311-EMD-220

EOSDIS Maintenance and Development Project

Release 7.22
INGEST (INS) Database Design and Schema Specifications for the EMD Project

March 2009

Raytheon Information Solutions
Riverdale, Maryland

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Release 7.22
INGEST Database Design and Schema Specifications for the EMD Project

March 2009

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Preface

This document is a formal contract deliverable. It requires Government review and approval within 45 business days. Changes to this document will be made by document change notice (DCN) or by complete revision.

Any questions should be addressed to:

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Revision History

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This document describes the data design and database specification for the Subscription Server subsystem. It is one of eleven documents comprising the detailed database design specifications for each of the EMD subsystems.

The subsystem database design specifications for the as delivered system include:

311-EMD-220 Release 7.22 INGEST (INS) Subsystem Database Design and Schema Specifications for the EMD Project

311-EMD-224 Release 7.22 Order Manager (OMS) Database Design and Schema Specifications for the EMD Project

311-EMD-225 Release 7.22 Spatial Subscription Server (SSS) Database Design and Schema Specifications for the EMD Project

311-EMD-226 Release 7.22 Data Pool (DPL) Database Design and Schema Specifications for the EMD Project

311-EMD-227 Release 7.22 Archive Inventory Management (AIM) Database Design and Schema Specifications for the EMD Project

Entity Relationship Diagrams (ERDs) presented in this document have been exported directly from tools and some cases contain too much detail to be easily readable within hard copy page constraints. The reader is encouraged to view these drawings on-line using the Portable Document Format (PDF) electronic copy available via the ECS Data Handling System (EDHS) on the world-wide web at http://edhs1.gsfc.nasa.gov.

Abstract

This document outlines Release 7.22 “as-built” database design and database schema of the INGEST database including the physical layout of the database and initial installation parameters.

Keywords: data**,** database, design, configuration, database installation, scripts, security, data model, data dictionary, replication, performance tuning, SQL server, database security, replication, database scripts

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Appendix A. Entity Relationship Diagram

Abbreviations and Acronyms

1. Introduction

1.1 Purpose and Scope

The purpose of INGEST Database Design and Database Schema Specification document is to describe the database design and schema specifications implemented to support the data requirements of Release 7 INGEST CSCI. These requirements are specified under the Earth Observing System Data and Information System (EOSDIS) Maintenance and Development (EMD) Project, Contract NAS5-03098, Contract Data Requirement List (CDRL) Item Number 23.

1.2 Document Organization

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

Section 2 provides a listing of the related documents, which were used as a source of information for this document.

Section 3 contains the database overview for the INGEST physical data model which includes a description of the database tables, triggers, stored procedures, flat files, and attributes.

Section 4 provides a description of database performance and tuning factors such as indexes, caches, and segments.

Section 5 provides a description of the database security infrastructure used and list of the users, groups, roles, and permissions available upon initial installation.

Section 6 provides a description of scripts used for installation, de-installation, backup/recovery, and other miscellaneous functions.

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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-EMD-220	Release 7.22 Segment Design Specification for the EMD Project
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-TDN-010	DAAC Database Configuration/NSIDC
920-TDE-010	DAAC Database Configuration/EDC
920-TDL-010	DAAC Database Configuration/LARC
920-TDN-011	DAAC Sybase Log Mapping/NSIDC
920-TDE-011	DAAC Sybase Log Mapping/EDC
920-TDL-011	DAAC Sybase Log Mapping/LARC
922-TDN-013	Disk Partitions/NSIDC
922-TDE-013	Disk Partitions/EDC
922-TDL-013	Disk Partitions/LARC

These documents are maintained as part of the EMD 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 EMD 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.

609-EMD-220	Release 7.22 Operations Tools Manual for the EMD Project
611-EMD-220	Release 7.22 Mission Operation Procedures for the EMD Project

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3. Data Design

3.1 Database Overview

The INGEST database implements the large majority of the persistent data requirements for the INGEST subsystem. The database is designed in such a manner as to satisfy business policy while maintaining data integrity and consistency. Database tables are implemented using the Sybase Relational Database Management system (RDBMS). All components of the INGEST database are described in the section which follow, in sufficient detail to support maintenance needs.

3.1.1 Physical Data Model Entity Relationship Diagram

The Entity Relationship Diagram (ERD) presents a schematic depiction of the INGEST physical data model. The ERDs presented here for the INGEST database were produced using the Power Designor Data Architect Computer Aided Software Engineering (CASE) tool. ERDs represent the relationship between entities or database tables. On ERDs, tables are represented by rectangles and relationships are represented as arrow (see Figure 3-1).

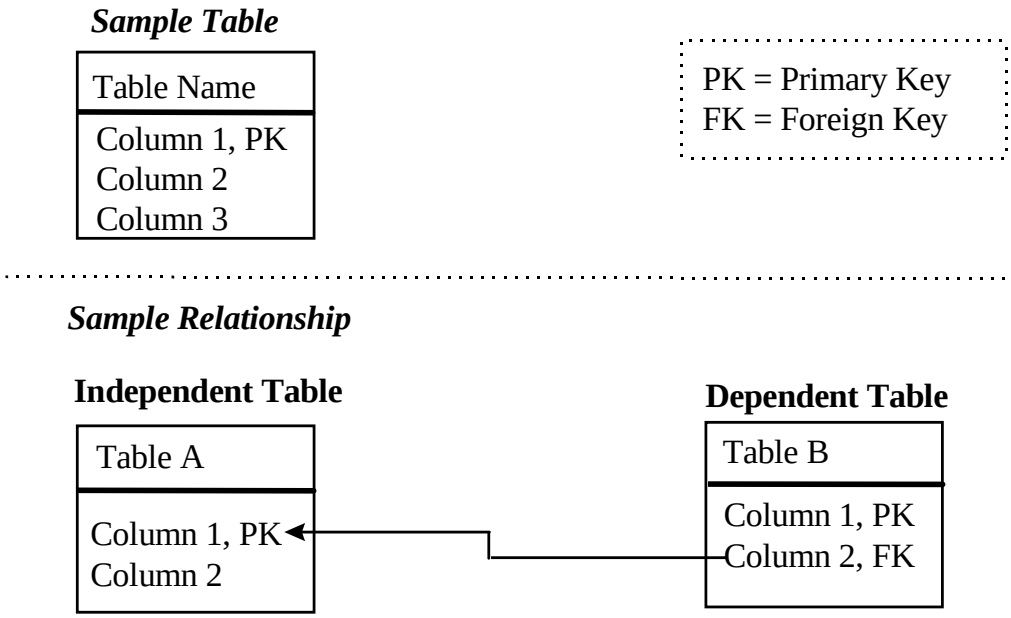

Figure 3-1. ERD Key

3.1.2 Tables

A listing of each the tables in the INGEST database is given here. A brief definition of each of these tables follows including a listing of the columns comprising the table in Table 3-1. The column list indicates if the column is part of the primary key for the table, that is, if the columns can be used alone or in combination with other primary key columns to uniquely identify a single row in the table. The column list also indicates whether the column is a mandatory attribute that must be included in every row.

Table 3-1. Data Tables Listing (1 of 2)

Table Name
EcDbDatabaseVersions
InAlertSuspLookup
InArchive
InArchiveStatistics
InCode
InConfigCategory
InConfigParameter
InCurrentDataTypeMap
InDPLCleanupAction
InDPLFileSystemStats
InDPLIngestFile
InDPLIngestGranule
InDPLIngestPDR
InDataType
InECSServiceHost
InEDPAddressMap
InExternalDataProvider
InFileTypeTemplate
InGranMutex
InGranuleFacts
InGranuleLinkage
InGranuleState
InHistoricGranule
InHistoricRequest
InHostStats
InHostTransferProtocol
InInterventionNote
InMediaCheckin
InMediaType
InMessageLookup

Table 3-1. Data Tables Listing (2 of 2)

Table Name
InNextAvailableID
InNotification
InNotifyServerMessage
InOperatorAlert
InOperatorConfig
InOperatorFilter
InOperatorIntervention
InPDRList
InPollingLocation
InPollingServerMessage
InPollingWithoutDRESDT
InPollingWithoutDRXref
InPriorityMap
InProcessingServerMessage
InProviderStats
InRequestNote
InRequestNoteSummary
InSourceMCF
InSSHCipherMap
InSSSEventAction
InSuspendedGranule
InSuspendedHostXref
InSystemParameters
InTempArchivingThroughput
InTempIngestThroughput
InValBypassPreproc
InValFileCksumType
InValIngestType
InValNotifyType
InValParameterClass
InValRequestState
InXAR

Table 3-2 identifies the current version level of the Ingest database.

Table 3-2. EcDbDatabaseVersions

Column Name	Data Type	PK Column	Mandatory Column
EcDbComments	varchar(255)	No	No
EcDbCurrentVersionFlag	char(1)	No	No
EcDbDatabaseName	varchar(255)	No	No
EcDbDropDescription	varchar(255)	No	No
EcDbDropInstallDate	datetime	No	No
EcDbDropVersion	char(64)	Yes	Yes
EcDbSchemaVersionId	smallint	Yes	Yes
EcDbSybaseServer	varchar(255)	No	No
EcDbSybaseVersion	varchar(255)	No	No
EcDbUpdateProcess	varchar(255)	No	No

Table 3-3 holds alert types and their corresponding description and type of suspension.

Table 3-3. InAlertSuspLookup

Column Name	Data Type	PK Column	Mandatory Column
AlertDesc	varchar(100)	No	No
AlertType	varchar(30)	No	Yes
Suspension	varchar(40)	No	No
AlertSolution	Varchar(500)	No	No

Table 3-4 Stores archive status relative to DPL Ingest along with assorted archiving configuration parameters.

