID	barcode	Yes	Yes
MediaNumber	MEDIANUMBER	size	No	Yes
RequestId	REQUESTID	requestid	Yes	Yes

Table 3-45 provides. Abbreviated table name "SD" for consistency of stored procedure naming.

Table 3-45. DsStSDLock

Name	Code	Type	P	M
LockValue	LOCKVALUE	int	No	No

Table 3-46 provides a description and type of server. Abbreviated table name "ST" for consistency of stored procedure naming.

Table 3-46. DsStServerType

Name	Code	Type	P	M
DefaultRPCTag	DEFAULTRPCTAG	rpcsubtag	No	No
MaxReroutes	MAXREROUTES	length	No	No
ServerDescription	SERVERDESCRIPTION	description	No	No
ServerType	SERVERTYPE	servertype	Yes	Yes

Table 3-47 describes the disposition of server threads. Abbreviated table name "STC" for consistency of stored procedure naming.

Table 3-47. DsStServiceThreadConfig

Name	Code	Type	P	M
HighThreads	HIGHTHREADS	size	No	No
LowThreads	LOWTHREADS	size	No	No
NormalThreads	NORMALTHREADS	size	No	No
NumThreads	NUMTHREADS	size	No	No
PoolType	POOLTYPE	pooltype	Yes	Yes
ServerId	SERVERID	serverid	Yes	Yes
VHighThreads	VHIGHTHREADS	size	No	No
XpressThreads	XPRESSTHREADS	size	No	No

Table 3-48 contains a record of every individual slot and its status currently accessible for managing Storage Management requests. Abbreviated table name “SL” for consistency of stored procedure naming.

Table 3-48. DsStSlot

Name	Code	Type	P	M
ElementNo	ELEMENTNO	elementNo	No	No
IsMediaInSlot	ISMEDIAINSLOT	boolean	No	No
IsSlotAllocated	ISSLOTALLOCATED	boolean	No	No
IsSlotOnline	ISSLOTONLINE	boolean	No	No
MediaId	MEDIAID	barcode	No	No
SlotId	SLOTID	slotid	Yes	Yes
SlotNumber	SLOTNUMBER	slotnumber	No	Yes
StackerId	STACKERID	resource	No	No

Table 3-49 contains information on stackers. A DsStDevice record may exist in Stacker form (containing more than one device/drive). It is necessary to track which devices are controlled by which stacker to adequately support the reservation requirements. Reserving a stacker automatically reserves the associated devices controlled by that stacker. Related to 4MM and 8MM Tape (Device) drives. Abbreviated table name "SK" for consistency of stored procedure naming.

Table 3-49. DsStStacker

Name	Code	Type	P	M
Barcode	BARCODE	boolean	No	No
Description	DESCRIPTION	description	No	No
ElementNo	ELEMENTNO	elementNo	No	No
FixedSlot	FIXEDSLOT	slotnumber	No	No
IsStackerOnline	ISSTACKERONLINE	boolean	No	No
MediumType	MEDIUMTYPE	mediumtype	No	Yes
OnlineDrives	ONLINEDRIVES	smallcount	No	Yes
OnlineSlots	ONLINESLOTS	smallcount	No	Yes
ServerId	SERVERID	serverid	No	No
StackerId	STACKERID	resource	Yes	Yes
StackerModel	STACKERMODEL	model	No	No
StackerNumber	STACKERNUMBER	stackernumber	No	No
StackerPath	STACKERPATH	path	No	No
TotalDrives	TOTALDRIVES	smallcount	No	Yes
TotalRoSlots	TOTALROSLOTS	smallcount	No	Yes
TotalRwSlots	TOTALRWSLOTS	smallcount	No	Yes
TotalSlots	TOTALSLOTS	smallcount	No	Yes

Table 3-50 tracks staging disk usage**.** Abbreviated table name "SD" for consistency of stored procedure naming.

Table 3-50. DsStStagingDisk

Name	Code	Type	P	M
Access	ACCESS	access	No	No
AvailableSpace	AVAILABLESPACE	size	No	Yes
CompressionType	COMPRESSIONTYPE	compression	No	No
DiskNum	DISKNUM	disknum	No	No
DiskPath	DISKPATH	path	No	Yes
DiskTag	DISKTAG	disktag	Yes	Yes
LastAccessed	LASTACCESSED	datetime	No	Yes
OwnerName	OWNERNAME	name	No	No
Persistent	PERSISTENT	status	No	No
Retention	RETENTION	retention	No	No
ServerId	SERVERID	serverid	No	Yes
Size	SIZE	size	No	Yes

Table 3-51 contains information on links to files stored in staging disks. Abbreviated table name "SDF" for consistency of stored procedure naming.

Table 3-51. DsStStagingDiskFile

Name	Code	Type	P	M
DiskTag	DISKTAG	disktag	Yes	Yes
FileName	FILENAME	file	Yes	Yes
FileSize	FILESIZE	size	No	No
FileType	FILETYPE	size	No	No
SourceDiskTag	SOURCEDISKTAG	disktag	No	No
SourceFile	SOURCEFILE	path	No	No

Table 3-52 tracks the client processes attached to staging disks. Abbreviated table name "SD" for consistency of stored procedure naming.

Table 3-52. DsStStagingDiskLien

Name	Code	Type	P	M
CreationTime	CREATIONTIME	datetime	No	No
DiskTag	DISKTAG	disktag	No	Yes
LienHolder	LIENHOLDER	name	No	Yes
StagDiskLienId	STAGDISKLIENID	identityid	Yes	Yes

Table 3-53 makes requests for staging disks to be created. Abbreviated table name "SDR" for consistency of stored procedure naming.

Table 3-53. DsStStagingDiskRequest

Name	Code	Type	P	M
CompressionType	COMPRESSIONTYPE	compression	No	No
DiskTag	DISKTAG	disktag	No	No
IntValue	INTVALUE	int	No	No
RPCId	RPCID	rpcid	Yes	Yes
RealValue	REALVALUE	real	No	No
Size	SIZE	cachespace	No	No
SourceDiskTag	SOURCEDISKTAG	path	No	No
SourceFileName	SOURCEFILENAME	file	No	No
TargetDisk	TARGETDISK	path	No	No
TargetFileName	TARGETFILENAME	file	No	No

Table 3-54 maintains configurable parameters for staging disks. Abbreviated table name "SDS" for consistency of stored procedure naming.

Table 3-54. DsStStagingDiskServer

Name	Code	Type	P	M
AvailableStagingSpace	AVAILABLESTAGINGSPACE	cachespace	No	Yes
RootPath	ROOTPATH	path	No	Yes
ServerId	SERVERID	serverid	Yes	Yes
StagingBlockSize	STAGINGBLOCKSIZE	blocksize	No	Yes
TotalStagingSpace	TOTALSTAGINGSPACE	cachespace	No	Yes

Table 3-55 contains temporary worktable for GRCleanup.

Table 3-55. DsStTempGR

Name	Code	Type	P	M
RPCid	RPCID	rpcid	No	Yes

Table 3-56 contains 'volume group' (section of Archive you are dealing with) information from configuration files such as the path currently pointed to and a history of paths related ONLY to a particular Archive server type. Abbreviated table name "VG" for consistency of stored procedure naming.

Table 3-56. DsStVolumeGroup

Name	Code	Type	P	M
ServerId	SERVERID	serverid	No	Yes
VersionedDataType	VERSIONEDDATATYPE	datatype	No	Yes
VolumeEndDate	VOLUMEENDDATE	datetime	No	No
VolumeGroupId	VOLUMEGROUPID	identityid	Yes	Yes
VolumeGroupPath	VOLUMEGROUPPATH	path	No	Yes
VolumeStartDate	VOLUMESTARTDATE	datetime	No	Yes

Table 3-57 contains information about the current database version for Storage Management databases.

Table 3-57. EcDbDatabaseVersions

Name	Code	Type	P	M
EcDbComments	ECDBCOMMENTS	comments	No	No
EcDbCurrentVersionFlag	ECDBCURRENTVERSIONFLAG	flag	No	No
EcDbDatabaseName	ECDBDATABASENAME	name	No	No
EcDbDropDescription	ECDBDROPDESCRIPTION	description	No	No
EcDbDropInstallDate	ECDBDROPINSTALLDATE	datetime	No	No
EcDbDropVersion	ECDBDROPVERSION	version	Yes	Yes
EcDbSchemaVersionId	ECDBSCHEMAVERSIONID	id	No	No
EcDbSybaseServer	ECDBSYBASESERVER	server	No	No
EcDbSybaseVersion	ECDBSYBASEVERSION	version	No	No
EcDbUpdateProcess	ECDBUPDATEPROCESS	process	No	No

3.1.3 Column Specifications

Brief definitions of each of the columns within the STMGT and DDIST Subsystems database and their valid values, or references to other documents containing the valid values, are contained herein. "Valid Values" identify the permissible data content of the column where there is a finite set of acceptable values that can be defined. Other columns are simply formatted/free text or numeric.

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
Access	Level of permission allowed for that staging disk (i.e. RW, RO)	varchar(10)	DsStStagingDisk	
ActiveRPCId	Points to the RPCId location of the active requests.	varchar(175)	DsStDependentRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
AlwaysInCache	"Y"es or "N"o if file should always remain in cache file and Not be given delete authorization.	char(1)	DsStCache DsStDeleteLogCacheFile	Y (yes); N (No)
Archiveid	The Archive Id from science data server (SDSRV).	varchar(255)	DsDdFile	
ArchiveId	Relative to Archive Backup & Restore, it is external data received from SDSRV. Format: "<HWCI>_<mode>:<VG name>" or "<HWCI>_<mode>:<disk name>". Only one of ArchiveId or StagingId is populated; both are never filled.	varchar(30)	DsStArchiveHistory DsStBackup DsSTBackupHistory	
AuxState	TBD	varchar(255)	DsDdRequest	
AvailableSpace	Current space on the staging disk server.	int	DsStStagingDisk	
AvailableStagingSpace	Remaining space on the staging disk server.	numeric(15)	DsStStagingDiskServer	
AvailableCacheSpace	Remaining disk space allocated/ available (in the Pull Monitor). Determined at start time and recalculated after each process performed; could be different on start up (e.g., 10000000).	numeric(15)	DsStCache	
Backupid	Relative to Archive Backup and Restore, it is external data received from SDSRV. Format: <HWCI>_<mode>:<VGname> or <HWCI>_<mode>:<diskname>	varchar(255)	DsDdFile	
BackupId	Relative to Archive Backup & Restore, it is external data received from SDSRV. Format: <HWCI>_<mode>:<VG name> or <HWCI>_<mode>:<disk name>. Only one of ArchiveId or StagingId is populated; both are never filled.	varchar(30)	DsStArchiveHistory DsStBackup DsSTBackupHistory	
BackupTransferStage	Indicates a stage of a restart backup request. (i.e. Executing, Failed)	varchar(50)	DsStBackup DsStBackupHistory	
BackupTransferStatus	Status of a restart backup request. (i.e. Blank, Failed, Completed, Successful)	varchar(50)	DsStBackup DsStBackupHistory	
Barcode	Indicates whether or Not the stacker automatic inventorying of media through the use of a built in barcode reader.	tinyint	DsStPreconfiguredStacker DsStStacker	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
BufferNumber	(NOT USED)	int	DsStCDROMServer	
BufferSize	(NOT USED)	int	DsStCDROMServer	
CacheBlockSize	Size of blocks in bytes for the cache used for copying files in and out of the cache and allocating space in the cache.	int	DsStCache	
CacheId	Unique cache id (of Pull Monitor and Staging Monitor/ Disk).	numeric(5)	DsStCache DsStCacheFile DsStDeleteLogCacheFile DsSTFileLien DsStFileLink DsStManagedCacheDir DsStNotification DsStPendingReservations	
CallBackFunction	(NOT USED)	varchar(50)	DsDdRequest	
Capacity	Total amount of space available for (Distribution and Ingest FTP, 4MM and 8MM Tapes) utilization (e.g., 1200000000). AnNotation: Should accept either the HighCapacity or LowCapacity of its corresponding ServerId record on DsStConfigParameter table.	int	DsStMediaServer	
CheckPointState	For Table DsStDistributedFile: Processing state of a file; used for the purpose of getting back to an initial state.	varchar(50)	DsStFile DsStGenericRequest	0 (= Initial) 1 (= Checkpointed) 2 (= Staging Disk Created) 3 (= Ready to Copy (after the release) 4 (= Copy Attempted (we did

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
				the copy) 5 (= Checksum Computed) 6 (= Backed-up Online) 7 (= Completed)) For Table DsStGenericRequest: Processing state of a Request; used for the purpose of getting back to an initial state. 0 (= Initial) 1 (= Checkpointed) 2 (= Failed) 3 (= Completed)
Checksum	The checksum of the Archive.	int	DsDdFile	
Checksum	Computed. Used for the purpose of identifying a file's and its processed state.	nnt	DsStCacheManagerRequest DsStFile	
ChecksumFlag	Flag to determine if the checksum is calculated on cache copy.	tinyint	DsStCacheManagerRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
CompletedLocation	Text description provided by operator where the media is located after having been unloaded.	varchar(255)	DsStMedia	
Compressibility	The compressibility of the granule.	int	DsDdGranule	
CompressionFactor	Indicates the percentage reduction in the filesize by applying the specific compression type.	real	DsStCompressionStats	
CompressionId	(GOING AWAY)	numeric(5)	DsStCompressionStats	
CompressionMean	The average reduction in filesize experienced to date for the assoc. compression method and datatype.	real	DsStCompressionStats	
CompressionType	Type of compression required to process the data.	varchar(16)	DsStCompressionStats	0 (No compression (default); 1 (compressed); 2 (decompressed)
CompressionType	Type of compression required to process the data.	int	DsStCompressionStats DsStStagingDisk DsStStagingDiskRequest DsStArchiveRequest DsStBackup DsStBackupHistory DsStCacheManagerRequest	
Confidence80	Based on experiential data the minimum reduction in filesize predicted with an 80% level of confidence.	real	DsStCompressionStats	
Confidence85	Based on experiential data the minimum reduction in filesize predicted with an 85% level of confidence.	real	DsStCompressionStats	
Confidence90	Based on experiential data the minimum reduction in filesize predicted with an 90% level of confidence.	real	DsStCompressionStats	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
Confidence95	Based on experiential data the minimum reduction in filesize predicted with an 95% level of confidence.	real	DsStCompressionStats	
Confidence99	Based on experiential data the minimum reduction in filesize predicted with an 99% level of confidence.	real	DsStCompressionStats	
ConfirmDelete	Flag whether to automatically Delete upon reaching PullExpirationTime (Pull Monitor and Staging Monitor/ Disk).	smallint	DsStCache	
ControllerId	The numeric identifier associated with the device as required ioctal calls to the device.	int	DsStDevice DsStPreconfiguredDevice	
CreateDate	Date and Time at which a record is inserted/created. Used for uniqueness of repeated record details and for historical reference.	datetime	DsStBackup DsStBackupHistory DsStRequestMedia	
CreationTime	Date and Time at which a record is inserted/ created. Used for uniqueness of repeated record details and for historical reference.	datetime	DsStGenericRequest DsStStagingDiskLien DsStPendingDelete	
CurrDdistStageDisk	The staging disk tag (or its fully qualified name) of the current (unfinished) DDIST target staging disk associated with the current media.	varchar(255)	DsDdRequest	
CurrentFileIndex	Which file is being requested for processing (e.g., file 4 of 12).	int	DsStArchiveRequest	
CurrentOperation	Operation of the device at the present.	smallint	DsStDevice DsStPreconfiguredDevice	"Read", "Write", & "Null".
Datalist	Path and name of (Staging Monitor/ Disk) list of files in cache area (e.g., /home/dsst/pull.list).	varchar(255)	DsStFtpServer DsStNotification	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
DefaultBlockFactor	Specifies the size in bytes of blocks for the remote tape device or disk that is being written. Platform specific (for all servers).	smallint	DsStMediaServer	The only certain known value is 2048 (bytes) which is used by default. 65K is the maximum value that can be specified (e.g., 1024 for Sun, 4096 for SGI).
DefaultRPCTag	Initial RPC settin.g	char(4)	DsStServerType	
DeleteDate	Date and Time the file was removed from cache (Pull Monitor or Staging Monitor/ Disk). Set with the current system date upon insert into the table.	datetime	DsStDeleteLogCacheFile DsStBackupHistory	
DeleteFlag	Indicator for items to be deleted	char(1)	DsStCacheFile	
DeleteLogId	Unique identifier of each historical record inserted to table. Sequentially generated from the DsStNextId table.	numeric(5)	DsStDeleteLogCacheFile	
DependReqId	(GOING AWAY)	numeric(15)	DsStDependentRequest	
Description	1) For Table: DsStCache. For elaboration on or further identification of unique cache. 2) For Table: DsStDevice. Detailed description of the type of device (e.g., Large capacity 4MM Tape stacker device) 3) For Table: DsStErrorText. Textual information regarding errors.	varchar(255)	DsStCache DsStDevice DsStErrorText DsStPreconfiguredDevice DsStPreconfiguredStacker DsStStacker	
DestinationPath	The path in which files to be transferred are to be placed.	varchar(255)	DsStFtpRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
DeviceName	Unique identifier of the device record. A device can be either stand alone as with a 4MM Tape Drive, or a device can be related to a Stacker as with a 4MM Tape Stacker which would have more than one device/ drives associated with it. If a Device is related to a Stacker, concatenating the DeviceName and StackerId columns as the DeviceName column value formats the unique identifier.	varchar(20)	DsStDevice DsStMediaRequest	
DeviceTablePath	Used for scheduling and reservations in the Resource Provider for most of the resources.	varchar(255)	DsStConfigParameter	
Directory	Created (by Pull Monitor) when files are linked and FTP'd (e.g., /home/dsst/user).	varchar(255)	DsStConfigParameter	
DirectoryId	Unique identifier of each directory record inserted to table. Sequentially generated from the DsStNextId table.	numeric(5)	DsStFileLink DsStManagedCacheDir	
DirectoryName	The name of the directory.	varchar(200)	DsStManagedCacheDir DsStCacheManagerRequest	
DiskNum	A unique integer given to a disk by the staging manager.	numeric(5)	DsStStagingDisk	
DiskPath	Unix path to the disk.	varchar(255)	DsStStagingDisk	
DiskTag	Unique identifier that identifies the disk.	varchar(24)	DsStFile DsStStagingDisk DsStStagingDiskFile DsStStagingDiskLien DsStStagingDiskRequest	
DistName	The user-given name that a file to be distributed will ultimately have upon distribution onto media or ftp.	varchar(200)	DsDdFile	
DistributionEstSize	The estimated volume of data to be distributed as calculated by DDIST based on expected compression rates.	int	DsStMediaRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
DriveNumber	Which drive of the available drives in the stacker hardware is being used (e.g., 1, 2, or 3).	smallint	DsStDevice DsStPreconfiguredDevice	
EcDbComments	Notes or comments on the database version level.	varchar(255)	EcDBDatabaseVersions	
EcDbCurrentVersionFlag	Flag indicating if this row represents the current database version entry	char(1)	EcDBDatabaseVersions	
EcDbDatabaseName	The name of the database for which this database versions level is applied.	varchar(255)	EcDBDatabaseVersions	
EcDbDropDescription	The official name of the ECS software drops for this database version level.	varchar(255)	EcDBDatabaseVersions	
EcDbDropInstallDate	The date and time that the database versions level was installed.	datetime	EcDBDatabaseVersions	
EcDbDropVersion	The official description of the ECS software drops for this database version level.	char(64)	EcDBDatabaseVersions	
EcDbSchemaVersionId	The subsystem-specific identifier for this database schema version.	smallint	EcDBDatabaseVersions	
EcDbSybaseServer	The name of the baseline Sybase SQL server controlling this database.	varchar(255)	EcDBDatabaseVersions	
EcDbSybaseVersion	The software release version of the Sybase SQL server in place when this database version level was initially installed.	varchar(255)	EcDBDatabaseVersions	
EcDbUpdateProcess	The installation method by which this database version level was installed.	varchar(255)	EcDBDatabaseVersions	
EcsUserId	The User ID of the user initiating request.	varchar(50)	DsDdRequest	
ElementNo	An identifying number (for robotic arm) to find location of a drive device.	smallint	DsStDevice DsStPreconfiguredDevice DsStPreconfiguredStacker DsStSlot DsStStacker	
EncryptedPassword	The encrypted ftp password.	varchar(50)	DsStFtpRequest	
EndDate	Date and Time at which activity or record processing has completed.	datetime	DsStBackup DsStBackupHistory	
EndTime	The time that distribution ended.	varchar(255)	DsDdRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
ErrorCode	Numeric value used to uniquely identify specific error record. Will be referenced in storage management software code (if and when an error occurs) for Standard Error Handling.	int	DsStCancelledRequest DsStErrorAttribute DsStErrorText DsStFile DsStGenericRequest DsStPendingDelete DsStMediaServerContact	
EsdtType	The ESDT (Earth Science Data Type) Type. A Request is of one EsdtType and can include many Granules, but all Granules associated with a Request must be of the same EsdtType.	varchar (50)	DsDdGranule DsDdRequest	
EstFilesize	The estimated size of the file.	float(8)	DsDdFile	
EstGranuleSize	The sum of the estimated size of the files in the granule.	float(8)	DsDdGranule	
EventDate	Date and time of occurrence of (table insertion) error/ event on event log. Supplied by calling the application.	datetime	DsStEventLog	
EventLevel	Fatal or Retry related to Error.	varchar (11)	DsStEventLog	
EventLogId	Unique identifier of an entry on the event log. Sequentially generated from DsStNextId table via an insert Trigger.	numeric(5)	DsStEventLog	
EventMessage	The associated text for a STMGT event or COTS error message.	varchar(255)	DsStFile DsStEventLog	
EventNumber	Created independently of the Database; it is a number that is associated with a STMGT event message or COTS error number.	int	DsStEventLog	
EventType	Categorization of an entry on the event log (e.g., Server, Pull Monitor, Cache, Sybase).	varchar(10)	DsStEventLog	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
Expiration	This is the date time that expires the files in cache.	datetime	DsStDeleteLogCacheFile DsStFileLien DsStFileLink DsStFtpRequest DsStManagedCacheDir	
ExpirationThreshold	Number of hours it takes for files to expire in the cache.	int	DsStCache	
ExternalRequestId	A SIPS-generated identifier that uniquely defines an order generated through the Machine-to-Machine Gateway.	varchar(50)	DsStPrintRequest DsStCacheManagerRequest DsStFtpRequest DsStMediaRequest	
FileIndex	This is file n of m files (e.g., file 2 of 12)	int	DsStArchiveFileRequest DsStFile	
FileIOBlockSize	The blocks to be used for file IO.	int	DsStCache	
FileLienId	(GOING AWAY)	numeric(5)	DsStFileLien	
FileList	The name of the file containing the list of the files to be distributed.	varchar(30)	DsStMediaRequest	
FileLocation	Physical file location or directory path.	varchar(255)	DsStFile	
FileName	The 'unique filename'. Relative to PullMonitor caching, it is the unique identifier of the metadata file (uniq_file). Relative to Archive Backup & Restore, it is the unique identifier of the metadata file provided as external data from SDSRV.	varchar(200)	DsStBackup DsStBackupHistory DsStCacheFile DsStDeleteLogCacheFile DsStFile DsStFileLien DsStFileLink DsStStagingDiskFile DsStPendingDelete DsStPendingReservations DsStStagingDiskFile	
Filesize	The size of the file.	float(8)	DsDdFile	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
FileSize	The size of the cache file in bytes. File sizes of greater that 2 gigabytes are Not expected.		DsStCacheFile DsStCacheManagerRequest DsStDeleteLogCacheFile DsStFile DsStPendingReservations DsStStagingDiskFile DsStFtpRequest	
FileType	Type of file in the staging disk. (i.e. Link, ROCacheLink, Directory, File)	int	DsStStagingDiskFile	
FixedSlot	Fixed slot of the Stacker	smallint	DsStPreconfiguredStaker DsStStacker	
Format	Media format for distribution. (i.e. Rockridge (DsStCDROMServer), Tar (DsStMediaRequest))	varchar(15)	DsStCDROMServer DsStMediaRequest	
FtpHost	Holds the hostname to connect to for FtpPush.	varchar(255)	DsDdParameterList	
FtpPassword	Holds the password to use for FtpPush.	varchar(255)	DsDdParameterList	
FtpPullExp	The expiration date-time that a completed FtpPull is granted before it will be automatically removed from the pull area.	varchar(255)	DsDdParameterList	
FtpPullHost	The host name that the user is to ftp into to get his requested FtpPull files.	varchar(255)	DsDdParameterList	
FtpPushDest	Holds the target system directory.	varchar(255)	DsDdParameterList	
FtpUser	Holds the login to use for the FtpPush.	varchar(50)	DsDdParameterList	
GenericName	Holds the generic name for EcDsDistributionServer	varchar(40)	DsDdServerGeneric	
GenericValue	Holds the generic value for EcDsDistributionServer	varchar(40)	DsDdServerGeneric	
GranuleId	The granule Id of the actual granule.	varchar(150)	DsDdFile DsDdGranule	
GranuleSize	The sum of the sizes of files in the granule.	float(8)	DsDdGranule	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
HighThreads	Number of service threads in the pool allocated at the priority high.	int	DsStServiceThreadConfig	
HighWaterMark	Highest allowable percentage usage of space allocated (for the Pull Monitor and Staging Monitor/ Disk) (e.g., 74.80).	decimal(5,2)	DsStCache	
Host	The host in which to connect to for the ftp transfer.	varchar(64)	DsStFtpRequest	
HostName	The host on which the server instance is running.	varchar(64)	DsStConfigParameter	
HWCI	HardWare CI. Used to allow multiple instances of a ServerType to exist such as EcDsStArchiveServeDRP1 and EcDsStArchiveServerICL1.	char(12)	DsStConfigParameter	
InsertTime	The time a particular file was stored in the archive.	datetime	DsStPendingDelete	
IntValue	Houses request values that are integer types.	int	DsStStagingDiskRequest	
IsDriveAllocated	Tells whether or Not the drive is allocated.	tinyint	DsStDevice DsStPreconfiguredDevice	
IsDriveOnline	Tells whether or Not the drive is online.	tinyint	DsStDevice DsStPreconfiguredDevice	
IsMediaInDrive	Tells whether or Not any media is in the drive.	tinyint	DsStDevice DsStPreconfiguredDevice	
IsMediaInSlot	Tells whether or Not any media is in the slot.	tinyint	DsStSlot	
IsRetrieveCksumEnabled	Tells whether or Not the checksum is enabled for an archive retrieve.	tinyint	DsStArchiveServer	
IsSlotAllocated	Tells whether or Not the slot is allocated.	tinyint	DsStSlot	
IsSlotOnline	Tells whether or Not the slot is online.	tinyint	DsStSlot	
IsStackerOnline	Tells whether or Not the stacker is online.	tinyint	DsStStacker	
IsStoreCksumEnabled	Tells whether or Not the checksum is enabled for an archive store.	tinyint	DsStArchiveServer	
LastAccessed	Time stamp in which a file was last accessed.	datetime	DsStCacheFile DsStDeleteLogCacheFile DsStStagingDisk	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
LastArchiveVolumeGroup	The volumegroupid that identifies the primary archive local location that an archive server has stored a file.	numeric(9)	DsStFile	
LastBackupVolumeGroup	The volumegroupid that identifies the backup archive local location that an archive server has stored a file.	numeric(9)	DsStFile	
LastOffsiteVolumeGroup	The volumegroupid that identifies the offsite archive local location that an archive server has stored a file.	numeric(9)	DsStFile	
LastOperation	For media ingest operation this indicates the last step which is completed.	varchar(16)	DsStMediaRequest	
LastSuccMediaNr	The last successful media number.	int	DsDdRequest	
LastSuccStageNr	The value of the counting index of the last media for which staging was completed. The index is zero for the first media.	int	DsDdRequest	
LastUpdated	Time stamp indicating when a request was last modified.	datetime	DsStGenericRequest	
LienHolder	The client that owns the lien on the cache file or staging disk.	varchar(150)	DsStStagingDiskLien DsStFileLien	
LinkName	The name of the file as it appears, which is a link to the cache.	varchar(150)	DsStFileLink	
LoopIndex	An integer indicating the current file being processed in a list of files.	int	DsStFtpRequest	
LockVal	An integer column	int	DsStSDLock	
LowThread	Number of service threads in the pool allocated at the priority low.	int	DsStServiceThreadConfig	
LowWaterMark	Delete down to limit when High Water Mark is reached (for the Pull Monitor and Staging Monitor/ Disk) (e.g., 24.50).	decimal(5,2)	DsStCache	
ManagedDirectoryArea	The base path of managed directories contained within a cache.	varchar(255)	DsStCache	
MaxRequestSize	Maximum size for a requested media.	int	DsStFtpRequest	
MaxReroutes	For media servers the maximum number of times a request will be rerouted to a different server instance.	int	DsStServerType	
MediaBlockSize	The media blocksize format.	Float(15)	DsDdRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
MediaBlockSize	The blocksize used for the media for reading and writing this parameter is also used for specifying media capacity.	int	DsStMediaServer	
MediaCapacity	The capacity for media.	float(15)	DsDdRequest	
MediaCapacity	The capacity for media.	int	DsStMedia	
MediaFormat	The media distribution format (ie: FILEFORMAT,TARFORMAT)	varchar(50)	DsDdParameterList	