Table 3-4. InArchive (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ArchiveID	numeric(9)	Yes	Yes
ArchiveLabel	varchar(100)	No	No
ArchivePath	varchar(255)	No	Yes
ArchiveStatus	varchar(30)	No	Yes
CSPercClearPrimary	tinyint	No	No
CSPercClearSecond	tinyint	No	No
CacheSpacePrimaryMark	tinyint	No	No
CacheSpaceSecondMark	tinyint	No	No

Table 3-4. InArchive (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ConsumedSpace	tinyint	No	No
FreeSpaceGB	int	No	Yes
InsertStatus	varchar(30)	No	Yes
LastUpdate	datetime	No	Yes
RetryMode	Char(1)	No	No
Silo	varchar(20)	No	No
SpaceChecked	datetime	No	No

Table 3-5 keeps time-tabulated track of archiving throughput operations.

Table 3-5. InArchiveStatistics

Column Name	Data Type	PK Column	Mandatory Column
ArchiveLabel	Varchar(100)	Yes	Yes
AverageThroughput	float	No	No
MaxThroughput	float	No	No
MinThroughput	float	No	No
NumGranulesArchived	int	No	No
SizeDataArchived	float	No	No
StartDate	datetime	Yes	Yes
StopDate	datetime	Yes	Yes

Table 3-6 stores valid codes used as action, intervention types, alert types, etc.

Table 3-6. InCode

Column Name	Data Type	PK Column	Mandatory Column
Code	Varchar(30)	No	Yes
ColumnName	Varchar(30)	No	No
Description	Varchar(255)	No	No
TableName	Varchar(30)	No	Yes

Table 3-7 stores code and description of each configuration category.

Table 3-7. InConfigCategory

Column Name	Data Type	PK Column	Mandatory Column
Category	Varchar(30)	Yes	Yes
CategoryDescription	Varchar(255)	No	Yes

Table 3-8 stores global configuration items.

Table 3-8. InConfigParameter

Column Name	Data Type	PK Column	Mandatory Column
Category	Varchar(30)	No	No
CharValue	Varchar(255)	No	No
ConfigID	Numeric(9)	Yes	Yes
DynamicFlag	Char(1)	No	No
FloatValue	float	No	No
IntValue	int	No	No
ParameterDesc	Varchar(255)	No	Yes
ParameterName	Varchar(100)	No	Yes
ParameterType	Char(1)	No	Yes
Units	Varchar(50)	No	No

Table 3-9 holds a data type and the current version id.

Table 3-9. InCurrentDataTypeMap

Column Name	Data Type	PK Column	Mandatory Column
DataType	varchar(32)	Yes	Yes
VersionID	varchar(16)	No	Yes

Table 3-10 stores DPL cleanup actions.

Table 3-10. InDPLCleanupAction

Column Name	Data Type	PK Column	Mandatory Column
ActionID	Numeric(16)	Yes	Yes
ActionSource	Varchar(30)	No	No
CompletionDate	datetime	No	No
DPLGranuleID	Numeric(16)	No	Yes
ExpirationDate	datetime	No	Yes
InsertDate	datetime	No	Yes
ShortName	Varchar(12)	No	Yes
Status	Varchar(30)	No	No
VersionID	Varchar(16)	No	Yes

Table 3-11 stores archiving throughput statistics by DPL File System.

Table 3-11. InDPLFileSystemStats

Column Name	Data Type	PK Column	Mandatory Column
AverageThroughput	float	No	Yes
FileSystemLabel	Char(10)	Yes	Yes
MaxThroughput	float	No	Yes
MinThroughput	float	No	Yes
NumGranulesArchived	int	No	Yes
SizeDataArchived	float	No	Yes
StartDate	datetime	Yes	Yes
StopDate	datetime	Yes	Yes

Table 3-12 stores files for requests that are staged through DPL.

Table 3-12. InDPLIngestFile (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ChecksumOrigin	Varchar(20)	No	No
ChecksumType	Varchar(64)	No	No
ChecksumValue	Varchar(40)	No	No
ChecksumVerificationFlag	Char(1)	No	Yes
CompChecksumOrigin	Varchar(20)	No	No
CompChecksumType	Varchar(64)	No	No
CompChecksumValue	Varchar(40)	No	No
CompletionTime	int	No	No

Table 3-12. InDPLIngestFile (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
DPLIngestFlag	Char(1)	No	No
DataType	Varchar(32)	No	No
FileName	Varchar(245)	Yes	Yes
FileNumber	int	No	Yes
FileSize	int	No	Yes
FileState	Char(15)	No	No
FileStatus	smallint	No	Yes
FileType	Varchar(32)	No	No
GranSeqNum	int	No	Yes
IngestGranID	Numeric(16)	Yes	Yes
LastUpdate	datetime	No	No
OriginalFileName	VARCHAR(245)	No	No
RequestID	int	No	Yes
SourceDirectoryID	Varchar(255)	No	Yes
StatusDetail	Varchar(255)	No	No
XferDate	Datetime	No	No

Table 3-13 stores granule info for requests that will ingest through the DPL.

Table 3-13. InDPLIngestGranule (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
AltArchiveID	Numeric(9)	No	No
ArchiveID	Numeric(9)	No	No
DPLGranuleID	Numeric(16)	No	No
DPLIngestFlag	Char(1)	No	No
DataDescriptor	Varchar(60)	No	No
DataFormat	Varchar(30)	No	No
DataType	Varchar(32)	No	Yes
ECSGranuleID	Numeric(16)	No	No
GranSeqNum	int	No	Yes
GranuleCompleted	smallint	No	Yes
GranuleHandle	Varchar(100)	No	No
GranuleRpcID	Varchar(255)	No	No
GranuleSize	float	No	No
GranuleStatus	char(20)	No	Yes
IngestGranID	Numeric(16)	Yes	Yes
LastCheckpointedState	Varchar(30)	No	No
LastError	Varchar(30)	No	No

Table 3-13. InDPLIngestGranule (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
AsterDataSource	Varchar(16)	No	No
LastUpdate	datetime	No	No
NodeName	Varchar(255)	No	No
NonEcsFlag	Char(1)	No	No
PreprocFilenameUuid	Varchar(36)	No	No
ProcessingEndDateTime	datetime	No	No
ProcessingStartDateTime	datetime	No	No
RequestID	int	No	Yes
RetryCount	smallint	No	No
StagingDir	Varchar(255)	No	No
StatusDetail	Varchar(255)	No	No
TimeToArchive	int	No	No
TimeToChecksum	int	No	No
TimeToCompChecksum	int	No	No
TimeToCompress	int	No	No
TimeToInsert	int	No	No
TimeToPreprocess	int	No	No
TimeToPublish	int	No	No
TimeToXfer	int	No	No
TotalFileCount	int	No	No
VersionID	Varchar(16)	No	Yes

Table 3-14 stores PDR Header info for PDRs that will go through DPL for ingest.

Table 3-14. InDPLIngestPDR (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
RequestID	int	Yes	Yes
SequenceID	int	No	No
CDSName	varchar(255)	No	No
DDNDestination	int	No	No
MediaId	Varchar(32)	No	No
PDRFileName	Varchar(255)	No	Yes
DataProviderID	Numeric(9)	No	No
ExternalDataProvider	Varchar(20)	No	No
PollingLocationID	Numeric(9)	No	No
DPLIngestFlag	Char(1)	No	No
RequestPriority	Varchar(10)	No	Yes

Table 3-14. InDPLIngestPDR (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
RequestStateKey	tinyint	No	No
RequestStatus	Varchar(30)	No	No
StatusDetail	Varchar(255)	No	No
LastCheckpointedState	Varchar(30)	No	No
IngestType	Varchar(40)	No	Yes
SpecProc	smallint	No	Yes
Mission	Varchar(60)	No	No
TransferFlag	smallint	No	Yes
UUID	Char(36)	No	No
RequestSize	float	No	No
NumGranules	int	No	No
NumFiles	int	No	No
CreationDate	datetime	No	No
QueuedDate	datetime	No	No
ProcessingStartDate	datetime	No	No
ProcessingEndDate	datetime	No	No
ExpirationDateTime	datetime	No	No
ExpiredFlag	smallint	No	Yes
PreprocComplete	int	No	Yes
ArchComplete	int	No	Yes
XferComplete	int	No	Yes
InsertComplete	int	No	Yes
NumGransProcessed	int	No	No
LastUpdate	datetime	No	No
InitialRpcID	Varchar(255)	No	No
ReqMgrRpcID	Varchar(255)	No	No
PanCreated	Char(1)	No	No
DataFormat	Varchar(30)	No	No
ResubmitFlag	tinyint	No	No

Table 3-15 defines valid Earth Science Data Types (ESDTs) that Ingest is capable of ingesting.

Table 3-15. InDataType

Column Name	Data Type	PK Column	Mandatory Column
DataType	varchar(32)	Yes	Yes
DataTypeBypassPreproc	varchar(20)	No	Yes
ExpeditedDataType	varchar(32)	No	No
ExpeditedVersionID	varchar(16)	No	No
FileTypeTemplateKey	varchar(32)	No	Yes
GranuleServerURKey	tinyint	No	Yes
IngestFtpKey	varchar(30)	No	Yes
OutputDestination	char(40)	No	No
PrimaryFlag	tinyint	No	Yes
SdsrvUR	varchar(255)	No	No
SecondaryDataType	varchar(32)	No	No
ServerType	char(5)	No	No
StorageMgmtKey	varchar(30)	No	Yes
TestDataType	varchar(32)	No	No
VersionID	varchar(16)	Yes	Yes
IgnoreValidationWarning	char(1)	No	Yes

Table 3-16 stores configuration info for ECS Service hosts.