MediaId	Unique identifier used to identify a certain piece of hard media. (i.e. Tape, CD, DLT Tape)	varchar(32)	DsStDevice DsStMedia DsStMediaRequest DsStMediaSet DsStRequestMedia DsStSlot	
MediaNumber	The order in a sequence of numbers for media distribution. (i.e. 1 of 3, 2 of 3, 3 of 3)	int	DsStRequestMedia	
MediaOnlineDrives	A flag that tells whether or Not the drive is online or offline.	int	DsStRequestMedia	
MediaSetId	The description identifying the media set.	varchar(150)	DsStMediaSet	
MediaStagingDisk	A local staging disk used for media distribution.	varchar(24)	DsStMediaRequest	
MediaStatus	The status of a DLT media distribution.	smallint	DsStMedia	
MediaType	The type of media used for a request.(i.e. 8MMTAPE, CDRom)	varchar(50)	DsDdParameterList	
MediaUse	Whether or Not media is in use. Set to one if in use and zero if Not in use.	smallint	DsStMedia	
MediumType	Type of medium this particular Stacker resource accommodates (e.g., 8mm Tape, 4mm Tape, D3 Tape).	varchar(50)	DsStStacker DsStPreconfiguredStacker	
Mnemonic	Defined by internal standards for symbolic constants (e.g., DsCSt*).	varchar(32)	DsStErrorText	
Model	Particular model number or reference for this device (for 4MM, 8MM Tapes and Stackers) (e.g., CM1).	char(20)	DsStDevice DsStPreconfiguredDevice	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
NetworkDistribution	A flag indicating whether or Not the server will permit media distribution from a remote (NSF mounted) staging disk.	tinyint	DsStMediaServer	
NoWaitFlag	Flag used in reserving space in the cache to indicate whether a client wants to wait for space to be freed.	tinyint	DsStCacheManagerRequest	
Node	The Node on which the server is currently running when it is brought up (e.g., kodiak, soe2sun, dss2). When the server is taken down, the Node field will be set to NULL (default) or blank. Automatically set by application software.	varchar(255)	DsStPreconfiguredDevice	
Node	The Node on which the server is currently running when it is brought up (e.g., kodiak, soe2sun, dss2, etc.). When the server is taken down, the Node field will be set to NULL or blank.	varchar(255)	DsStDevice	
NormalThreads	Number of service threads in the pool allocated at the priority Normal.	int	DsStServiceThreadConfig	
Notify	Indicates the mail address to use for Notification.	varchar(50)	DsDdParameterList	
NotifyType	If MAIL is specified, a Distribution Notification message will be sent, either to email address of logical queue specified in the NOTIFY parameter. If LIST is specified, a GLparameter list of distributive files will be returned to the RPC caller.	varchar(50)	DsDdParameterList	
NrGranFiles	The number of files in a granule.	int	DsDdGranule	
NrGranules	The number of granules per media object.	int	DsDdRequest	
NrMedia	The number of distinct physical media to distribute onto for a single DDIST request. This is always one for FtpPull requests, and in practice it is one for FtpPushes.	int	DsDdRequest	
NrReqFiles	The number of files in the distribution request.	int	DsDdRequest	
NumColumns	The number of columns for formatting a page to print. Required for the printer server.	smallint	DsStMediaServer	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
NumFiles	Total files related to the RequestId.	int	DsStArchiveRequest DsStCompressionStats	
NumRows	The number of rows for formatting a page to print. Required for the printer server configuration.	smallint	DsStMediaServer	
NumThreads	Number of service threads in the pool.	int	DsStServiceThreadConfig	
Offsiteid	Relative to Archive Backup and Restore, it is external data received from SDSRV. The value is three characters (i.e. GSF, ERC..)	varchar(255)	DsDdFile	
OffsiteId	Relative to Archive Backup & Restore, it is received as external data from SDSRV. It's value must be in the format of 3 characters (e.g., GSF, ERC).	varchar(30)	DsStArchiveRequest DsStBackup DsStBackupHistory	
OffsiteTransferStage	Indicates a stage of a restart offsite request. (i.e. Executing, Failed)	varchar(50)	DsStBackup DsStBackupHistory	
OffsiteTransferStatus	Status of restart offsite request. (i.e. Blank, Failed, Completed, Successful)	varchar(50)	DsStBackup DsStBackupHistory	
OnlineDrives	Number of drives that are on-line versus off-line in this stacker.	smallint	DsStStacker DsStPreconfiguredStacker	
OnlineSlots	Number of slots that are on-line versus off-line in this stacker.	smallint	DsStStacker DsStPreconfiguredStacker	
OperationStatus	Status of the Operation.	smallint	DsStDevice DsStPreconfiguredDevice	Free, Allocated, Mounted, Completed
OrderedState	The ordered state of a request. (i.e. Cancel, Suspend, Marked Shipped...)	varchar(50)	DsDdRequest	
OrderId	The OrderId for the distribution request.	varchar(50)	DsDdRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
OriginalFileName	Relative to PullMonitor caching, it is the original file name received from the satellite-transmitted data. Relative to Archive Backup & Restore, it is the original file name received as external data from SDSRV.	varchar(200)	DsStBackup DsStBackupHistory DsStFile	
OriginalRPCId	Points to the RPCId location of data that a subrequest should use to get file data.	varchar(175)	DsStArchiveFileRequest	
OwnerName	The name of the client whom the disk belongs.	varchar(150)	DsStManagedCacheDir DsStPendingReservations DsStStagingDisk	
PathName	Directory path of device/resource files used (e.g., /ecs/usr/TS1/CUSTOM/bin/).	varchar(255)	DsStDevice DsStPreconfiguredDevice	
PendingId	Unique identifier for DsStPendingReservations	numeric(9)	DsStPendingReservations	
Persistent	Indicates if the staging disk should be retained or deleted when the last attached client detaches.	smallint	DsStStagingDisk	
PollingRequired	'Poll' the database to see if there is any work for this server.	smallint	DsStNotification	Y(es) N(o)
PoolType	Classification of threads within a certain pool. (i.e. ReadThreads, WriteThreads)	char(16)	DsStServiceThreadConfig	
PortNumber	The port that a server listens on to be woken up.	int	DsStConfigPrameter	
PrinterSource	The staging disk on which the file to be printed resides.	varchar(35)	DsStPrintRequest	
PrintFileName	The file to be printed.	varchar(200)	DsStPrintRequest	
PrintQue	The destination printer queue to print to. Required for the printer server configuration.	varchar(200)	DsStMediaServer	High, Medium, Low
PrintUser	The client process requesting the print.	varchar(50)	DsStPrintRequest	
Priority	The priority for the DistRequest object.	int	DsDdRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
Priority	Priority assigned.	smallint	DsStGenericRequest DsStBackup DsStBackupHistory	
ProcessFlag	Indicates whether or not this request cancellation has been seen by the affected server. This does not mean the request has been serviced.	tinyint	DsStCancelledRequest	
ProcessingState	The state of a request. (i.e. P = Processing, S = Suspended, C = Completed)	char(1)	DsStGenericRequest	
ProgressPartial	The portion of a certain request that is completed.	int	DsStGenericRequest	
ProgressTotal	The total portion needed to complete the request.	Int	DsStGenericRequest	
ProgressUnits	The units of portion used in ProgressPartial and ProgressTotal.	varchar(12)	DsStGenericRequest	
PullHost	The machine on which the pull area resides.	varchar(64)	DsStFtpRequest	
PullServerId	The serverid of the pull monitor server.	numeric(5)	DsStFtpRequest	
RealValue	Houses request values that are real types.	real	DsStStagingDisk	
RecorderSpeed	Speed 2 or 4, which depends on the hardware configuration.	varchar(5)	DsStCDROMServer	
ReqMgrNotified	The flag indicating if the request manager has been Notified of a completed request.	tinyint	DsStGenericRequest	
RequestDirectoryId	The directory id associated with an ftp pull request.	Numeric(5)	DsStFtpRequest	
Requestid	The RequestID of the distribution request that came from science data server (SDSRV).	varchar(50)	DsDdParameterList DsDdGranule DsDdFile DsDdRequest	
RequestId	Received from the DDIST (Data Distribution) CI as the RPCId.	varchar(50)	DsStRequestMedia	
RestartMode	The mode in which the server was restarted.	int	DsStCacheManagerRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
Retention	Refers to how long (in hours) an incomplete request will be held in the checkpoint table (stagind disk) before being discarded as an abandoned request.	int	DsStStagingDisk	
Retries	Number of retries if (Distribution and Ingest FTP) request fails (e.g., 1).	smallint	DsStConfigParameter	
RetrievedFileSize	File size capacity.	int	DsStFile	
Rootpath	Path to Device/ Resource (staging area cache) (for the Staging Monitor/ Disk) (e.g., /home/dsst/pullmonitor)	varchar(255)	DsStStagingDiskServer DsStCache	
RPCid	For rebinding/restarting. The format is a combination of a RequestId from a system level and a TransactionId that is fixed whenever the system restarts. SDSRVStagingArea DsDdRequest. The Location where science data server is staging the request data.	varchar(175)	DsDdRequest DsDdRequestVersion	
RPCId	For rebinding/restarting. The format is a combination of a RequestId from a system level and a TransactionId that is fixed whenever the system restarts.	varchar(175)	DsStArchiveFileRequest DsStArchiveRequest DsStCacheManagerRequest DsStCancelledRequest DsStDependentRequest DsStEventLog DsStFile DsStFtpRequest DsStGenericRequest DsStMediaRequest DsStMediaServerContacted DsStPendingReservations DsStPrintRequest DsStTempGR DsStStagingDiskRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
RPCSubTag	String identifying a server that is used to create submessages within a RPCId.	char(4)	DsStConfigParameter	
Scope	Targeted level of the operation.	char(1)	DsStErrorAttribute	'R' (request); 'A' (application); 'S' (system); 'E' (enterprise)
SCSIId	(NOT USED)	int	DsStDevice DsStPreconfiguredDevice	
SDSRVStageArea	(Not Currently Used)	varchar(255)	DsDdRequest	
ServerDescription	Description of server type (e.g., Large capacity 4MM Tape stacker device).	varchar(255)	DsStServerType	
ServerId	Unique identifying name of server using pre-defined naming convention (e.g., EcDsStArchiveServer<HWCI>_<mode>, EcDsStPullMonitorServer<HWCI>_<mode>).	numeric(5)	DsStArchiveServer DsStCache DsStCDROMServer DsStConfigParameter DsStDevice DsStFile DsStFtpServer DsStGenericRequest DsStMediaServer DsStMediaServerContacted DsStServiceThreadConfig DsStStacker DsStStagingDisk DsStStagingDiskServer DsStVolumeGroup DsStPendingDelete	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
ServerName	The text name of the server instance including HWCI but Not MODE.	varchar(50)	DsStConfigParameter	
ServerType	Unique identifier of type of server (e.g., Pull Monitor, Archive, Distribution FTP, D3, 4MM TAPE)	varchar(20)	DsStConfigParameter DsStMedia DsStServerType DsStPreconfiguredStacker DsStPreconfiguredDevice	
Severity	Assessed degree of the error encountered.	char(1)	DsStErrorAttribute	F'(atal); E(rror); W(arning)
Site	Site to be Notified.	varchar(20)	DsDdParameterList	
Size	The measurement of the staging disk referenced in blocks.	int	DsStStagingDisk DsStCacheManagerRequest	
Size	The measurement of the staging disk referenced in blocks.	numeric(15)	DsStStagingDiskRequest	
SizeInMB	The total size of bytes in the distribution request.	float(8)	DsDdRequest	
Sleeptime	Duration in minutes to wait between retries (for Distribution and Ingest FTP) (e.g., 10).	smallint	DsStConfigParameter	
SlotId	Number of slots within a stacker.	numeric(5)	DsStSlot DsStMediaRequest	
SlotNumber	Indicates which slot of the available slots in the stacker hardware is being used (e.g., 1, 2, 3).	smallint	DsStSlot	
Source	Indicates on a retrieve request whether or Not the place where the server is looking for the file is Primary, Backup, or Offsite.	varchar(8)	DsStFile	
SourceDiskTag	The location where files to be linked or copied exist.	varchar(255)	DsStStagingDiskRequest	
SourceDiskTag	The location where the link to copied files exists.	varchar(24)	DsStStagingDiskFile	
SourceFile	The name of the Unix file of the link.	varchar(255)	DsStStagingDiskFile	
SourceFileName	The name of the Unix file to be linked to.	varchar(200)	DsStStagingDiskRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
SourceFileName	The name of the Unix file to be linked to.	varchar(200)	DsStCacheManagerRequest	
SourceLocation	The location of the source files to be linked.	varchar(255)	DsStCacheManagerRequest	
SourceName	Input file name from science data server (SDSRV).	varchar(50)	DsDdFile	
SourcePath	The Staging file path.	varchar(255)	DsDdFile	
SourcePath	The Unix path from which to copy or ftp a file.	varchar(255)	DsStFtpRequest	
SourcePosition	A number indicating the current location in a list when the server is searching through volume groups. (Retrieve Request only)	int	DsStFile	
SourceServerId	The serverid from the cache manager from, which to copy the file.	numeric(5)	DsStCacheManagerRequest	
SourceStagingDisk	The disktag from which to copy or ftp a file.	varchar(35)	DsStMediaRequest	
StackerId	Unique (Medium) type and (model) number of the stacker hardware (e.g., 4MMEXB218).	varchar(20)	DsStDevice DsStMediaRequest DsStStacker DsStSlot	
StackerModel	The manufacture name and model for the stacker.	char(20)	DsStStacker DsStPreconfiguredStacker	
StackerNumber	An identifier for a Stacker such as "Stacker1_OPS"	varchar(10)	DsStStacker DsStPreconfiguredStacker	
StackerPath	Directory path of device or resource files used.	varchar(255)	DsStStacker DsStPreconfiguredStacker	
StackerStatus	Indicates whether the stacker is online or offline.	smallint	DsStPreconfiguredStacker	
StageDiskLienId	Unique identifier for the StagingDiskLien table	numeric(9)	DsStStagingDiskLien	
Stage	On a batch delete request indicates the stage of processing of a file (i.e. Blank, Checkpointed, Submitted)	Varchar(50)	DsStPendingDelete	
StageDiskSize	The staging disk size.	float(8)	DsDdGranule DsDdFile	
StagingBlockSize	The size of the blocks used for staging disk allocation.	int	DsStStagingDiskServer	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
StartDate	Date and time at which a scheduled activity begins.	datetime	DsStBackup DsStBackupHistory	
StartTime	The start time of the distribution request.	varchar(255)	DsDdRequest	
State	The queue state of the distribution request. (i.e. Pending, Active, Shipped,...)	varchar(50)	DsDdRequest	
State	Indicates whether the file is in the cache or enroute to the cache.	varchar(16)	DsStDeleteLogCacheFile DsStCacheFile	
Status	The status for the distribution Request object.	varchar(50)	DsDdRequest	
Status	1) For Table: DsStConfigParameter. Status of server. Application software automatically sets to 'ONLINE' when server is brought up and 'OFFLINE'. (default) when brought down. ***Note:*** *The associated column domain is "state."* Valid Values: "ONLINE" ; "OFFLINE" 2) For Table: DsStDevice. Status of server (e.g., "0" for ONLINE or "1" for OFFLINE). 3) For Table: DsStSchedule. Status of server. Queued (initial), Complete, Inprogress, Reserved. ***Note****: The associated column domain is "status."*	varchar(12)	DsStPendingDelete	0 (= online); 1 (=offline)
StillStoring	A flag indicating whether a file is presently being written to the cache.	tinyint	DsStBackup DsStBackupHistory	
Submitter	Client who has sent the request.	varchar(150)	DsStGenericRequest	
Suggestion	Recommendation for handling recovery related to an experienced error (mnemonic).	varchar(12)	DsStErrorText	
TargetDisk	The disktag of the disk to which staging disk request occur.	varchar(255)	DsStStagingDiskRequest	
TargetFileName	The resulting file of the staging disk operation request.	varchar(200)	DsStStagingDiskRequest	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
TargetFileName	The resulting file of the cache operation request.	varchar(200)	DsStCacheManagerRequest	
TargetPath	The Unix path to which cache copies are written.	varchar(255)	DsStCacheManagerRequest	
ThreadId	Unique identifier of a thread, which a request is assigned to.	int	DsStGenericRequest	
ThreadLimit	Holds the limit for threads.	int	DsDdPriority	
ThreadName	Holds the priority level for the thread.	varchar(12)	DsDdPriority	
TotalCacheSpace	The overall size of the cache in blocks.	numeric(15)	DsStCache	
TotalDrives	Total number of drives/devices available in this stacker (for Distribution and Ingest FTP, 4MM and 8MM Tapes) (e.g., 1, 2).	smallint	DsStStacker DsStPreconfiguredStacker	
TotalRoSlots	Number of (cartridge) slots that are read-only.	smallint	DsStStacker DsStPreconfiguredStacker	
TotalRwSlots	Number of (cartridge) slots that is read-write.	smallint	DsStStacker DsStPreconfiguredStacker	
TotalSlots	Total number of slots available in this stacker (e.g., 10, 12, 20).	smallint	DsStStacker DsStPreconfiguredStacker	
TotalStagingSpace	The overall size of the staging space in blocks available for the staging disk.	numeric(15)	DsStStagingDiskServer	
TypeOperation	Examples: "ArStore", "ArRetrieve"	varchar(16)	DsStGenericRequest	
UncompressedFileSize	The uncompressed file size of the block space.	int	DsStCacheFile DsStDeleteLogCacheFile	
UsedFlag	A flag indicating whether a managed directory has been written to.	tinyint	DsStManagedCacheDir	
UserName	The Unix username used to ftp.	varchar(50)	DsStCacheManagerRequest DsSTFtpRequest	
UserProfile	Holds the profile ID.	varchar(50)	DsDdParameterList	
UserString	Free text string supplied by the user. Returned in the Distribution Email message as "UserString: <supplied string>"	varchar(255)	DsDdParameterList	