Table 3-16. InECSServiceHost (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ServiceHostID	Numeric(9)	Yes	Yes
HostLabel	Varchar(75)	No	Yes
IPAddress	Varchar(155)	No	Yes
PortNumber	smallint	No	Yes
MaxOps	int	No	No
Comments	Varchar(255)	No	No
CompressionTimeLimit	int	No	No
CompressionThroughput	float	No	No
CompressionStatus	Varchar(30)	No	Yes
CompressionEnabled	Char(1)	No	Yes
MaxConcurrentWrites	int	No	No
ArchivingThroughput	float	No	No
ArchivingTimeLimit	int	No	No

Table 3-16. InECSServiceHost (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ArchivingStatus	Varchar(30)	No	Yes
ArchivingEnabled	Char(1)	No	Yes
ChecksumTimeLimit	int	No	No
ChecksumThroughput	float	No	No
ChecksumStatus	Varchar(30)	No	Yes
ChecksumEnabled	Char(1)	No	Yes
MaxConcurrentFileXfers	int	No	No
FileXferStatus	Varchar(30)	No	Yes
FileXferEnabled	Char(1)	No	Yes
RetryMode	Char(1)	No	No
LastUpdate	datetime	No	Yes
InsertMaxConcurrentCopies	int	No	No
InsertCopyStatus	Varchar(30)	No	No
InsertCopyTimeLimit	int	No	No
InsertCopyThroughput	float	No	No
InsertMaxConcurrentChecksums	int	No	No
InsertChecksumStatus	Varchar(30)	No	No
ScpEnabled	Char(1)	No	Yes

Table 3-17 associates an External Data Provider with its Internet address.

Table 3-17. InEDPAddressMap

Column Name	Data Type	PK Column	Mandatory Column
IPAddress	varchar(255)	Yes	Yes
ExternalDataProvider	varchar(20)	No	Yes

Table 3-18 holds the configuration and current processing status information for a data provider.

Table 3-18. InExternalDataProvider (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
DataProviderID	Numeric(9)	Yes	Yes
ExternalDataProvider	Varchar(20)	No	Yes
CDSEntry	Varchar(255)	No	No
CurrentRequests	int	No	Yes
CurrentVolume	Float(48)	No	Yes
EmailAddress	Varchar(255)	No	No

Table 3-18. InExternalDataProvider (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
FTPUsername	Varchar(10)	No	No
IngestPriority	Varchar(10)	No	Yes
IngestType	Varchar(40)	No	Yes
MaximumRequests	int	No	Yes
PostTransferSizeCheck	tinyint	No	Yes
UUID	Char(36)	No	No
VolumeThreshold	Float(48)	No	Yes
FTPPassword	Varbinary(30)	No	No
FTPPasswordSize	int	No	No
HTMLPassword	Varbinary(30)	No	No
HTMLPasswordSize	int	No	No
NotifyType	Varchar(10)	No	No
NotifyOperator	tinyint	No	No
NotifyFTPNode	Varchar(255)	No	No
NotifyHostID	Numeric(9)	No	No
NotifyFTPDirectory	Varchar(255)	No	No
NotifyFTPUsername	Varchar(10)	No	No
NotifyFTPPassword	Binary(30)	No	No
NotifyFTPPasswordSize	Int	No	No
TransferFlag	Tinyint	No	Yes
DataProvMediaStorageMgmtKey	Varchar(30)	No	No
NotifyNamingConv	Varchar(10)	No	Yes
ProviderBypassPreproc	Varchar(20)	No	Yes
ChecksumRequired	Char(1)	No	No
PercentChecksum	tinyint	No	No
ReqActivationStatus	Varchar(30)	No	Yes
NotifyStatus	Varchar(30)	No	Yes
MaxGranules	int	No	No
RetryMode	Char(1)	No	No
NotifyMethod	Varchar(10)	No	No
ProviderType	Varchar(10)	No	No
FtpMode	Varchar(10)	No	No

Table 3-19 defines all valid File Types that make up a DataType.

Table 3-19. InFileTypeTemplate

Column Name	Data Type	PK Column	Mandatory Column
ArchivalFlag	char(1)	No	No
AttributeName	varchar(255)	No	No
ExtConvFileName	varchar(48)	No	No
ExtConvType	varchar(32)	No	No
FileClass	char(4)	No	No
FileType	varchar(32)	No	Yes
FileTypeTemplateKey	varchar(32)	No	Yes
InternalFileType	varchar(32)	No	No
LineDelimiter	char(1)	No	No
Maximum	tinyint	No	Yes
MetadataSpecialization	varchar(48)	No	No
Minimum	tinyint	No	Yes
ParameterClassDefault	varchar(8)	No	No
PVSeparator	char(1)	No	No
RequiredFlag	char(1)	No	Yes
ScienceSpecialization	varchar(48)	No	No
SourceMCF	varchar(32)	No	No
StringDelimiter	char(1)	No	No

Table 3-20 stores granule info to be used for counts. Only stores granules in Processing or Queued statuses.

Table 3-20. InGranuleFacts

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	Yes	Yes
RequestID	int	No	Yes
DataProviderID	Numeric(9)	No	Yes
FileSystemID	Numeric(9)	No	No
ArchiveID	Numeric(9)	Yes	Yes
TransferHostID	Numeric(9)	No	No
GranuleStatus	Char(30)	No	Yes
GranuleSize	float	No	Yes
MinArchSize	float	No	Yes

Table 3-21 stores granule info for requests that will ingest through the DPL.

Table 3-21. InGranuleLinkage

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	No	Yes
GranuleUR	VARCHAR(255)	No	Yes

Table 3-22 stores granule lock information.

Table 3-22. InGranMutex

Column Name	Data Type	PK Column	Mandatory Column
myLock	int	Yes	Yes

Table 3-23 holds information about granule states.

Table 3-23. InGranuleState

Column Name	Data Type	PK Column	Mandatory Column
DataGranuleState	Varchar(20)	Yes	Yes
SequenceNum	int	No	No

Table 3-24 holds information about historic Granules.

Table 3-24. InHistoricGranule (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
RequestID	int	Yes	Yes
DataGranuleID	int	Yes	Yes
DataType	Varchar(32)	Yes	Yes
VersionID	Varchar(16)	No	No
DPLGranuleID	numeric(16)	No	No
ECSGranuleID	numeric(16)	No	No
DataGranuleVolume	Float(48)	No	No
DataGranuleState	Varchar(30)	No	No
LastError	varchar(30)	No	No
NodeName	varchar(255)	No	No
ProcessingEndDateTime	datetime	No	No

Table 3-24. InHistoricGranule (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ProcessingStartDateTime	datetime	No	No
RetryCount	smallint	No	No
TotalFileCount	int	No	No
TimeToArchive	int	No	No
TimeToPreprocess	int	No	No
TimeToChecksum	int	No	No
TimeToXfer	int	No	No
TimeToCompress	int	No	No
TimeToInsert	int	No	No
TimeToCompChecksum	int	No	No
TimeToPublish	int	No	No
LastUpdate	datetime	No	No
StatusDetail	Varchar(255)	No	No
IngestGranID	Numeric(16)	No	No
ArchiveID	Numeric(9)	No	No
AltArchiveID	Numeric(9)	No	No
DPLIngestFlag	Char(1)	No	No

Table 3-25 holds information about historic requests.

Table 3-25. InHistoricRequest (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
RequestID	int	Yes	Yes
DANFileName	Varchar(255)	No	Yes
ExternalDataProvider	Varchar(20)	No	Yes
IngestType	Varchar(40)	No	Yes
Mission	Varchar(60)	No	No
ProcessingStartDateTime	datetime	No	No
ProcessingEndDateTime	datetime	No	No
QueuedDate	datetime	No	No
RequestPriority	Varchar(10)	No	No
RequestStateKey	tinyint	No	No
TimeToXfer	int	No	No
TimeToPreprocess	int	No	No
TimeToArchive	int	No	No
TimeToChecksum	int	No	No
TimeToCompress	int	No	No
TimeToInsert	int	No	No

Table 3-25. InHistoricRequest (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
TimeToCompChecksum	int	No	No
TimeToPublish	int	No	No
TotalDataVolume	Float(48)	No	No
TotalFileCount	int	No	No
TotalGranuleCount	int	No	No
TotalSuccessfulGranules	int	No	No
LastUpdate	datetime	No	No
DPLIngestFlag	Char(1)	No	No
StatusDetail	Varchar(255)	No	No
ResubmitFlag	tinyint	No	No
MediaId	Varchar(32)	No	No

Table 3-26 holds ingest throughput statistics by host.

Table 3-26. InHostStats

Column Name	Data Type	PK Column	Mandatory Column
HostAddress	Varchar(75)	No	Yes
HostLabel	Varchar(75)	No	No
StartDate	datetime	Yes	Yes
StopDate	datetime	Yes	Yes
MinThroughput	float	No	No
MaxThroughput	float	No	No
AverageThroughput	float	No	No
NumGranulesArchived	int	No	No
SizeDataArchived	float	No	No
HostID	Numeric(9)	Yes	Yes

Table 3-27 holds configuration for FTP (or SCP) hosts.

Table 3-27. InHostTransferProtocol (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
HostID	Numeric(9)	Yes	Yes
HostLabel	Varchar(75)	No	Yes
HostAddress	varchar(75)	No	Yes
MaxConcurrentOps	Int	No	No
DoTimeOuts	Char(1)	No	No

Table 3-27. InHostTransferProtocol (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ExpectedThroughput	float	No	No
PadWaitTime	int	No	No
RetryMode	Char(1)	No	No
MaxRetries	int	No	No
RetryInterval	int	No	No
LastUpdate	datetime	No	No
ReadStatus	Varchar(30)	No	No
WriteStatus	varchar(30)	No	No
OverallStatus	varchar(30)	No	No
ProtocolFlag	tinyint	No	Yes

Table 3-28 holds user notes from an intervention.

Table 3-28. InInterventionNote

Column Name	Data Type	PK Column	Mandatory Column
InterventionID	Numeric(9)	Yes	Yes
NoteSeqNum	smallint	Yes	Yes
Notes	Varchar(255)	No	Yes
InsertDate	datetime	No	Yes
Source	Varchar(10)	No	Yes
OperatorName	Varchar(50)	No	No

Table 3-29 holds information about the different types of media on which data will come in.

Table 3-29. InMediaCheckin

Column Name	Data Type	PK Column	Mandatory Column
CheckinTime	datetime	No	Yes
ExternalDataProvider	varchar(20)	No	Yes
MediaType	varchar(10)	No	Yes
State	char(15)	No	Yes
VolumeID	varchar(40)	Yes	Yes

Table 3-30 holds the valid values of the media type available that can be ingested.

Table 3-30. InMediaType

Column Name	Data Type	PK Column	Mandatory Column
MediaType	varchar(10)	Yes	Yes

Table 3-31 holds server processing messages lookup.

Table 3-31. InMessageLookup

Column Name	Data Type	PK Column	Mandatory Column
ResourceType	varchar(30)	No	Yes
ServerName	Varchar(30)	No	Yes

Table 3-32 holds the next available RequestID to be given.

Table 3-32. InNextAvailableID

Column Name	Data Type	PK Column	Mandatory Column
NextID	int	Yes	Yes
NextSourceID	int	No	Yes

Table 3-33 holds request notifications to be queued for notification server.

Table 3-33. InNotification

Column Name	Data Type	PK Column	Mandatory Column
NotificationID	Numeric(16)	Yes	Yes
RequestID	int	No	No
CreationDate	datetime	No	Yes
CompletionTime	datetime	No	No
NotificationStatus	Varchar(30)	No	No
EmailStatus	varchar(30)	No	No
DataProviderID	Numeric(9)	No	No
FileName	Varchar(255)	No	No
FileTransferStatus	varchar(30)	No	No

Table 3-34 holds resource & system messages for the notification server.

Table 3-34. InNotifyServerMessage

Column Name	Data Type	PK Column	Mandatory Column
MessageID	Numeric(16)	No	Yes
ManagementType	Varchar(30)	No	Yes
CreationDate	datetime	No	Yes
CompletionTime	datetime	No	No
MessageStatus	varchar(30)	No	No
ResourceID	Numeric(9)	No	No
ResourceType	varchar(30)	No	Yes
MessageSource	Varchar(30)	No	No
DataProviderID	Numeric(9)	No	No

Table 3-35 holds resource-related operator alerts.

Table 3-35. InOperatorAlert

Column Name	Data Type	PK Column	Mandatory Column
AlertID	Numeric(9)	Yes	Yes
CreationDate	datetime	No	Yes
CompletionDate	datetime	No	No
AlertExplanation	Varchar(255)	No	No
AlertType	Varchar(30)	No	Yes
ResourceID	Numeric(9)	No	No
ResourceType	Varchar(30)	No	Yes
ResourceName	Varchar(255)	No	No
AlertStatus	Varchar(30)	No	No
ServerName	Varchar(30)	No	Yes
DataProviderID	Numeric(9)	No	No

Table 3-36 holds general operator configuration info.

Table 3-36. InOperatorConfig (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
OperatorID	Numeric(9)	Yes	Yes
OperatorName	Varchar(50)	No	Yes
OperatorEncrPasswd	Varbinary(30)	No	Yes
ViewEnabled	Char(1)	No	Yes
ControlEnabled	char(1)	No	Yes

Table 3-36. InOperatorConfig (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
TuningEnabled	char(1)	No	Yes
IngestAdminEnabled	char(1)	No	Yes
SecurityAdminEnabled	char(1)	No	Yes

Table 3-37 holds filters for each operator per page.

Table 3-37. InOperatorFilter

Column Name	Data Type	PK Column	Mandatory Column
OperatorID	Numeric(9)	Yes	Yes
Page	Varchar(50)	Yes	Yes
Criteria	text	No	No

Table 3-38 holds header info for an operator intervention.

Table 3-38. InOperatorIntervention

Column Name	Data Type	PK Column	Mandatory Column
InterventionID	Numeric(9)	Yes	Yes
RequestID	int	No	No
InterventionStatus	Varchar(30)	No	No
ExternalDataProvider	Varchar(20)	No	No
WorkedBy	Varchar(14)	No	No
CreationTime	datetime	No	No
Outcome	Varchar(75)	No	No
AckTime	datetime	No	No
CompletionTime	datetime	No	No

Table 3-39 keeps track of what PDRs have been processed either by classic ingest or DPL Ingest.

Table 3-39. InPDRList

Column Name	Data Type	PK Column	Mandatory Column
ListID	Numeric(16)	Yes	Yes
PollingLocationID	Numeric(9)	No	Yes
PDRFilename	Varchar(255)	No	Yes

Table 3-40 stores polling locations for an external data provider.

Table 3-40. InPollingLocation

Column Name	Data Type	PK Column	Mandatory Column
PollingLocationID	Numeric(9)	Yes	Yes
DataProviderID	Numeric(9)	No	Yes
PollingLocStatus	Varchar(30)	No	Yes
PollingLocName	Varchar(100)	No	No
PollingFrequency	int	No	No
PollingMethod	Varchar(20)	No	No
PollingPath	Varchar(255)	No	Yes
HostID	Numeric(9)	No	No
PollingLocOwner	varchar(10)	No	No
DPLIngestEnabled	Char(1)	No	No
RetryMode	char(1)	No	No
LastUpdate	datetime	No	Yes

Table 3-41 stores messages to be queued for server.

Table 3-41. InPollingServerMessage

Column Name	Data Type	PK Column	Mandatory Column
MessageID	Numeric(16)	Yes	Yes
ManagementType	Varchar(30)	No	Yes
CreationDate	datetime	No	Yes
CompletionTime	datetime	No	No
MessageStatus	Varchar(30)	No	No
ResourceID	Numeric(9)	No	Yes
ResourceType	Varchar(30)	No	Yes
MessageSource	Varchar(30)	No	No
ListID	Numeric(16)	No	No
DataProviderID	Numeric(9)	No	No

Table 3-42 stores information for polling with DR ESDTs.

Table 3-42. InPollingWithoutDRESDT

Column Name	Data Type	PK Column	Mandatory Column
DataType	Varchar(32)	Yes	Yes
VersionID	Varchar(16)	Yes	Yes

Table 3-43 stores mapping between provider and polling without DR ESDTs.

Table 3-43. InPollingWithoutDRXref

Column Name	Data Type	PK Column	Mandatory Column
DataProviderID	Numeric(9)	Yes	Yes
DataType	Varchar(32)	No	Yes
VersionID	Varchar(16)	No	Yes

Table 3-44 stores mapping of integer to character priority.

Table 3-44. InPriorityMap

Column Name	Data Type	PK Column	Mandatory Column
CharPriority	Varchar(30)	Yes	Yes
IntPriority	tinyint	Yes	Yes

Table 3-45 stores messages to be queued for processing server.

Table 3-45. InProcessingServerMessage

Column Name	Data Type	PK Column	Mandatory Column
MessageID	Numeric(16)	No	Yes
MessageType	Varchar(30)	No	Yes
CreationDate	Datetime	No	Yes
CompletionTime	Datetime	No	No
RequestID	Int	No	No
IngestGranID	Numeric(16)	No	No
EsdtType	Varchar(32)	No	No
MessageStatus	Varchar(30)	No	No
ResourceID	Numeric(9)	No	No
ResourceType	Varchar(30)	No	No
oldResourceID	Numeric(9)	No	No
MessageSource	Varchar(30)	No	No
DataProviderID	Numeric(9)	No	No

Table 3-46 stores ingesting throughput statistics by provider.

Table 3-46. InProviderStats

Column Name	Data Type	PK Column	Mandatory Column
ExternalDataProvider	Varchar(20)	Yes	Yes
StartDate	datetime	Yes	Yes
StopDate	datetime	Yes	Yes
MinThroughput	float	No	No
MaxThroughput	float	No	No
AverageThroughput	float	No	No
NumGranulesArchived	int	No	No
SizeDataArchived	float	No	No

Table 3-47 stores user notes from intervention and request history including status history.

Table 3-47. InRequestNote

Column Name	Data Type	PK Column	Mandatory Column
RequestID	int	Yes	Yes
NoteSeqNum	smallint	Yes	Yes
Notes	Varchar(255)	No	Yes
InsertDate	datetime	No	Yes
Source	Varchar(10)	No	Yes
OperatorName	Varchar(50)	No	No

Table 3-48 stores user notes from intervention and request history including status history.