COLUMN	DESCRIPTION	TYPE	TABLE	VALID VALUES
VersionedDataType	The ESDT with the versionid appended to it used to specify a volume group.	varchar(24)	DsStPendingDelete DsStVolumeGroup	
VHighThreads	Number of service threads in the pool allocated at the priority vhigh.	int	DsStServiceThreadConfig	
VolumeEndDate	Date and time the volume group use was completed.	datetime	DsStVolumeGroup	
VolumeGroupId	(GOING AWAY)	numeric(9)	DsStCompressionStats DsStPendingDelete DsStVolumeGroup	
VolumeGroupPath	Location of the files associated with the volume group (e.g., /amass/volumegroupone).	varchar(255)	DsStVolumeGroup	
VolumeGroupSource	Original location of the volume group.	varchar(30)	DsStFile	
VolumeStartDate	Date and time the volume group use was created.	datetime	DsStVolumeGroup	
WarmStartCounter	The warmstart counter.	int	DsDdRequest	
WorkingDirectory	Directory on local host used for media distribution.	varchar(50)	DsStMediaRequest	
XpressThreads	Number of service threads in the pool allocated at the priority xpress.	int	DsStServiceThreadConfig	

3.1.4 Column Domains

Domains specify the ranges of values allowed for a given table column. Sybase supports the definition of specific domains to further limit the format of data for a given column. Sybase domains are, in effect, user-defined data types. There are no domains defined for STMGT.

3.1.5 Column Default Values

Defaults are used to supply a value for a column when one is Not defined at row insert time. Defaults defined in Sybase for the STMGT Subsystem database are described herein.

Column Name	Default Value
DsStCache.AvailableCacheSpace	0
DsStCacheFile.DeleteFlag	“N”
DsStGenericRequest.ErrorCode	0
DsStGenericRequest.ReqMgrNotified	0
DsStManagedCacheDir.UsedFlag	0

Column Name	Default Value
DsStPreconfiguredStacker.OnlineDrives	0
DsStPreconfiguredStacker.OnlineSlots	0
DsStPreconfiguredStacker.TotalDrives	0
DsStPreconfiguredStacker.TotalRoSlots	0
DsStPreconfiguredStacker.TotalRwSlots	0
DsStPreconfiguredStacker.StackerStatus	1
DsStStacker.OnlineDrives	0
DsStStacker.OnlineSlots	0
DsStStacker.TotalDrives	0
DsStStacker.TotalRoSlot	0
DsStStacker.TotalRwSlot	0
DsStStagingDisk.Retention	48

3.1.6 Referential Integrity Rules

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. There are No rules defined in Sybase for the STMGT and DDIST.

3.1.7 Views

Sybase allows the definition of views as a means of limiting an application or users access to data in a table or tables. Views create a logical table from columns found in one or more tables. Currently, there are No views defined for the STMGT and DDIST Subsystem database.

3.1.8 Declarative Integrity Constraints

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks automatically without requiring programming. Sybase is ANSI-92 compliant, therefore, its constraints support "restrict-only" operations. This means that a row cannot be deleted or updated if there are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations cannot be performed if a declarative integrity constraint has been used. Declarative integrity constraints used in the STMGT and DDIST Subsystem database are found here. Referential integrity is also maintained through use of user-defined triggers and procedures.

3.1.8.1 Dependencies on Table: DsDdGranule

Reference by List

Referenced by	Primary Key	Foreign Key
DsDdFile	RequestId GranuleId	RequestId GranuleId

3.1.8.2 Dependencies on Table: DsDdParameterList

Reference by List

Referenced by	Primary Key	Foreign Key
DsDdRequest	RequestId	RequestId

3.1.8.3 Dependencies on Table: DsDdRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsDdGranule	RequestId	RequestId
DsStRequestMedia	RequestId	RequestId
DsDdParameterList	RequestId	RequestId

3.1.8.4 Dependencies on Table: DsStCache

Reference by List

Referenced by	Primary Key	Foreign Key
DsStCacheFile	CacheId FileName	CacheId
DsStNotification DsStManagedCacheDir	CacheId CacheId DirectoryId	CacheId CacheId

3.1.8.5 Dependencies on Table: DsStCache

Reference by List

Referenced by	Primary Key	Foreign Key
DsStCacheFile	CacheId, FileName	CacheId
DsStManagedCacheDir	CacheId, DirName	CacheId

3.1.8.6 Dependencies on Table: DsStCacheFile

Reference by List

Referenced by	Primary Key	Foreign Key
DsStFileInfo	CacheId, UniqueFileName	CacheId, FileName
DsStFileLien	CacheId, FileName, OwnerName	CacheId, FileName
DsStFileLink	CacheId, DirName, FileName, LinkName	CacheId, FileName

3.1.8.7 Dependencies on Table: DsStConfigParameter

Reference by List

Referenced by	Primary Key	Foreign Key
DsStCache	CacheId	ServerId
DsStFile	RPCId FileIndex	RPCId VolumeGroupId
DsStFtpServer	ServerId	ServerId
DsStMediaServer	ServerId	ServerId
DsStArchiveServer	ServerId	ServerId
DsStStagingDiskServer	ServerId	ServerId
DsStServiceThreadConfig	PoolType ServerId	ServerId

3.1.8.8 Dependencies on Table: DsStDevice

Reference by List

Referenced by	Primary Key	Foreign Key
DsStMediaRequest	RPCId	MediaId StackerId ServerId DeviceName

3.1.8.9 Dependencies on Table: DsStErrorAttribute

Reference by List

Referenced by	Primary Key	Foreign Key
DsStFile	RPCId FileIndex	ErrorCode
DsStEventLog	EventLogId	EventNumber
DsStGenericRequest	RPCId	ErrorCode
DsStMediaServerContacted	RPCId ServerId	ErrorCode
DsStCancelledRequest	RPCId	ErrorCode

3.1.8.10 Dependencies on Table: DsStErrorText

Reference by List

Referenced by	Primary Key	Foreign Key
DsStErrorAttribute	ErrorCode	ErrorCode

3.1.8.11 Dependencies on Table: DsStFile

Reference by List

Referenced by	Primary Key	Foreign Key
DsStArchiveFileRequest	RPCId	OriginalRPCId FileIndex

3.1.8.12 Dependencies on Table: DsStGenericRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsStCacheManagerRequest	RPCId	RPCId
DsStFtpRequest	RPCId	RPCId
DsStMediaRequest	RPCId	RPCId
DsStPrintRequest	RPCId	RPCId
DsStArchiveRequest	RPCId	RPCId
DsStDependentRequest	DependentReqId	RPCId
DsStArchiveFileRequest	RPCId	RPCId

3.1.8.13 Dependencies on Table: DsStManagedCacheDir

Reference by List

Referenced by	Primary Key	Foreign Key
DsStFileLink	CacheId, DirName, FileName, LinkName	CacheId, DirName

Additionally, stored procedures identified in the PDL section will be added to the 311.

3.1.8.14 Dependencies on Table: DsStConfigParameter

Reference by List

Referenced by	Primary Key	Foreign Key
DsStDevice	ServerId	ServerId
DsStVolumeGroup	ServerId	ServerId
DsStSchedule	ServerId	ServerId

3.1.8.15 Dependencies on Table: DsStDevice

Reference by List

Referenced by	Primary Key	Foreign Key
DsStSchedule	DeviceName	DeviceName
DsStDeviceTape	DeviceName	DeviceName

3.1.8.16 Dependencies on Table: DsStErrorText

Reference by List

Referenced by	Primary Key	Foreign Key
DsStErrorAttribute	Mnemonic	Mnemonic

3.1.8.17 Dependencies on Table: DsStFtpRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsStDistributedFile	RequestId	RequestId

3.1.8.18 Dependencies on Table: DsStGenericRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsStArchiveRequest	RequestId	RequestId
DsStFtpRequest	RequestId	RequestId
DsStStgMonRequest	RequestId	RequestId

3.1.8.19 Dependencies on Table: DsStGenericRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsStArchiveRequest	RequestId	RequestId
DsStFtpRequest	RequestId	RequestId
DsStStagingDiskRequest	RequestId	RequestId
DsStStgMonRequest	RequestId	RequestId
DsStCancelledRequests	RpcId	RequestId
DsStDependency	DependentRpc	RequestId
DsStDependency	ActiveRpc	RequestId

3.1.8.20 Dependencies on Table: DsStStagingDisk

Reference by List

Referenced by	Primary Key	Foreign Key
DsStStagingDiskFile	DiskTag, Filename	DiskTag
DsStStagingDiskLien	DiskTag, OwnerName	DiskTag

3.1.8.21 Dependencies on Table: DsStStagingDiskRequest

Reference by List

Referenced by	Primary Key	Foreign Key
DsStStagingDisk	RequestId	DiskTag

Additionally, stored procedures identified in the PDL section will be added to the 311.

3.1.8.22 Dependencies on Table: DsStOffsite

Reference by List

Referenced by	Primary Key	Foreign Key

Referenced by	Primary Key	Foreign Key
DsStBackup	OffsiteId CreateDate	OffsiteId CreateDate
DsStRestore	OffsiteId CreateDate	OffsiteId CreateDate

3.1.8.23 Dependencies on Table: DsStServerType

Reference by List

Referenced by	Primary Key	Foreign Key
DsStConfigParameter	ServerType	ServerType

3.1.8.24 Dependencies on Table: DsStSlot

Reference by List

Referenced by	Primary Key	Foreign Key
DsStSchedule	StackerId SlotNumber	StackerId SlotNumber

3.1.8.25 Dependencies on Table: DsStStacker

Reference by List

Referenced by	Primary Key	Foreign Key
DsStDevice	StackerId	StackerId
DsStSlot	StackerId	StackerId
DsStSchedule	StackerId	StackerId
DsStStackerGroup	StackerId	StackerId

3.1.8.27 Dependencies on Table: DsStVolumeGroup

Reference by List

Referenced by	Primary Key	Foreign Key
DsStOffsite	ServerId VolumeGroupName VolumeStartDate	ServerId VolumeGroupName VolumeStartDate

3.1.9 Triggers

Sybase supports the enforcement of business rules via the use of triggers. A trigger is best defined as a set of activities or checks that should be performed automatically whenever a row is inserted, updated, or deleted from a given table. Sybase version allows the definition of insert, update, and delete triggers at the table level. A summary listing of the triggers in the STMGT Subsystem database are given in Table 3-58 along with the database table it is associated with and a brief description of the purpose for the trigger. A listing of the code follows this listing.

Table 3-58. Summary List of Triggers

Table	Trigger	User Defined	Description
DsDdRequest	DsDdRDeleteTrig	Yes	DsDdRequest table delete trigger
DsStBackup	DsStBDeleteTrig	Yes	Delete trigger on the DsStBackup table that logs deletions to aNother table using a cursor if DELETE has more than 1 row. TABLES ACCESSED:DsStBackup DsStBackupHistory RETURNS:Status (Success = 0)
DsStCacheFile	DsStCFInsertTrig	Yes	Insert trigger for the DsStCacheFile table. This trigger will update AvailableCacheSpace in DsStConfigParameter. TABLES ACCESSED: DsStConfigParameter RETURNS:Status (Success = 0)

3.1.10 Stored Procedures

Sybase also supports business rules via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business rules and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or aNother stored procedure. A summary list of the stored procedures in the STMGT Subsystem database are given in Table 3-59 followed by listings of the code.