Table 3-48. InRequestNoteSummary

Column Name	Data Type	PK Column	Mandatory Column
RequestID	int	Yes	Yes
NoteSeqNum	smallint	Yes	Yes
Notes	Varchar(255)	No	Yes
InsertDate	datetime	No	Yes
Source	Varchar(10)	No	No
OperatorName	Varchar(50)	No	No

Table 3-49 is, initially, pre-populated with the valid metadata types for each FileType. It is the mapping that "points" you to the metadata and indicates "how" to handle the data in a standard ODL format.

Table 3-49. InSourceMCF

Column Name	Data Type	PK Column	Mandatory Column
CSDT	varchar(32)	No	No
DateTimeFormat	varchar(32)	No	No
DateTimeValueFormat	varchar(32)	No	No
FieldLength	int	No	No
FieldLocationOffset	int	No	No
GroupLabel	varchar(32)	No	No
MandatoryFlag	char(1)	No	No
ParameterClass	varchar(8)	No	No
ProductSpecific	varchar(48)	No	No
SourceID	int	Yes	Yes
SourceMCF	varchar(32)	No	Yes
SourceParameter	varchar(255)	No	No
SpecialProcessing	varchar(8)	No	No
TargetParameter	varchar(255)	No	No

Table 3-50 maps a "TransferFlag" to a "Cipher". For example, TransferFlag 2 is using Cipher none, and TransferFlag 3 is using Cipher aes12No. DAAC can define more ciphers to use by adding new rows to the table. Of course, they need to verify that the cipher added is supported by their system before adding anything.

Table 3-50. InSSHCipherMap

Column Name	Data Type	PK Column	Mandatory Column
Cipher	varchar(20)	No	Yes
SSHType	varchar(20)	No	Yes
TransferFlag	int	Yes	Yes

Table 3-51 stores information of SSS failed event actions.

Table 3-51. InSSSEventAction (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ActionID	Numeric(16)	Yes	Yes
ECSGranuleID	Numeric(16)	No	Yes

Table 3-51. InSSSEventAction (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
ShortName	Varchar(12)	No	Yes
VersionID	Varchar(16)	No	Yes
GranuleUR	Varchar(255)	No	Yes
Status	Varchar(30)	No	No
CompletionDate	datetime	No	No
InsertDate	datetime	No	Yes

Table 3-52 stores information on suspended granules.

Table 3-52. InSuspendedGranule

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	Yes	Yes
ResourceType	Varchar(30)	Yes	Yes
ResourceID	Numeric(9)	No	No
RequestID	int	No	Yes

Table 3-53 stores list of suspended hosts in relation to external data providers.

Table 3-53. InSuspendedHostXref

Column Name	Data Type	PK Column	Mandatory Column
AlertID	Numeric(9)	Yes	Yes
ProviderID	numeric(9)	Yes	Yes
HostID	numeric(9)	Yes	Yes
ReadStatus	Varchar(30)	No	No
WriteStatus	varchar(30)	No	No

Table 3-54 holds the system parameters used to manage ingest processing. There is only one entry in this table.

Table 3-54. InSystemParameters (1 of 2)

Column Name	Data Type	PK Column	Mandatory Column
CommunicationRetryCount	int	No	Yes
CommunicationRetryInterval	int	No	Yes
CurrentTotalRequests	int	No	Yes
CurrentTotalVolume	float(48)	No	Yes

Table 3-54. InSystemParameters (2 of 2)

Column Name	Data Type	PK Column	Mandatory Column
IngestFTPPassword	binary(30)	No	No
IngestFTPPasswordSize	int	No	No
IngestFTPUsername	varchar(10)	No	No
MaximumTotalRequests	int	No	Yes
MaximumTotalVolume	float(48)	No	Yes
MediaStorageMgmtKey	varchar(30)	No	Yes
MonitorTimeForCompletedRequest	int	No	Yes
ScreenUpdateInterval	int	No	Yes
SysParameterID	int	Yes	Yes

Table 3-55 a temporary table stores archiving throughput statistics.

Table 3-55. InTempArchivingThroughput

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	Yes	Yes
Throughput	float	No	Yes
GranuleSize	float	No	Yes
ArchiveLabel	Varchar(100)	No	Yes
FileSystemLabel	Char(10)	No	Yes
InsertDate	datetime	No	No

Table 3-56 stores granule level throughput stats that are summarized and removed periodically.

Table 3-56. InTempIngestThroughput

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	Yes	Yes
Throughput	float	No	Yes
GranuleSize	float	No	Yes
ExternalDataProvider	Varchar(20)	No	Yes
HostAddress	Varchar(75)	No	Yes
InsertDate	datetime	No	No
HostLabel	Varchar(75)	No	No
HostID	Numeric(9)	No	Yes

Table 3-57 provides a linkage between the InDataType and InExternalDataProvider tables with the types of Bypass Preproccesing that will be used for a particular DataType and its respective Data Provider.

Table 3-57. InValBypassPreproc

Column Name	Data Type	PK Column	Mandatory Column
BypassPreproc	varchar(20)	Yes	Yes

Table 3-58 lists the valid checksum types.

Table 3-58. InValFileCksumType

Column Name	Data Type	PK Column	Mandatory Column
ChecksumAlgorithmPath	varchar(255)	No	No
ChecksumID	numeric(9)	No	Yes
DefaultFlag	char(1)	No	No
FileCksumType	varchar(64)	Yes	Yes

Table 3-59 defines all the valid values for an ingest type.

Table 3-59. InValIngestType

Column Name	Data Type	PK Column	Mandatory Column
IngestType	varchar(40)	Yes	Yes

Table 3-60 defines all the valid values for a notify type.

Table 3-60. InValNotifyType

Column Name	Data Type	PK Column	Mandatory Column
NotifyType	varchar(10)	Yes	Yes

Table 3-61 defines all the valid values for a parameter class.

Table 3-61. InValParameterClass

Column Name	Data Type	PK Column	Mandatory Column
ParameterClass	varchar(8)	Yes	Yes

Table 3-62 defines all the valid values for a request state.

Table 3-62. InValRequestState

Column Name	Data Type	PK Column	Mandatory Column
RequestState	varchar(25)	No	Yes
RequestStateKey	tinyint	Yes	Yes

Table 3-63 stores XAR information extracted from PDR**.**

Table 3-63. InXAR

Column Name	Data Type	PK Column	Mandatory Column
IngestGranID	Numeric(16)	Yes	Yes
XarID	numeric(16)	Yes	Yes
XarType	Varchar(64)	No	Yes
LastUpdate	datetime	No	No

3.1.3 Columns

Brief definitions of each of the columns present in the database tables defined above are contained in Table 3-64.

Table 3-64. Column Descriptions (1 of 19)

Column Name	Column Description	Valid Values
AckTime	Date this intervention was first viewed	
ActionID	UID for a DPL cleanup action	
ActionSource	Indicates where action originated	
AlertDesc	Description of alert type useful for GUI	
AlertExplanation	Detailed description of what caused alert	
AlertID	UID for an alert	
AlertSolution	Description of possible steps for resolution	

Table 3-64. Column Descriptions (2 of 19)

Column Name	Column Description	Valid Values
AlertStatus	Status of this alert (OPEN or CLOSED)	'OPEN', 'CLOSED'
AlertType	Classification of alert	See 'Alert Types' chart below
AltArchiveID	Alternative UID for an archive	
ArchivalFlag	Boolean flag to indicate if the file is needed to be archived or not.	Y = Yes, N = No
ArchiveID	UID for an archive	
ArchiveLabel	User defined label for archive	
ArchivePath	Physical directory of this archive	
ArchiveStatus	Status of this archive	'ACTIVE', 'SUSPENDED', 'SUSPENDEDBYOPERATOR'
ArchivingEnabled	Indicates whether archiving is enabled for this service host.	Y, N
ArchivingStatus	Status of this archiving for this service host	'ACTIVE', 'SUSPENDED', 'SUSPENDEDBYOPERATOR'
ArchivingThroughput	Expected throughput in MB/s for this service	
ArchivingTimeLimit	Time out interval in seconds for this archive	
ArchComplete	This is the percentage of files insertions into the archive completed for the requested data.	0 - 100
ArchComplete	This is the number of files insertions into the archive completed for the requested data.	0 - 100
AttributeName	The name of the metadata attribute as defined in the Core Metadata Model. Valid names/attributes are either core or product specific.	See 420-TP-021
AverageThroughput	Average archiving throughput for this archive during time period specified	
AsterDataSource	Data source for AsterData	
BypassPreproc	Provides a linkage between the InDataType and InExternalDataProvider tables with the types of Bypass Preproccesing that will be used For a particular DataType and its respective Data Provider.	
CacheSpacePrimaryMark	The percent of free cache space which when reached will trigger an operator alert (but no suspension)	

Table 3-64. Column Descriptions (3 of 19)

Column Name	Column Description	Valid Values
CacheSpaceSecondMark	The percent of free space for an archive which when reached will trigger an operator alert and suspend the archive	
Category	Category of configuration parameter	Config, Status, Interv, Server, AdminConfig
CategoryDescription	Description of a configuration parameter category	
CDSEntry	The name identified in a CDS entry. (i.e., EcCsLandsat7 Gateway)	
CDSName	The name of a CDS component.	
CharPriority	Priority in string form (LOW, HIGH, etc)	LOW,NORMAL, HIGH, VHIGH, XPRESS
CharValue	Stores parameter values for configuration parameters of alphanumeric type.	
CheckinTime	This is the date and time when the media was checked in.	
ChecksumAlgorithmPath	Physical file system path to checksum algorithm	
ChecksumEnabled	Indicates whether checksumming is enabled for this service host	Y, N
ChecksumID	UID for a checksum algorithm type	
ChecksumOrigin	Origin of this checksum	
ChecksumRequired	Indicates whether or not checksumming is turned on for this provider	Y = Yes, N = No
ChecksumStatus	Status of this checksum for this service host	'ACTIVE', 'SUSPENDED', 'SUSPENDEDBYOPERATOR'
ChecksumThroughput	Expected throughput rate in MB/sec for this checksum service	
ChecksumTimeLimit	Time limit in sec for this checksum service	
ChecksumType	Type of checksum to perform	
ChecksumValue	Value of checksum	
ChecksumVerificationFlag	Indicates whether checksum verification is necessary for this file	
Cipher	A dynamic DAAC generated code used in secure distribution processing for Ingest.	
Code	Valid value for specified table/column	One value for each valid column/table value
ColumnName	Column this code is stored in	

Table 3-64. Column Descriptions (4 of 19)

Column Name	Column Description	Valid Values
Comments	User comments for this ECS Service Host	
CommunicationRetryCount	This holds the number of times that a user retries a communication.	
CommunicationRetryInterval	The interval between user communication retries.	
CompChecksumOrigin	Origin of this checksum	
CompChecksumType	Type of compressed checksum	
CompChecksumValue	Value of compressed checksum	
CompletionDate	When this action was completed	
CompletionTime	This is the calculated length of time for completion for a RequestID's (Granule) File.	
CompressionEnabled	Indicates whether compression is enabled for this service host	Y, N
CompressionStatus	Status of this compression for this service	host'ACTIVE', 'SUSPENDED', 'SUSPENDEDBYOPERATOR'
CompressionThroughput	Expected throughput in MB/s for this service	
CompressionTimeLimit	Time limit in seconds for this service	
ConfigID	UID for a configuration parameter	
ConsumedSpace	Used disk space	
ControlEnabled	Indicates whether this operator has 'Control' permission	Y = Yes, N = No
CreationDate	Date/Time this ingest request was created	
CreationTime	Date/Time this intervention was created.	
Criteria	Contains text used to identify filter	
CSDT	This is the Computer Science Data Type (CSDT), (i.e., int, float, double, short, string, LittleEndian_float, LittleEndian_Int, etc.)	See 420-TP-021
CSPercClearPrimary	Cache space percent warn marker	
CSPercClearSecond	Cache space percent suspend marker	
CurrentRequests	Keeps a running total of the number of requests currently in the system for an External Data Provider.	
CurrentTotalRequests	This is the total requests that are currently in the system.	

Table 3-64. Column Descriptions (5 of 19)

Column Name	Column Description	Valid Values
CurrentTotalVolume	This is the total volume of ingested data for all RequestIDs that are currently in the system or that are currently in the system for a Granule Server.	
CurrentVolume	A running total of the volume of RequestIDs currently in the system for an External Data Provider.	
DANFileName	File name of Data Availability Notice (DAN), transmitting availability notification information for a single granule.	
DataDescriptor	This is the data descriptor.	
DataFormat	Format of data files (hdf, etc)	
DataGranuleID	This is the data granule identifier.	
DataGranuleState	This is the state of a data granule.	ArchErr, Archived, Cancelled, New, PreprocErr, Preprocessed, Terminated, Transferred, XferErr.
DataGranuleVolume	Total data volume to be ingested for a data granule in an ingest request. The total data volume for the data granule is determined by summing the data volumes for the files comprising the data granule.	
DataProviderID	UID for an external data provider	
DataProvMediaStorageMgmtKey	This is the data provider media storage management key.	
DataType	This holds primary ESDT short-name of an ECS data type that is handled by a particular data server. (i.e.,AM-1 L0, SAGEIII L0, Radat ALT L0, Landsat7 L0R, SeaWinds,Ancillary, etc.)	See column ShortName in 420-TP-021
DataTypeBypassPreproc	This column determines whether a data type is to have preprocessing bypassed or not when the ProviderBypassPreproc column in the InExternalDataProvider table = MIXED.	NONE – Normal preprocessing is done DIRECT_INSERT – no preprocesssing is done
DateTimeFormat	This is the date time format that the file contains; required for standard handling by Science Data Server (i.e., yy-mm-dd – hh:ii:ss, yyyy-mm-ddThh:ii:ss.ssss, etc.)	

Table 3-64. Column Descriptions (6 of 19)

Column Name	Column Description	Valid Values
DateTimeValueFormat	This is the value of the date time format. (i.e., %06.0f, etc.)	
DDNDestination	This column indentifies the destination where the Data Delivery Notices (DDN) were placed for a given ingest request.	
DefaultFlag	Flag for default	
Description	Description of code	
DoTimeOuts	Flag to indicate whether or not to consider operations with this host to be timed out as defined in ExpectedThroughput and PadWaitTime	
DPLGranuleID	UID in DPL for a granule	
DPLIngestEnabled	Indicates whether this provider is enabled for ingest via DPL	Y = Yes, N = No
DPLIngestFlag	Indicates whether the request associated with this file is ingesting via DPL	Y = Yes, N = No
DynamicFlag	Flag that indicates whether a configuration parameter needs to be dynamically updated in servers	Y = Yes, N = No
EcDbComments	Notes or comments on the database version level.	
EcDbCurrentVersionFlag	Flag indicating if this row represents the current database version entry.	1= Yes, 0 = No
EcDbDatabaseName	The name of the database for which this database version level is applied.	
EcDbDropDescription	The official description of the ECS software drop for this database version level.	
EcDbDropInstallDate	The date and time that the database version level was installed.	
EcDbDropVersion	The official name of the ECS software drop for this database version level.	
EcDbSchemaVersionId	The subsystem-specific identifier for this database schema version.	
EcDbSybaseServer	The name of the baseline Sybase SQL server controlling this database.	See 920-TDx-009
EcDbSybaseVersion	The software release version of the Sybase SQL server in place when this database version level was initially installed.	

Table 3-64. Column Descriptions (7 of 19)

Column Name	Column Description	Valid Values
EcDbUpdateProcess	The installation method by which this database version level was installed.	
ECSGranuleID	AIM UID for a granule	
EmailAddress	This is the email address of the external data provider.	
EmailStatus	Indicates whether email was sent for this action	NULL, COMPLETED, RETRY
EsdtType	ShortName and VersionID concatenated together	See column Shortname in 420-TP-021
ExpectedThroughput	Minimum expected throughput in MB/sec for ftp via this host	
ExpeditedDataType	This is the name of the expedited data type.	See column Shortname in 420-TP-021
ExpeditedVersionID	This is the version identifier of the expedited datatype.	
ExpirationDate	When granule is to qualify for DPL Cleanup	
ExpirationDateTime	Date/time by which the corresponding ingest request must be completed (i.e., archive insertion complete and response returned to the External Data Provider).	
ExpiredFlag	A boolean flag indicating whether data has passed the expiration date.	“Y”=Yes, “N” = No
ExtConvFileName	This holds the provider's external file name to be converted.	
ExtConvType	This is the external file type to be converted.	Script, SharedObject
ExternalDataProvider	This is the name of the External data provider.	
FieldLength	The field length of the file.	
FieldLocationOffset	This is the integer location offset for the field.	
FileCksumType	Contains the specific type of file checksums that are to be used in verifying end-to-end checksum.	
FileClass	This holds the 3-letter acronym name class of the file (i.e., TEX, HDF).	
FileName	Indicates name of file and (by extension) whether this is a PAN or PDRD file type	
FileNumber	This is the file number indicator.	
FileSize	This attribute represents the size of the individual file.	

Table 3-64. Column Descriptions (8 of 19)

Column Name	Column Description	Valid Values
FileState	This is the current processing state of the file being ingested.	NULL, New, Failed, Successful
FileStatus	Final error status for the ingest processing of a data granule.	
FileSystemID	UID for a DPL File system	
FileSystemLabel	UID for a DPL File System	
FileTransferStatus	Indicates whether a notification was sent in FTP/SCP for this action	NULL, COMPLETED, RETRY
FileType	This holds the valid file type of the ingest file.	SCIENCE, METADATA, BROWSE, NATIVE, HTML, TEXT, PDF, POSTSCRIPT, BROWSE_METADATA, RTF, DANFILE, DOCUMENT, DATA, IMAGE1, IMAGE2, IMAGE3, IMAGE4, IMAGE5, IMAGE6, IMAGE7, IMAGENo, CALIBRATION, MSCD, PCD, Browse ALGORITHM, ANCILLARY, CAL_COEF, DAP, DDIST, GRIBDATA, HDF, HDF-EOS, LINKAGE, METADATA0, METADATA1, METADATA2, ORBIT, PRODHIST, QA , QA_METADATA, SCIENCE1, SCIENCE2
FileTypeTemplateKey	The unique grouping of all related FileTypes.	
FileXferEnabled	Indicates whether file transfers are enabled for this service host	Y, N
FileXferStatus	Status of this file transfer for this service host	‘ACTIVE’, ‘SUSPENDED’, ‘SUSPENDEDBYOPERATOR’
FloatValue	Stores global configuration parameters of type FLOAT	
FreeSpaceGB	the DPL free space in GB	
FtpMode	Passive or Active	PASSIVE, ACTIVE
FTPPassword	This is the FTP user password used by the external data provider. This is used to access the External Data Provider's system.	