Table 3-59. Summary List of Procedures (1 of 9)

NAME
DsDdFDelete
DsDdFInsert
DsDdFSelectAll
DsDdFSelectAllFiles
DsDdFSelectByReqGranSrc
DsDdFUpdate
DsDdGDelete
DsDdGInsert
DsDdGSelectAll
DsDdGSelectAllGranules
DsDdGSelectByReqGran
DsDdGUpdate
DsDdPLAuxUpdate

Table 3-59. Summary List of Procedures (2 of 9)

NAME
DsDdPLDelete
DsDdPLInsert
DsDdPLSelectAll
DsDdPLSelectByReq
DsDdPLUpdate
DsDdPTDelete
DsDdPTGetLimit
DsDdPTInsert
DsDdPTSetLimit
DsDdRDelete
DsDdRInsert
DsDdRSelectAll
DsDdRSelectAllReq
DsDdRSelectByRequestId
DsDdRSelectByState
DsDdRSelectByTape
DsDdRSelectTape
DsDdRTSelectByReq
DsDdRUpdate
DsDdRUpdateOrdState
DsDdRUpdateState
DsDdSGInsert
DsDdSGSelectAll
DsDdSGUpdateGenValue
DsStAFRInsert
DsStAFRSelect
DsStARGetNextReadRequest
DsStARGetNextRequest
DsStARGetNextWriteRequest
DsStARInsert
DsStARSelectByRPCId
DsStASSelectByServerId
DsStBDelete
DsStBDeleteComplete
DsStBInsert
DsStBSelect
DsStBSelectByName
DsStBUpdBackupStageAndStatus
DsStBUpdOffsiteStageAndStatus
DsStBUpdatePriority
DsStBUpdateStillStoring

Table 3-59. Summary List of Procedures (3 of 9)

NAME
DsStCFSelectByCacheId
DsStCMCreateManDir
DsStCMDeleteByOwner
DsStCMDeleteCache
DsStCMDeleteExpiredLiens
DsStCMDeleteFile
DsStCMGetNextRequest
DsStCMIsCached
DsStCMIsLinked
DsStCMLinkToCache
DsStCMMakeSpace
DsStCMMarkDeleted
DsStCMRInsert
DsStCMRRoute
DsStCMRSelect
DsStCMRTriggerMakeSpace
DsStCMRUpdate
DsStCMRUpdateByOper
DsStCMReleaseLien
DsStCMRemoveLink
DsStCMRemoveManDir
DsStCMReserveCache
DsStCMReserveFile
DsStCMSelectCache
DsStCMSelectCacheDirs
DsStCMSelectCacheFile
DsStCMSelectCacheFiles
DsStCMSelectCacheId
DsStCMSelectCacheLinks
DsStCMSelectExpiredDirs
DsStCMSelectExpiredLinks
DsStCMSelectFiles
DsStCMSelectNextJob
DsStCMSelectNextRequest
DsStCMSelectNextRequestByOper
DsStCMUnMarkDeleted
DsStCMUpdateFileSize
DsStCMUpdateFileState
DsStCMUpdateLastAccess
DsStCPDelete
DsStCPGetLocalStagDiskServer

Table 3-59. Summary List of Procedures (4 of 9)

NAME
DsStCPInsert
DsStCPInsertArchiveServer
DsStCPInsertCacheMgrServer
DsStCPInsertFtpServer
DsStCPInsertMediaServer
DsStCPInsertStagingDiskServer
DsStCPRegisterServer
DsStCPSelect
DsStCPSelectById
DsStCPSelectByName
DsStCPSelectByType
DsStCPSelectServerId
DsStCPSelectServerIdByTypeHWCI
DsStCPUnregisterServer
DsStCPUpdate
DsStCPUpdateArchiveServer
DsStCPUpdateCacheMgrServer
DsStCPUpdateFtpServer
DsStCPUpdateMediaServer
DsStCPUpdateStagingDiskServer
DsStCRSelectRPCId
DsStCSInsert
DsStCSSelect
DsStCSUpdate
DsStCSelect
DsStCSelectByServerId
DsStChooseCandidateServer
DsStDAllocateDevice
DsStDAllocateDeviceForIngest
DsStDDeallocateDevice
DsStDDelete
DsStDInsert
DsStDIsDeviceAllocated
DsStDRInsert
DsStDRSelectRPCId
DsStDSelect
DsStDSelectByDeviceName
DsStDSelectByMediaId
DsStDSelectByRequestId
DsStDSelectByStackerId
DsStDSelectElemNo

Table 3-59. Summary List of Procedures (5 of 9)

NAME
DsStDSelectIsDriveOnline
DsStDSelectIsMediaInDrive
DsStDSelectOnlineByStackerId
DsStDUpdateDevice
DsStDUpdateIsDriveAllocated
DsStDUpdateIsDriveOnline
DsStDUpdateIsMediaInDrive
DsStDetermineRoutedErrorCode
DsStEAInsert
DsStEASelectSeverityByCode
DsStEATSelectByCode
DsStEATSelectByMnemonic
DsStELDeleteByNum
DsStELInsert
DsStELSelectAny
DsStELSelectByTime
DsStETInsert
DsStFInsert
DsStFRCheckpointExpiration
DsStFRCheckpointLoopIndex
DsStFRCheckpointPath
DsStFRGetNextRequest
DsStFRInsert
DsStFRSelectRpcId
DsStFSSelectById
DsStFSSelectByName
DsStFSelect
DsStFSelectByRPCId
DsStFUpdLastArchiveVolGroup
DsStFUpdLastBackupVolGroup
DsStFUpdLastOffsiteVolGroup
DsStFUpdRetrievedFileSize
DsStFUpdateChecksum
DsStFUpdateCkPtState
DsStFUpdateDiskTag
DsStFUpdateEventMsg
DsStFUpdateFailure
DsStFUpdateFileLocation
DsStFUpdateFileSize
DsStFUpdateServerId
DsStFUpdateSource

Table 3-59. Summary List of Procedures (6 of 9)

NAME
DsStGRAckCancel
DsStGRCancel
DsStGRClaimRequest
DsStGRCleanup
DsStGRCleanupSD
DsStGRDelete
DsStGRDeleteById
DsStGREnableBDRequests
DsStGRFUpdateCkPtState
DsStGRFUpdateFailure
DsStGRGetNewlyCancelled
DsStGRInsert
DsStGRLogProgress
DsStGRMapLogicalArchiveId
DsStGRRequestCompleted
DsStGRRestartNotification
DsStGRSelectCancelled
DsStGRSelectErrorCode
DsStGRSelectFiltered
DsStGRSelectNextRequest
DsStGRSelectNotNotified
DsStGRSelectRPCId
DsStGRSelectUniqOperation
DsStGRSelectUniqSubmitter
DsStGRSuspend
DsStGRSuspendIfDependent
DsStGRUpdRequestProcessState
DsStGRUpdateCkPtState
DsStGRUpdateNotifiedFlag
DsStGRUpdateRpcNotified
DsStGRUpdateStatus
DsStGetCandidateServers
DsStGetPullAreaLocation
DsStMInsert
DsStMRGetNextRequest
DsStMRInsert
DsStMRSelectByRPCId
DsStMRSelectReqByServerId
DsStMRSelectWorkDirectory
DsStMRUpdWorkDirectory
DsStMRUpdateMediaOperation

Table 3-59. Summary List of Procedures (7 of 9)

NAME
DsStMRUpdateMediaStagingDisk
DsStMRUpdateRpcId
DsStMRUpdateSourceStagingDisk
DsStMSDelete
DsStMSDeleteBySetId
DsStMSInsert
DsStMSSNarrowCandidates
DsStMSSelect
DsStMSSelectById
DsStMSSelectByMediaId
DsStMSSelectByName
DsStMSSelectByServerType
DsStMSSelectBySetId
DsStMSelectByMediaId
DsStMSelectBySetId
DsStMUpdateMediaUse
DsStMUpdateStatus
DsStMediaIngest
DsStMultiServerScheduling
DsStPCDSelectByModel
DsStPCDSelectByServerType
DsStPCSSelectByServerType
DsStPCSSelectByStackerModel
DsStPDDeleteComplete
DsStPDEnableEntries
DsStPDFileCancel
DsStPDFileRelease
DsStPDFileSuspend
DsStPDInsertComplete
DsStPDSelectBatchDeleteFiles
DsStPDSelectFailed
DsStPDSelectResumeFiles
DsStPDSelectSummed
DsStPDTestComplete
DsStPDUpdBatchStatus
DsStPDUpdStatus
DsStPRSelectByRPCId
DsStProcNumObjects
DsStRMInsert
DsStSDAllocateByBlocks
DsStSDAllocateDisk

Table 3-59. Summary List of Procedures (8 of 9)

NAME
DsStSDAttachDisk
DsStSDColdStart
DsStSDDecrementDiskSpace
DsStSDDeleteByDiskPath
DsStSDDeleteByDiskTag
DsStSDDetachDisk
DsStSDExtendDisk
DsStSDFSelectFiles
DsStSDInsertFile
DsStSDRInsert
DsStSDRSelectAllocatedDisk
DsStSDRSelectByRPCId
DsStSDRSelectNextRequest
DsStSDRemoveFile
DsStSDRenameFile
DsStSDSSelectById
DsStSDSelectDisk
DsStSDSelectDiskById
DsStSDSelectDiskByPath
DsStSDSelectSourceFiles
DsStSDUpdateOwnerName
DsStSDUpdatePersistent
DsStSKDelete
DsStSKInsert
DsStSKSelect
DsStSKSelectAll
DsStSKSelectByServerId
DsStSKUpdate
DsStSKUpdateIsStackerOnline
DsStSLCheckOpenSlot
DsStSLInsert
DsStSLMoveDriveSlot
DsStSLMoveSlotDrive
DsStSLSelectByRequestId
DsStSLSelectByStackerId
DsStSLSelectElemNo
DsStSLSelectOnlineByStackerId
DsStSLSelectOpenSlotDrive
DsStSLUpdateIsMediaInSlot
DsStSLUpdateIsSlotAllocated
DsStSLUpdateIsSlotOnline

Table 3-59. Summary List of Procedures (9 of 9)

NAME
DsStSLUpdateMediaId
DsStSTCInsert
DsStSTCSelectForServer
DsStSTCUpdate
DsStSTSelect
DsStSTUpdateMaxReroutes
DsStVGGetVolumeGroupInfo
DsStVGInsert
DsStVGSelect
DsStVGSelectById
DsStVGSelectDataType
DsStVGSelectHistory
DsStVGSelectServerId
datawarning
logdump
logwarning

3.2 Flat File Usage

A flat file is an operating system file that is written and subsequently read serially, generally independent of other files that exist, and usually static in nature. There are cases when the implementation of persistent data is better suited to a flat file than to a database (e.g., system configuration data, external interface data). There are No flat files used by the STMGT/DDIST Subsystems. Configuration information is stored in the STMGT and DDIST database. Additional configuration information may be found in the configuration registry.

3.2.1 File Descriptions

Not Applicable

3.2.2 Field Specifications

Not Applicable

3.2.3 Domain Definitions

Not Applicable

4. Performance and Tuning Factors

4.1 Indexes

An index provides a means of locating a row in a database table based on the value of a specific column(s), without having to scan all data in the table. When properly implemented, indexes can significantly decrease the time it takes to retrieve data, thereby increasing performance. Sybase allows the definition of two types of indexes, clustered and non-clustered.

In a clustered index, the rows in a database table are physically stored in sequence-determined by the index. Clustered indexes are particularly useful, when the data is frequently retrieved in sequential order. Only one clustered index may be defined per table.

Non-clustered indexes differ from their clustered counterpart, in that, data is not physically stored in sorted order, newly added rows are stored at the end of the related database table.

A key of the types of indexes found in STMGT is provided in Table 4-1 Index Type Key. Alist a description of each of the defined indexes is given in Table 4-2 Index List.

Table 4-1. Index Type Key

Index Type Key	Description
PK	Primary Key
FK	Foreign Key
U	Unique - Only one for the column code combination
C	Clustered or Non-clustered index
Sort	ASC (ascending) of DESC (descending) order

Table 4-2. Index List (1 of 4)

Table	Index Code	Column Code	P	F	U	C	Sort
DsDdFile	pk_dsddfile	requestid, granuleid, sourcename	YES	NO	YES	YES	ASC
DsDdGranule	pk_granule	requestid, granuleid	YES	NO	YES	YES	ASC
DsDdParameterlist	pk_dsddparameterlist	requestid	YES	NO	YES	YES	ASC
DsDdPriorityThread	pk_prioritythread	threadname	YES	NO	YES	YES	ASC
DsDdRequest	pk_request	requestid	YES	NO	YES	YES	ASC
DsDdServerGeneric	pk_dsddservergeneric	genericname	YES	NO	YES	YES	ASC
DsStArchiveFileRequest	pk_dsstarchivefilerequest	rpcid	YES	NO	YES	YES	ASC
DsStArchiveRequest	pk_dsstarchiverequest	rpcid	YES	NO	YES	YES	ASC
DsStArchiveServer	pk_dsstarchiveserver	serverid	YES	NO	YES	YES	ASC

Table 4-2. Index List (2 of 4)

Table	Index Code	Column Code	P	F	U	C	Sort
DsStBackup	sk_dsstbstillstoring	filename	YES	NO	YES	YES	ASC
DsStBackup	pk_dsstbackup	stillstoring	NO	NO	NO	NO	ASC
DsStCDROMServer	pk_dsstcdromserver	serverid	YES	NO	YES	YES	ASC
DsStCache	pk_dsstcache	cacheid	YES	NO	YES	YES	ASC
DsStCache	sk_dsstcmanageddirectoryarea	manageddirectoryarea	NO	NO	NO	NO	ASC
DsStCache	sk_dsstcserverid	serverid	NO	NO	YES	NO	ASC
DsStCacheFile	pk_dsstcachefile	cacheid, filename	YES	NO	YES	YES	ASC
DsStCacheFile	sk_dsstcfstate	state	NO	NO	NO	NO	ASC
DsStCacheManagerRequest	pk_dsstcachemanrequest	rpcid	YES	NO	YES	YES	ASC
DsStCancelledRequest	pk_dsstcancelledrequest	rpcid	YES	NO	YES	YES	ASC
DsStCompressionStats	sk_dsstcsvolgrpidcomtype	volumegroupid, compressiontype	NO	NO	YES	NO	ASC
DsStCompressionStats	pk_dsstcompressionstats	compressionid	YES	NO	YES	YES	ASC
DsStConfigParameter	pk_dsstconfigparameter	serverid	YES	NO	YES	YES	ASC
DsStConfigParameter	sk_dsstcpservername	servername	NO	NO	YES	NO	ASC
DsStConfigParameter	sk_dsstcpservertype	servertype	NO	NO	NO	NO	ASC
DsStConfigParameter	sk_dsstcphwci	hwci	NO	NO	NO	NO	ASC
DsStDependentRequest	pk_dsstdependentrequest	dependreqid	YES	NO	YES	YES	ASC
DsStDependentRequest	sk_dsstdractiverpcid	activerpcid	NO	NO	NO	NO	ASC
DsStDependentRequest	sk_dsstdrrpcid	rpcid	NO	NO	NO	NO	ASC
DsStDevice	sk_dsstddrivenumber	drivenumber	NO	NO	NO	NO	ASC
DsStDevice	sk_dsstdmediaid	mediaid	NO	NO	NO	NO	ASC
DsStDevice	sk_dsstdstackerid	stackerid	NO	NO	NO	NO	ASC
DsStDevice	sk_dsstdservidpathname	serverid, pathname	NO	NO	YES	NO	ASC
DsStDevice	pk_dsstdevice	devicename	YES	NO	YES	YES	ASC
DsStErrorAttribute	pk_dssterrorattribute	errorcode	YES	NO	YES	YES	ASC
DsStErrorText	sk_dsstetmnemonic	mnemonic	NO	NO	YES	NO	ASC
DsStErrorText	pk_dssterrortext	errorcode	YES	NO	YES	YES	ASC
DsStEventLog	pk_dssteventlog	eventlogid	YES	NO	YES	YES	ASC
DsStFile	pk_dsstfile	rpcid, fileindex	YES	NO	YES	YES	ASC
DsStFileLien	sk_dsstflfilenamecacheid	filename, cacheid	NO	NO	NO	NO	ASC
DsStFileLien	pk_dsstfilelien	filelienid	YES	NO	YES	YES	ASC
DsStFileLink	sk_dsstflinkcacheid	cacheid	NO	NO	NO	NO	ASC
DsStFileLink	sk_dsstflinkfilename	filename	NO	NO	NO	NO	ASC
DsStFileLink	sk_dsstfldirectorylink	directoryid linkname	NO	NO	YES	NO	ASC
DsStFtpRequest	pk_dsstftprequest	rpcid	YES	NO	YES	YES	ASC
DsStFtpServer	pk_dsstftpserver	serverid	YES	NO	YES	YES	ASC