Table 3-64. Column Descriptions (9 of 19)

Column Name	Column Description	Valid Values
FTPPasswordSize	This is the FTP user password size used by the external data provider. This is used to access the External Data Provider's system.	
FTPUsername	The FTP user name used by the external data provider. Used to access the External Data Provider's system.	
GranSeqNum	Sequence of the granule for this file	
GranuleCompleted	Ingest granule completion indicator.	
GranuleHandle	This is the name of the granule handle. The granule handle is used to identify the granule to be accessed by the software.	
GranuleRpcID	This is the remote procedure call identifier associated with the granule for a given ingest request.	
GranuleServerURKey	Holds the Granule ServerID that is mapped to a specific Granule Server's name.	
GranuleSize	Size in MB of granule	
GranuleStatus	Status of granule	"Queued", "Processing"
GranuleUR	Universal reference for a granule	
GroupLabel	This is a label for a group that a file contains.	BEGIN- END START- STOP, DATASTART- DATAEND, SUBSTART- SUBSTOP, STARTDATETIME- ENDDATETIME
HostAddress	IP Address of a host	
HostID	UID for a remote host	
HostLabel	Hostname for this ECS service	
HTMLPassword	This is the HTML user password used by the external data provider.	
HTMLPasswordSize	This is the HTML user password size used by the external data provider.	
IngestAdminEnabled	Indicates if this operator has Ingest Administration permissions	Y = Yes, N = No
IngestFtpKey	This is the ingest FTP Key.	
IngestFTPPassword	This is the ingest FTP user password.	
IngestFTPPasswordSize	This is the ingest FTP user password size.	
IngestFTPUsername	The ingest FTP user name.	
IngestGranID	UID for a granule	

Table 3-64. Column Descriptions (10 of 19)

Column Name	Column Description	Valid Values
IngestPriority	This is the ingest priority assigned to a request.	Normal, High, Low
IngestType	The type of Ingest processing requested.	Auto, Interactive, Media, Polling_w/DR, Polling_wo/DR
IgnoreValidationWarning	Used to tell server to ignore validation warning	Y, N
InitialRpcID	The first RPC id created for an Ingest request at the time when the request is received by Ingest. As a request moves through Ingest, its RPC id changes as rpcs to other servers are made. The InitialRpcID is used for fault recovery so that a request which is warm started has the same sequence of RPC ids as it initially had.	
InsertChecksumStatus	One of: ACTIVE, SUSPENDED, or SUSPENDED BY OPERATOR	
InsertCopyStatus	One of: ACTIVE, SUSPENDED, or SUSPENDED BY OPERATOR	
InsertCopyThroughput	Insert copy throughput in MB/sec	
InsertCopyTimeLimit	Pad time in secs	
InsertDate	Date/Time this row was inserted	
InsertMaxConcurrentChecksums	Maximum number of concurrent checksum operations	
InsertMaxConcurrentCopies	Maximum number of concurrent copy operations	
InsertComplete	Percent of granules that have been inserted for this request	
InsertStatus	Insert status	
InternalFileType	Identifies the type of internal file.	Metadata, Science, Browse, ScienceN, BrowseN, NativeN = number
InterventionID	UID for an intervention	
InterventionStatus	Status of intervention	
IntPriority	Integer value of priority	
IntValue	Holds integer value for config parameters	
IPAddress	The internet protocol web address.	
LastCheckpointedState	Last known completed status of this request	See ‘Valid Granule States’ below

Table 3-64. Column Descriptions (11 of 19)

Column Name	Column Description	Valid Values
LastError	Last error status for this row	XferErr, ChecksumErr, CompressErr, CompChecksumErr, PreprocErr, ArchErr, InsertErr, PubErr
LastUpdate	Last time this row was added or updated	
LineDelimiter	This attribute will define the symbol used to indicate the end of a parameter-value metadata statement.	
ListID	UID for this list row	
ManagementType	Indicates type of action (add, delete, etc)	ADD, RESUME, DELETE, SUSPEND, RESUME, UPDATE
MandatoryFlag	Flag indicating if a field in the MCF is mandatory or not.	0 = not mandatory, 1 = mandatory
MaxConcurrentFileXfers	Maximum number of concurrent file transfers for this service	
MaxConcurrentOps	Maximum number if concurrent FTP ops for this host	
MaxConcurrentWrites	Maximum number of concurrent writes for this archive service	
MaxGranules	Maximum number of granules for this provider	
Maximum	The maximum number of fields in the file comprising a given defined datatype.	
MaximumRequests	The maximum requests available for the external data provider.	
MaximumTotalRequests	The maximum requests that the system can hold at a time.	
MaximumTotalVolume	This is the maximum volume of data that the system can hold at a time.	
MaxOps	Indicates whether this service is active or suspended	
MaxRetries	Maximum number of retries for a failed operation for this host	
MaxThroughput	Best throughput in this time period	
MediaId	Unique identifier used to identify a certain piece of hard media (DTF Tape)	
MediaStorageMgmtKey	A System's Parameter, this is the valid storage management key of where the data will be stored.	<HWCI>_<mode> i.e. HWCI2_TS1

Table 3-64. Column Descriptions (12 of 19)

Column Name	Column Description	Valid Values
MediaType	This is the description of the media type.	Nomm Tape, D3 Tape, DTF Tape
MessageID	UID for an message in this table	
MessageSource	OPERATOR or SYSTEM	OPERATOR, SYSTEM
MessageStatus	NULL, READY or COMPLETED	NULL, READY or COMPLETED
MessageType	Indicates type of action (add, delete, etc)	ADD, CANCEL, RESUME, DELETE, FAIL, RESTART, RETRY, SUSPEND, RESUME, UPDATE
MetadataSpecialization	This attribute holds the specialization of the metadata in the file.	SCENE, InBOMetaData, InPVMetadata, InFDDMetadata, InFDDMetaData, InODLMetadata, InODLMetaData, InBUFRMetadata, InNCEPMetadata, InISSCPMetadata, InOZONESBMetadata, InNCEPT62MetaData
MinArchSize	Minimum archSize	
Minimum	The minimum number of fields in the file.	
MinThroughput	Worst throughput rate for this time period	
Mission	This is the name of the mission which generated the data to be ingested. (i.e., AM-1).	
MonitorTimeForCompletedRequest	This is the length of time a request is held before the request information can be moved to the archive (InRequestSummary) tables.	
myLock	Current lock value	
NextID	Automatically generated in a sequential order by the database, this provides the unique RequestID.	
NextSourceID	Holds the next available number for a new ingest request.	
NodeName	This holds the path were the data granule exists.	
NonEcsFlag	Flag for non-ECS	
Notes	User or system notes	
NoteSeqNum	Sequence number of note	

Table 3-64. Column Descriptions (13 of 19)

Column Name	Column Description	Valid Values
NotificationID	UID for an action in this table	
NotificationStatus	NULL, READY or COMPLETED	NULL, READY, COMPLETED
NotifyFTPDirectory	This is the directory where the notify FTP exists.	
NotifyFTPNode	This is the path where the notify FTP exists.	
NotifyFTPPassword	This is the notify FTP password.	
NotifyFTPPasswordSize	This is the notify FTP password size.	
NotifyFTPUsername	This is the notify FTP user name.	
NotifyHostID	UID for the notification host	
NotifyMethod	Method of notification	
NotifyNamingConv	The naming convention governing a notification.	
NotifyOperator	This is number for the operator to be notified.	
NotifyStatus	Status of notifications for this data provider	ACTIVE, SUSPENDED
NotifyType	This is the valid Notify Type.	Buffer , EDOS, PVL
NumFiles	Number of files in this request	
NumGransProcessed	Number of granules that have completed processing	
NumGranules	Number of granules in this request	
NumGranulesArchived	Number of granules archived in this period	
oldResourceID	oldResourceID that has been replaced	
OperatorEncrPasswd	Encrypted operator password	
OperatorID	UID for an operator	
OperatorName	Login name for an operator	
OriginalFileName	Original file name	
Outcome	Outcome of intervention	
OutputDestination	This is the name of a subsystem where the output data will be placed. (i.e.,AIM)	
OverallStatus	Derived overall status for this host	
QueuedDate	Rrequest queued datetime	
PadWaitTime	Extra time before an FTP operation is to be considered timed out	
Page	Page of filter	
PanCreated	Indicates whether processing has created a notification action for this request	NULL, Y

Table 3-64. Column Descriptions (14 of 19)

Column Name	Column Description	Valid Values
ParameterClass	This is the Parameter Class of the file.	OBJ, PV, TOOLKIT
ParameterClassDefault	This is the default for a parameter class.	
ParameterDesc	Description of this config parameter	
ParameterName	Name of this parameter	
ParameterType	Type (Integer, Float, Character) of this parameter	I, F, C
PDRFilename	Name of PDR file for this request	
PDRFileName	Name of PDR file for this request	
PercentChecksum	Percent of requests to checksum for this provider	
PollingFrequency	How often to poll this location	
PollingLocationID	UID for a polling location	
PollingLocName	Unique name for a polling location	
PollingLocOwner	Owner (DPLINGEST, CLASSIC) of this location to serve as a mutex	DPLINGEST, CLASSIC, NULL
PollingLocStatus	Whether polling for this location is active or suspended	ACTIVE, SUSPENDED, SUSPENDEDBYOPERATOR
PollingMethod	ftp or local host (cp)	
PollingPath	Directory to poll	
PortNumber	Port number that this service resides on	
PostTransferSizeCheck	The size of the file after transfer is complete.	
PreprocFilenameUuid	Holds the initial metadata file names whenever EcInGran has been warm started.	
PreprocComplete	This is the number of pre-processing completed.	
PreprocComplete	This is the percentage of pre-processing completed.	
PrimaryFlag	This is the flag for the primary data type.	0 = not a primary data type 1= a primary data type
ProcessingEndDate	Date/Time processing ended for this request.	
ProcessingEndDateTime	This is the processing end date and time for ingest of a data granule.	
ProcessingStartDate	Date/Time processing began for this request.	
ProcessingStartDateTime	This is the processing start date and time for ingest of a data granule.	
ProductSpecific	This is the granule's product specification.	