Table 4-2. Index List (3 of 4)

Table	Index Code	Column Code	P	F	U	C	Sort
DsStGenericRequest	pk_dsstgenericrequest	rpcid	YES	NO	YES	YES	ASC
DsStGenericRequest	sk_dsstgrcheckpointstate	checkpointstate	NO	NO	NO	NO	ASC
DsStGenericRequest	sk_dsstgrprocessingstate	processingstate	NO	NO	NO	NO	ASC
DsStGenericRequest	sk_dsstgrreqmgrnotified	reqmgrnotified	NO	NO	NO	NO	ASC
DsStGenericRequest	sk_dsstgrserverid	serverid	NO	NO	NO	NO	ASC
DsStGenericRequest	sk_dsstgrtypeoperation	typeoperation	NO	NO	NO	NO	ASC
DsStManagedCacheDir	sk_dsstmcdcacheid	cacheid	NO	NO	NO	NO	ASC
DsStManagedCacheDir	sk_dsstmcddirectoryname	directoryname	NO	NO	NO	NO	ASC
DsStManagedCacheDir	sk_dsstmcddiridcacheid	directoryid, cacheid	NO	NO	YES	NO	ASC
DsStManagedCacheDir	pk_dsstmanagedcachedir	directoryid	YES	NO	YES	YES	ASC
DsStMedia	pk_dssmmedia	mediaid	YES	NO	YES	YES	ASC
DsStMediaRequest	pk_dssmmediarequest	rpcid	YES	NO	YES	YES	ASC
DsStMediaRequest	sk_dsstmrexternalrequestid	externalrequestid	NO	NO	NO	NO	ASC
DsStMediaRequest	sk_dsstmrstackerid	stackerid	NO	NO	NO	NO	ASC
DsStMediaServerContacted	pk_dsstmediaservercontacted	rpcid	YES	NO	YES	YES	ASC
DsStMediaServer	pk_dssmmediaserver	server	YES	NO	YES	YES	ASC
DsStMediaSet	pk_dsstmediaset	mediasetid, mediaset	YES	NO	YES	YES	ASC
DsStNotification	pk_dsstnotification	cacheid	YES	NO	YES	YES	ASC
DsStPendingDelete	pk_dsstpendingdelete	versioneddatatype, filename	YES	NO	YES	YES	ASC
DsStPendingReservations	sk_dsstprcacheid	cacheid	NO	NO	NO	NO	ASC
DsStPendingReservations	sk_dsstprrpcid	rpcid	NO	NO	NO	NO	ASC
DsStPendingReservations	pk_dsstpendingreservations	pendingid	YES	NO	YES	YES	ASC
DsStPreconfiguredDevice	pk_dsstpreconfigureddevice	model	YES	NO	YES	YES	ASC
DsStPreconfiguredStacker	pk_dsstpreconfiguredstacker	stackermodel	YES	NO	YES	YES	ASC
DsStPrintRequest	pk_dsstprintrequest	rpcid	YES	NO	YES	YES	ASC
DsStRequestMedia	pk_dsstrequestmedia	requestmedia	YES	NO	YES	YES	ASC
DsStServerType	pk_dsstservertype	servertype	YES	NO	YES	YES	ASC
DsStServiceThreadConfig	pk_dsstservicethreadconfig	servicethreadconfig	YES	NO	YES	YES	ASC
DsStSlot	sk_dsstsslotnumber	slotnumber	NO	NO	NO	NO	ASC
DsStSlot	sk_dsstsstackerid	stackerid	NO	NO	NO	NO	ASC
DsStSlot	sk_dsstsmediaid	mediaid	NO	NO	NO	NO	ASC
DsStSlot	pk_dsstslot	slotid	YES	NO	YES	YES	ASC
DsStStacker	pk_dsststackerid	stackerid	YES	NO	YES	YES	ASC
DsStStacker	sk_dsstservidstackpath	serverid, stackerpath	NO	NO	YES	NO	ASC

Table 4-2. Index List (4 of 4)

Table	Index Code	Column Code	P	F	U	C	Sort
DsStStagingDisk	pk_dsststagingdisk	stagingdisk	YES	NO	YES	YES	ASC
DsStStagingDisk	sk_dsstsddisktag	disktag	NO	NO	YES	NO	ASC
DsStStagingDisk	sk_dsstsdserverid	serverid	NO	NO	NO	NO	ASC
DsStStagingDiskFile	pk_dsststagingdiskfile	disktag, filename	YES	NO	YES	YES	ASC
DsStStagingDiskLien	pk_dsststagingdisklien	stagdisklienid	YES	NO	YES	YES	ASC
DsStStagingDiskLien	sk_dsstsdldisktag	disktag	NO	NO	NO	NO	ASC
DsStStagingDiskRequest	pk_dsststaagingdiskrequest	rpcid	YES	NO	YES	YES	ASC
DsStStagingDiskServer	pk_dsststagingdiskserver	serverid	YES	NO	YES	YES	ASC
DsStStagingDiskServer	sk_dsstsdsrootpath	rootpath	NO	NO	YES	NO	ASC
DsStVolumeGroup	pk_dsstvolumegroup	volumegroupid	YES	NO	YES	YES	ASC
DsStVolumeGroup	sk_dsstvgdatatypeenddate	versioneddatatype volumeenddate	NO	NO	YES	NO	ASC
DsStVolumeGroup	sk_dsstvgserverid	serverid	NO	NO	NO	NO	ASC
EcDbDatabaseVersions	pk_ecdbversions	ecdbschemaversionid ecdbdropversion	YES	NO	YES	YES	ASC

Table 4-3. Segment Descriptions

Segment Name	Description
default	Default data segment used if No other segment specified in the create statement.
logsegment	SYSLOGS, Transaction Logs
systemsegment	System tables and indexes.

4.2 Caches

A cache is a block of memory that is used by Sybase to retain and manage pages that are currently being processed. By default, each database contains three caches:

Data cache – retains most recently accessed data and index pages

Procedure cache – retains most recently accessed stored procedure pages

User transaction log cache – transaction log pages that have Not yet been written to disk for each user

The size of each of these default caches is a confugrable item which must be managed on a per DAAC basis. These caches may be increased or decreased by the DAAC DBA as needed.

The data cache can be further subdivided into named caches. A *named cache* is a block of memory that is named and used by the DBMS to store data pages for select tables and/or indexes. Assigning a database table to named cache causes accessed pages to be loaded into memory and retained. The named cache does Not need to be allocated to accommodate the entire database table since the DBMS manages the cache according to use. Named caches greatly

increase performance by eliminating the time associated for disk input and output (I/O). There are No named caches that are currently defined for the STMGTSubsystem database. Named caches may be defined as the memory usage of the STMGT database becomes better known and the DAACs move into an operational environment. As named caches are defined this portion of the document will be updated.

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5. Database Security

5.1 Approach

The database security discussed within this section is bounded to security implementation within the Sybase SQL Server DBMS. A Sybase general approach to security is adopted as illustrated in Figure 5-1.

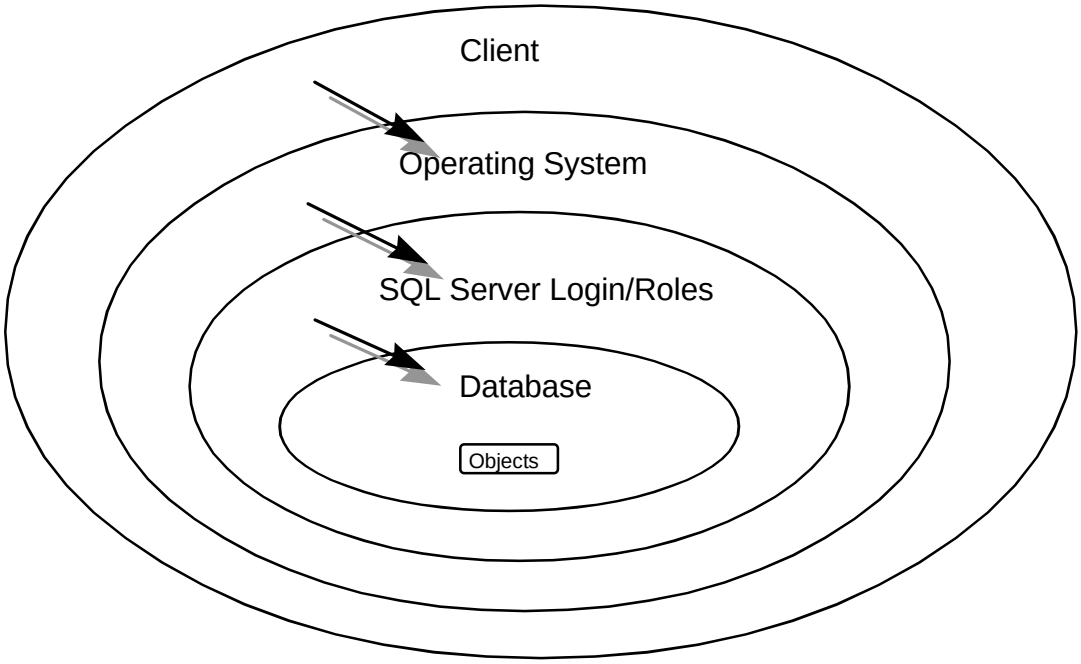

Figure 5-1. Sybase General Approach to SQL Server Security[1]

The client (user) requires a SQL Server login to access the DBMS The login is assigned to a user with certain related permissions for gaining access to particular objects (e.g., database tables, views, commands) within the database. The System Administrator may grant or revoke objects permissions for a login individually or based on defined group or roles.

Groups are a means of logically associating users with similar data access needs. Once a group has been defined, object and command permissions can be granted to that group. A user who is member of a group inherits all of the permissions granted to that group. No groups have been initially defined in the STMGT Subsystem "default database. The DAACs should define

[1] Reference Sybase Student Guide: *Advanced SQL Server Administration*.

database groups to support the database security requirements of their individual DAACs. Security for local DAAC users should be controlled by assigning each user to the appropriate group.

Roles were introduced in Sybase to allow a structured means for granting users the permissions needed to perform standard database administration activities and also provide a means for easily identifying such users. There are six pre-defined roles that may be assigned to a user. A definition of each of these roles follows, as well as a description of the types of activities that may be performed by each role.

System Administrator (*sa_role*): This role is used to grant a specific user permissions needed to perform standard system administrator duties including:

- **installing SQL server and specific SQL server modules**
- **managing the allocation of physical storage**
- **tuning configuration parameters**
- **creating databases**

Site Security Officer (*sso_role*): This role is used to grant a specific user the permissions needed to maintain SQL server security including:

- **adding server logins**
- **administrating passwords**
- **managing the audit system**
- **granting users all roles except the *sa_role***

Operator (*oper_role*): This role is used to grant a specific user the permissions needed to perform standard functions for the database including:

- **dumping transactions and databases**
- **loading transactions and databases**

Navigator (*navigator_role*): This role is used to grant a specific user the permissions needed to manage the navigation server.

Replication (*replication_role*): This role is used to grant a specific user the permissions needed to manage the replication server.

Sybase Technical Support (*sybase_ts_role*): This role is used to grant a specific user the permissions needed to execute *database consistency checker (dbcc),* a Sybase supplied utility supporting commands that are Normally outside of the realm of routine system administrator activities.

The DAACs should review these roles and assign them to the appropriate login and/or groups.

5.2 Login/Group Object Permissions

During initial database installation logins used by the ECS custom code were created and permissions assigned for access to the STMGT Subsystem database. In addition, special database installation login, stmgt_role, was created to support database installation needs. For each login, the level of access is limited to that associated with their login, group or assigned group/role. Object Permissions are set within the installation scripts of the STMGT Subsystem for each object and group/role.

Permissions are identified in Table 5-1. A specification of the object permissions is contained in Table 5-2.

Table 5-1. Permission Key

Permission	Description
A	All
S	Select
I	Insert
U	Update
D	Delete
E	Execute

Table 5-2. Group Specifications

Group/Role	SYBASE LOGIN	Object	A	S	I	U	D	E
software	EcDsDdistGui	All	X					
software	EcDsDistributionServer	All	X					
software	EcDsSt4MMServer	All	X					
software	EcDsSt8MMServer	All	X					
software	EcDsStArchiveServer	All	X					
software	EcDsStCDROMServer	All	X					
software	EcDsStD3Server	All	X					
software	EcDsStFtpDisServer	All	X					
software	EcDsStIngestFtpServer	All	X					
software	EcDsStmgtGui	All	X					
software	EcDsStPrintServer	All	X					
software	EcDsStPullMonitorServer	All	X					
software	EcDsStStagingDiskServer	All	X					
software	EcDsStStagingMonitorServer	All	X					
NONE	sa	All	X					
sa_role	stmgt_role	All	X					

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6. Scripts

Script files in this section may be found in the directory /ecs/formal/DSS/stmgmt/src/database.

6.1 Installation Scripts

Any scripts used to support installation of the STMGT Subsystem database are described in Table 6-1.

Table 6-1. Installation Scripts

Script File	Description
EcDsStDbLogin	Adds unix Logins pre-defined for STMGT applications to the SQL server.
EcDsStDbUser	Adds user IDs pre-defined for STMGT applications to the SQL Server.
EcDsStDbBuild	Create and empty database and pre-loads initialization data.
EcDsStDbPatch	Upgrades a Release 4.0 Drop 4P database to Drop 4PL

6.2 De-Installation Scripts

No de-installation scripts are provided for the STMGT subsystem database.

6.3 Backup and Recovery Scripts

Any scripts used to facilitate backup or recovery of the STMGT Subsystem database are described in Table 6-2.

Table 6-2. Backup and Recovery Scripts

Script File	Description
EcDsStDbDump	Dumps the database to a backup device
EcDsStDbLoad	Restores the database from a backup copy.

6.4 Miscellaneous Scripts

There are no miscellaneous scripts applicable to the STMGT Subsystem.

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Appendix A. Storage Management Entity Relationship Diagrams

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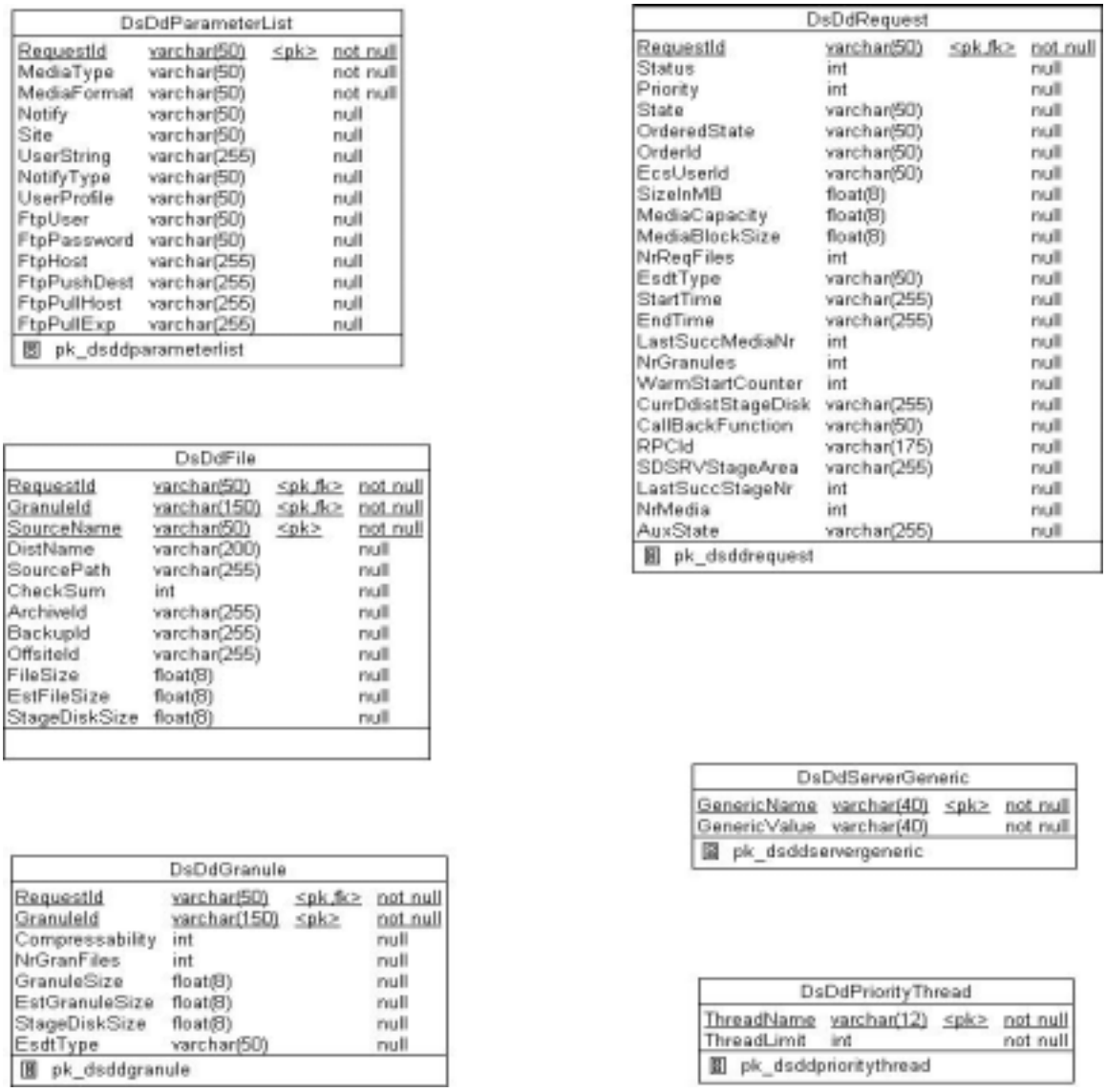

Figure A-1. Data Distribution (DDist)

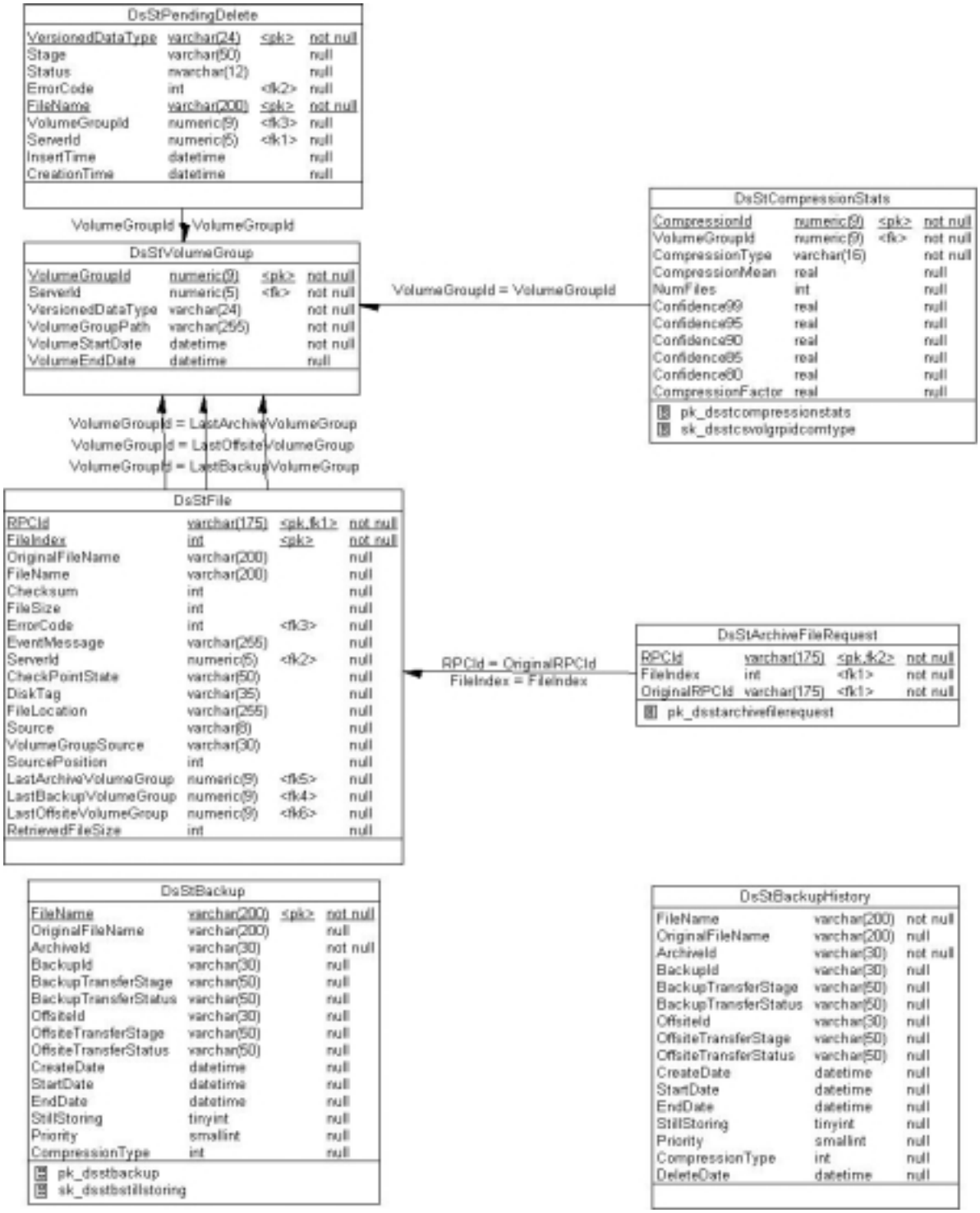

Figure A-2. Archive Services

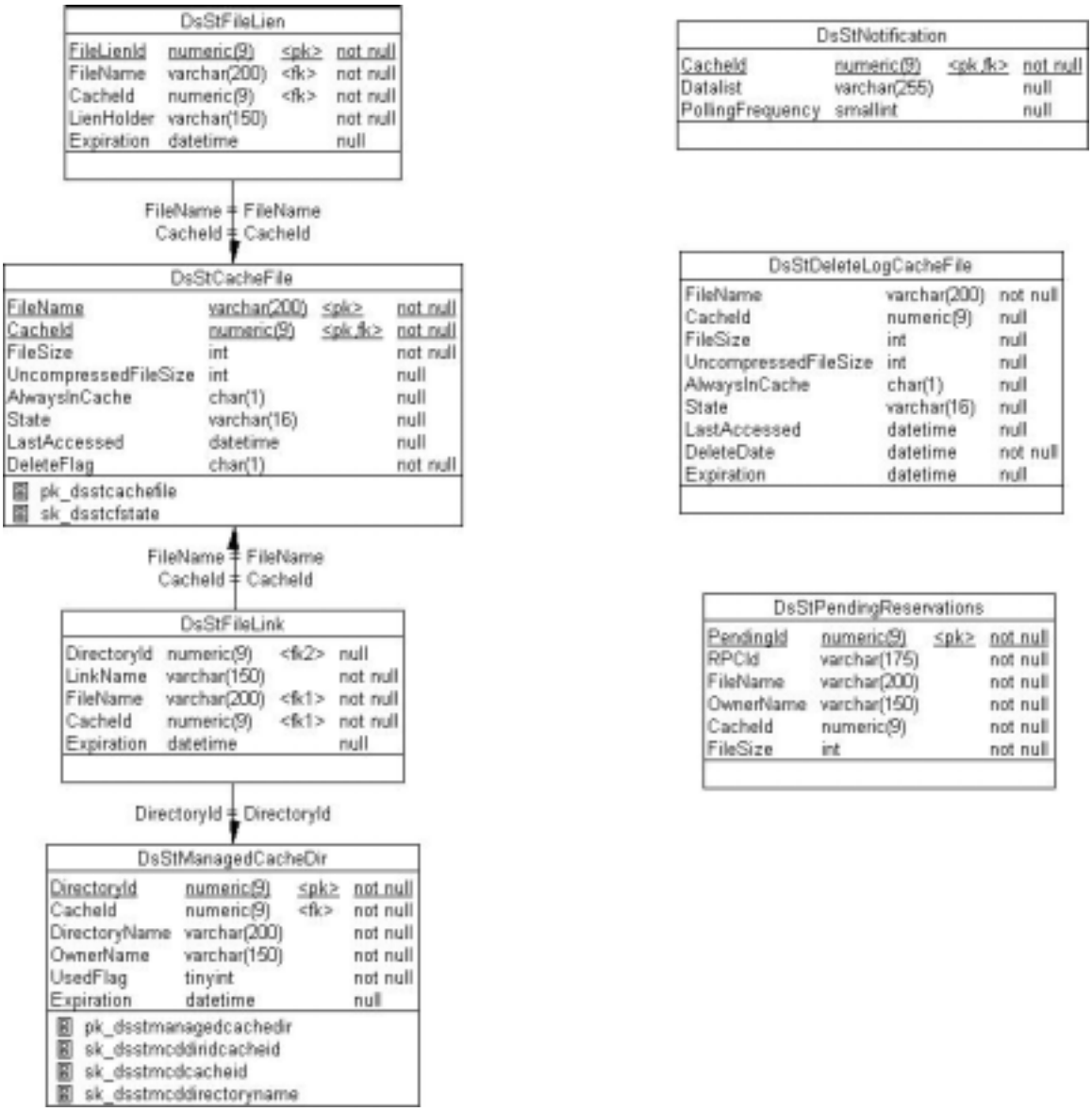

Figure A-3. Cache Management

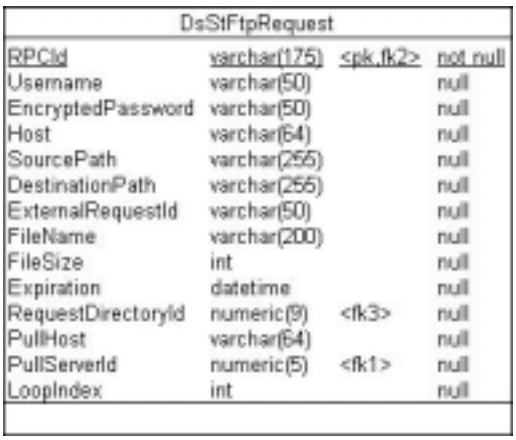

Figure A-4. FTP Services

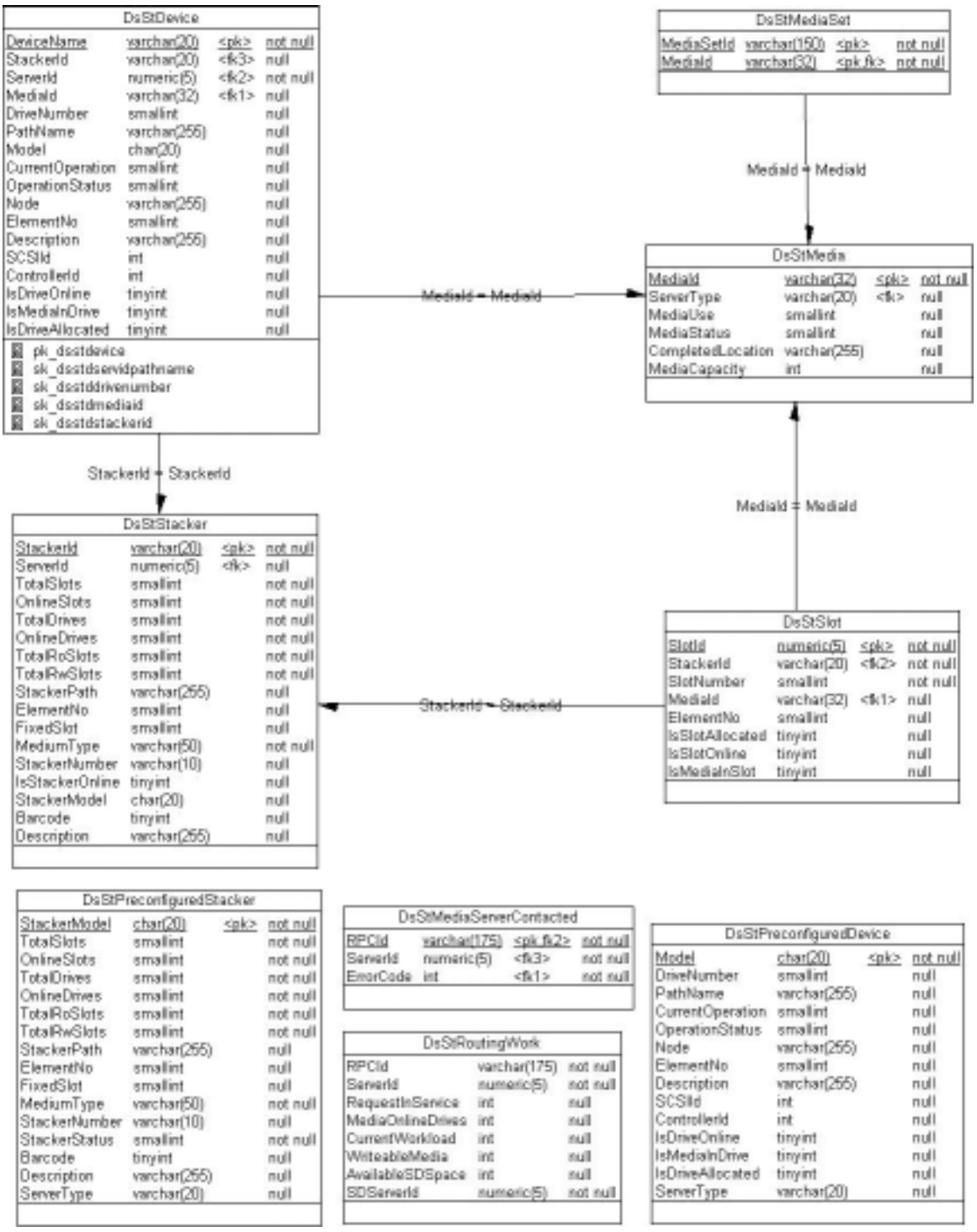

Figure A-5. Media Operations

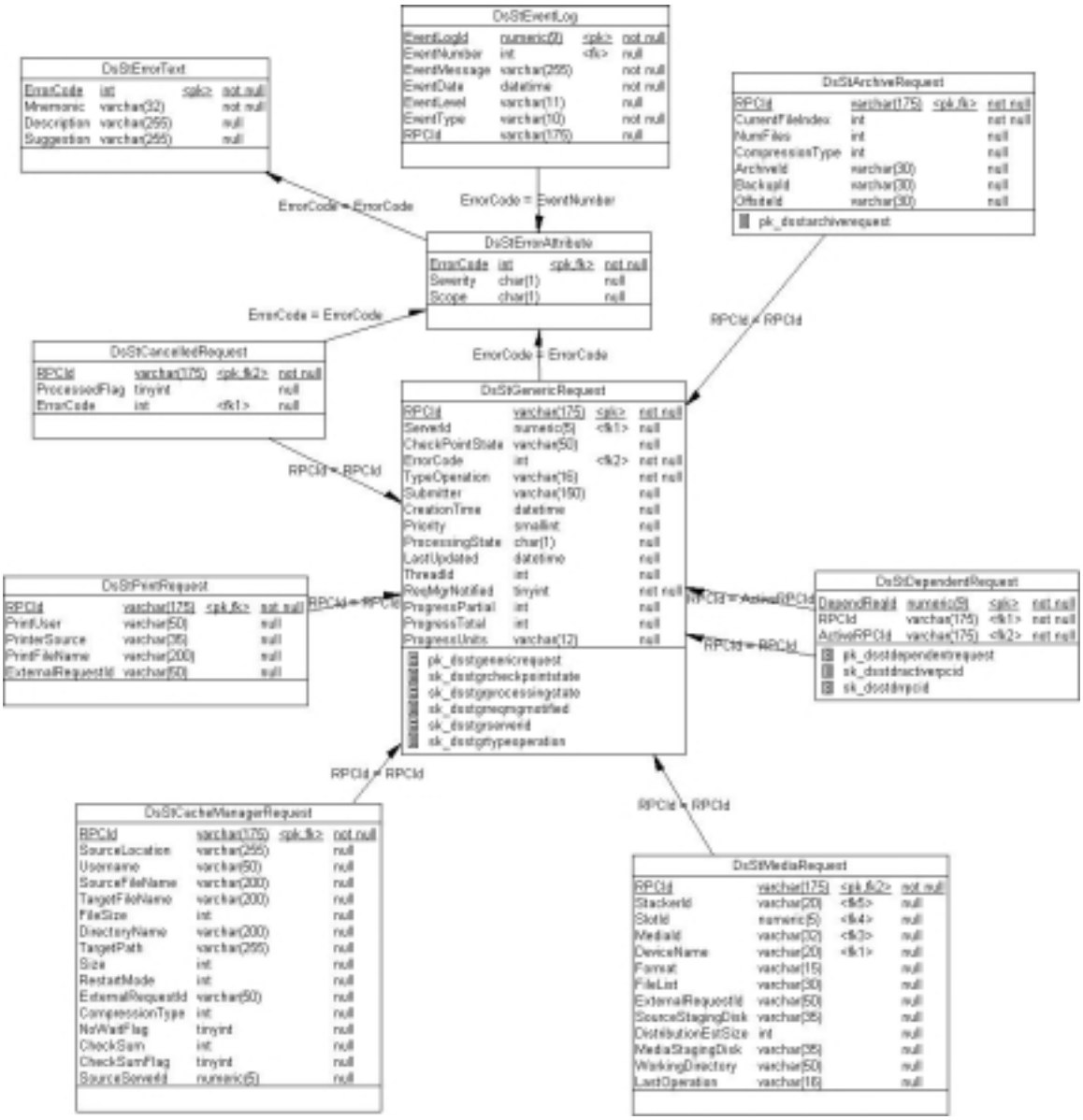

Figure A-6. Request Handling

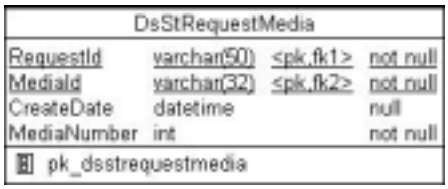

Figure A-7. Request Operations

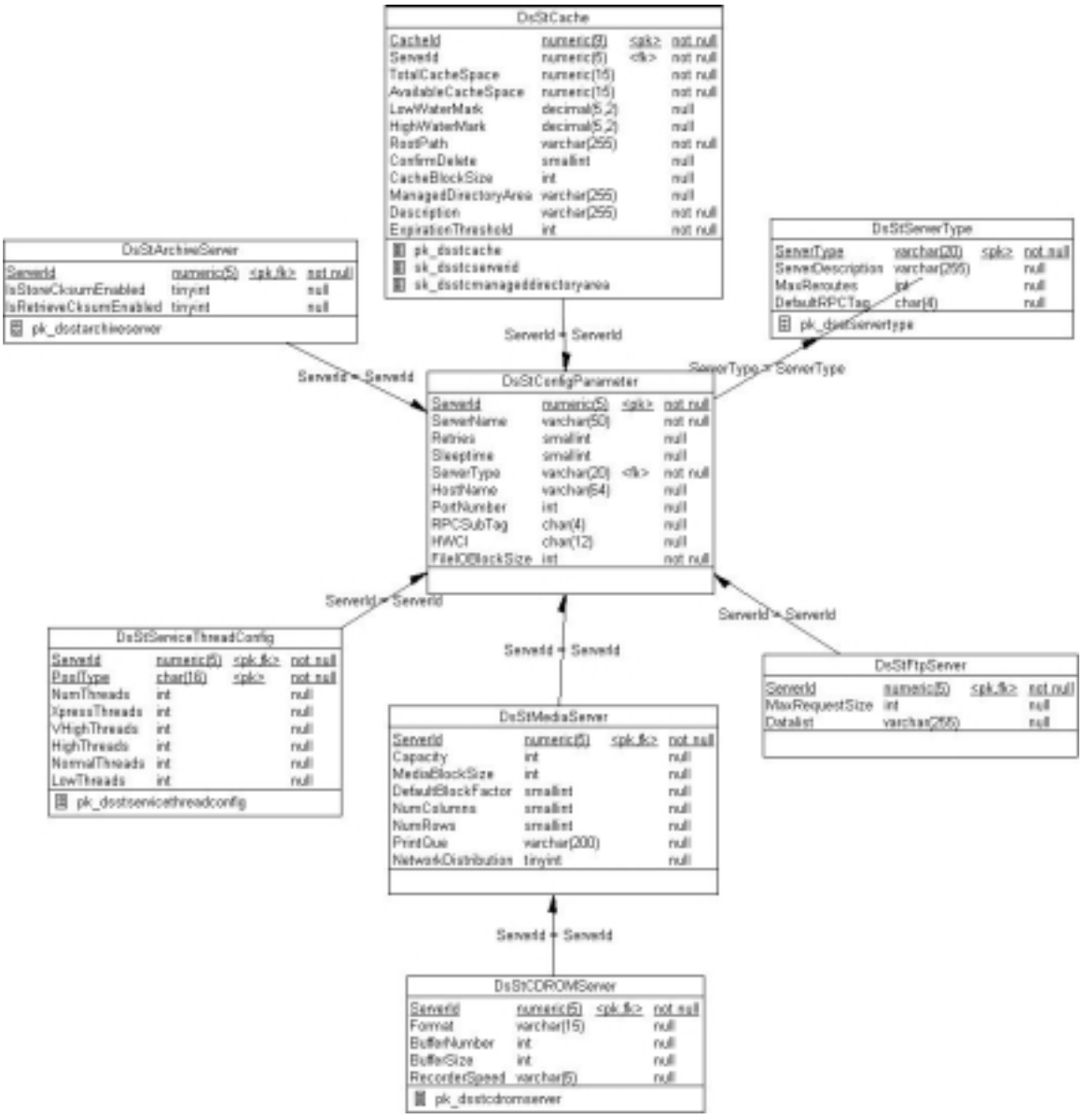

Figure A-8. Server Configuration

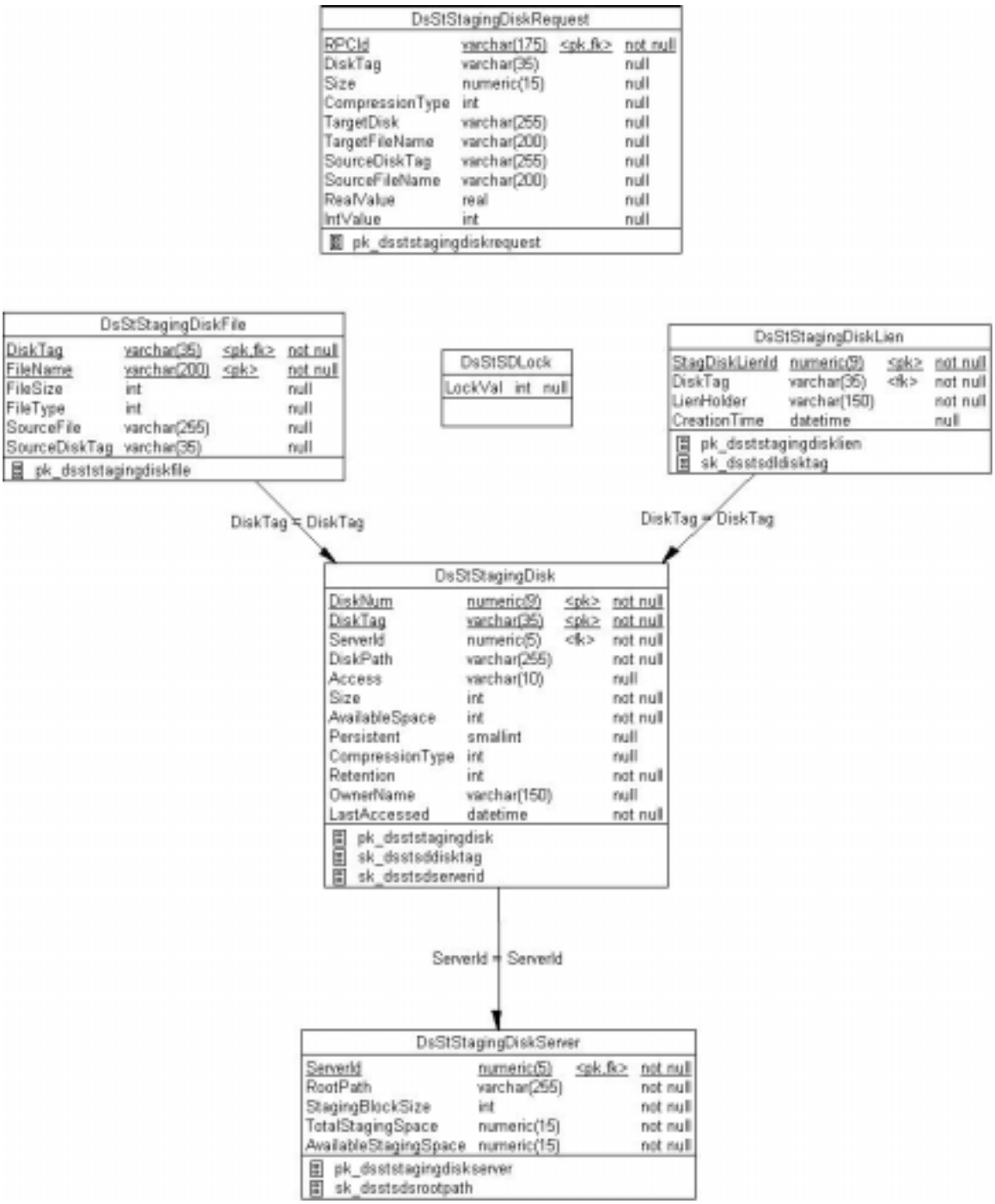

Figure A-9. Staging Disk Operations

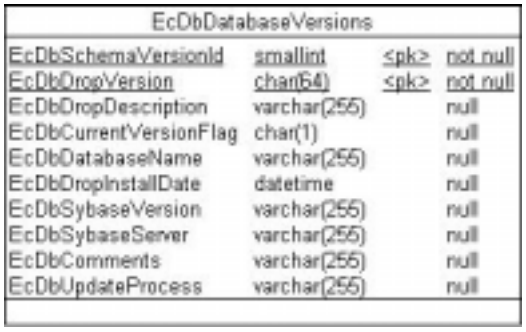

Figure A-10. Database Versioning Information

Figure A-11. GRCleanup

Abbreviations and Acronyms

ANSI	American National Standards Institute
ASCII	American Standard Code for Information Exchange
CASE	Computer Aided Software Engineering
CD	contractual delivery 213-001
CDRL	contract data requirements list
CI	configuration item
COTS	commercial off-the-shelf (hardware or software)
CSCI	computer software configuration item
DAAC	Distributed Active Archive Center
DBCC	Database Consistency Checker
DBMS	Database Management System
DCN	Document Change Notice
DID	data item description
DMS	Data Management Subsystem
ECS	EOSDIS Core System
EDC	EROS Data Center
EDHS	ECS Data Handling System
EOSDIS	Earth Observing System Data and Information System
EROS	Earth Resources Observation System
ERD	Entity Relationship Diagram
ESDIS	Earth Science Data and Information System (GSFC)
ESDT	Earth science data types
ESN	EOSDIS Science Network (ECS)
FK	Foreign Key
GSFC	Goddard Space Flight Center
GUI	graphic user interface
HDF	hierarchical data format

HDF-EOS	an EOS proposed standard for a specialized HDF data format
HTML	HyperText Markup Language
HTTP	Hypertext Transport Protocol
I/O	input/output
ICD	interface control document
INGST	Ingest Services CSCI
IOS	Interoperability Subsystem
LaRC	Langley Research Center (DAAC)
MSS	Management Support Subsystem
N/A	Not applicable
NAS	National Academy of Science
NASA	National Aeronautics and Space Administration
NSIDC	National SNow and Ice Data Center (DAAC)
ODL	Object Definition Language
PCF	Process Control File
PDF	Portable Document Format
PDPS	Planning and Data Processing Subsystem
PGE	Product Generation Executive
PK	Primary Key
QA	Quality Assurance
SDSRV	Science Data Server CSCI
SQL	Structured Query Language
STMGT	Storage Management Software CSCI
SUBSRV	Subscription Server
WWW	World Wide Web