Table 3-64. Column Descriptions (15 of 19)

Column Name	Column Description	Valid Values
ProtocolFlag	Indicates the transfer protocol	Indicates the transfer protocol 0 = LOCAL 1 = FTP 2 = SCP
ProviderBypassPreproc	This column determines whether the Ingest preprocessing of data from the external data provider is to be normal preprocessing, SIPS preprocessing, cross-mode Ingest preprocessing, no preprocessing or different types of preprocessing depending on the data type.	
ProviderID	UID for a data provider	
ProviderType	Type for a data provider	
PVSeparator	This attribute will define the separator symbol used in between the parameter-values (i.e., =).	
ReadStatus	Indicates whether reads to this host are active or suspended	ACTIVE, SUSPENDED, SUSPENDEDBYOPERATOR
ReqActivationStatus	Indicates whether transfers are active or suspended for this provider	ACTIVE, SUSPENDED, SUSPENDEDBYOPERATOR
ReqMgrRpcID	The remote procedure call identifier of the Request Manager for an ingest request	
RequestID	This is the request identifier automatically generated from the InNextAvailableID table.	
RequestPriority	The information that determines the order in which an ingest request will be processed relative to other ingest request waiting to be processed. The InExternalDataProvider provides this priority for each external data provider.	LOW, NORMAL, HIGH, VHIGH, XPRESS
RequestSize	Size in MB of request	
RequestState	The current processing state of an ingest request.	Active, Suspending, Suspended, SettingPriority, Canceling, Resuming, Successful, Cancelled, Failed, Partial_Failure, Terminated

Table 3-64. Column Descriptions (16 of 19)

Column Name	Column Description	Valid Values
RequestStateKey	A numeric identification of the current state of an ingest request.	1 - Active, 2 - Suspending, 3 - Suspended, 4 - SettingPriority, 5 - Canceling, 6 - Resuming, 7 - Successful, No - Cancelled , 9 - Failed , 10 - Partial_Failure, 11 - Terminated,
RequestStatus	Status of this request	See 'Valid Request States' below
RequiredFlag	This is a flag that is set if the file is to be required for a granule.	0 = not required, 1 = required
ResourceID	UID for an alert, Contains resource information associated with an alert such as ftp host, ecs service, etc	
ResourceName	Name of resource	
ResourceType	Type of resource (polling dir, host, etc)	
ResubmitFlag	Indicates whether this request is a resubmission	0 = not resubmitted, 1 = resubmitted
RetryCount	This holds the number of attempts to retry ingest of the data granule.	
RetryInterval	Time period in between retrying a failed operation for this host	
RetryMode	Indicates whether retrying for this host is automatic or manual	A, M
ScienceSpecialization	This attribute holds the specialization of the science data in the file.	See ECSTopicKeyword, ECSTermKeyword, ECSVariableKeyword, ECSParameterKeyword in 420-TP-021
ScpEnabled	Indicates whether scp is enabled for this service host.	Y, N
ScreenUpdateInterval	A System's Parameter, this is the length of time (in minutes) between updates to the GUI screens.	
SdsrvUR	The universal reference for the Science Data Server where this Data Type will be stored.	
SecondaryDataType	This holds the secondary ESDT ShortName of a DataType that is handled by a particular Data Server.	See ShortName in 420-TP-021
SecurityAdminEnabled	Indicates whether this operator has security administration privileges	Y = Yes, N = No

Table 3-64. Column Descriptions (17 of 19)

Column Name	Column Description	Valid Values
SequenceID	The sequence identifier of the request in relation to other requests.	
SequenceNum	Processing sequence for this granule state	
ServerName	Name of server for this message type	Processing, Notification, Polling
ServerType	Specifies either AIM or Document Server (Dcsrv) to connect to using the SdsrvUR.	
ServiceHostID	UID for an ECS Service	
ShortName	Shortname of granule	
Silo	Name of silo	
SizeDataArchived	Amount of data in MB archived for this archive in time period	
Source	Indicates whether note is from Operator or System generated	O, S
SourceDirectoryID	The source directories where the files can be found.	
SourceID	Unique identifier of a Source Metadata Configuration File.	
SourceMCF	The acronym used to identify a source Metadata Configuration File (MCF). (i.e., AST_L1, L7OR1,TRMMEPH1,ODL11)	See Column Shortname in 420-TP-021
SourceParameter	The name that the external data provider uses for a metadata attribute or field.	
SpaceChecked	Date time that space is checked	
SpecialProcessing	This row is to specify if the request to be processed is special.	
SpecProc	The number of special processes.	
SSHType	The type of secure shell that is used for Ingest logging operations for secure distribution.	
StagingDir	Directory to which this granule will be staged	
StartDate	Beginning of time period for this statistics row	
State	Current state of External Data Provider's request processing. (i.e.: Active, Suspended)	

Table 3-64. Column Descriptions (18 of 19)

Column Name	Column Description	Valid Values
Status	Indicates whether action is ready or completed	"READY","COMPLETED" Valid granule status (see Valid Granule States' below
StatusDetail	Free form text field with status details	
StopDate	End date/time for this statistics row	
StorageMgmtKey	This holds the valid Storage Management Key (<HWCI>) of where the data will be stored (i.e.: DRP1, SGI, HWCI1, ICL1).	
StringDelimiter	This attribute will define the symbol used to indicate the end of a parameter-value metadata string.	
Suspension	Type of suspension	
SysParameterID	The unique identifier of system parameter entries.	
TableName	Table for code	
TargetParameter	The name that ECS uses for a metadata attribute or field.	
TestDataType	The name of the test data type.	
Throughput	Throughput for this granule in MB/sec	
TimeToArchive	Time (in seconds) from submit of archive request to Data Server to receipt of completion status (success or fail).	
TimeToChecksum	Number of seconds to checksum this granule	
TimeToCompChecksum	Number of seconds to comp checksum for this granule	
TimeToCompress	Number of seconds to compress for this granule	
TimeToInsert	Number of seconds to insert for this granule	
TimeToPublish	Number of seconds to publish in DPL for this granule	
TimeToPreprocess	Time (in seconds) from start of preprocessing of granule to time of completion (success or fail) of preprocessing.	

Table 3-64. Column Descriptions (19 of 19)

Column Name	Column Description	Valid Values
TimeToXfer	Time (seconds) from start of transfer for 1st file in granule to time of receipt of status (success or fail) for last file in granule.	
TotalDataVolume	This is the total data volume of the granule.	
TotalFileCount	This is the total number of files for the request.	
TotalGranuleCount	This is the total number of granules for the request.	
TotalSuccessfulGranules	This is the total number of data granule successful ingested.	
TransferFlag	This is a flag to indicate the transfer of data.	0 – local; 1- Ftp; >1 - Scp
TransferHostID	Host ID of the transfer host	
TuningEnabled	Indicates whether this operator has tuning privileges	
Units	Units for this config parameter	
UUID	The user id for an external data provider.	
VersionID	This holds the version identifier of the data type for the InCurrentDataTypeMap, InDataType tables.	
ViewEnabled	Indicates whether this operator has view privileges	Y = Yes, N = No
VolumeID	This is the volume identifier for the media check in for the InMediaCheckin.	
VolumeThreshold	This is the volume limit available for the External Data Provider.	
WorkedBy	Worker for intervention	
WriteStatus	Indicates whether writes are active or suspended for this host	ACTIVE, SUSPENDED, SUSPENDEDBYOPERATOR
XarID	ID for granule XAR info	
XarType	Granule XAR type	
XferDate	Transfer date	
XferComplete	This is the percentage transfer of granule complete.	
XferComplete	This is the number of completely transfered granules.	

Table 3-65 shows the Valid Request States.

Table 3-65. Valid Request States

RequestState
New
Active
Partially_Suspended
Suspended
Cancelling
Resuming
Successful
Cancelled
Failed
Partial_Failure
Terminated
Cleaned_PDRFile
Partially_Cancelled
Validated
Suspending

Table 3-66 shows the Valid Granule States.

Table 3-66. Valid Granule States

Granule State
Suspended
New
Transferring
Transferred
Checksumming
Checksummed
Compressing
Compressed
CompChecksumming
CompChecksummed
Preprocessing
Preprocessed
Archiving
Archived
Inserting
Inserted

Alert Types and Descriptions

AlertType	Alert Description	Suspension
ARCH_FIRST_THRESHOLD	A configured free space limit has been reached for this archive. An alert will be generated but this archive will remain active	NULL
ARCH_NO_FS_ACCESS	The target file system cannot be accessed	Archive
ARCH_SECOND_THRESHOLD	A configured free space limit has been reached for this archive. An alert will be generated and this archive will be suspended	Archive
ARCH_WRITE_CONSEC_ERRORS	The number of allowed, consecutive, distinct, failed write operations has been reached for this archive	Archive
CUSTOM_DATA_LOG_DIR_NEARLY_FULL	The configured space limit has been reached for the CUSTOM data log directories. An warning alert will be generated.	NULL
DPIU_STATUS	The Data Pool Insert Utility has failed to process a request	dpiu
DPL_FS_CONSEC_ACCESS	The number of allowed, consecutive, failed access attempts has been reached for this File System	DPLFileSystem
DPL_FS_DOWN	The Data Pool file system is down	DPLFileSystem
DPL_FS_FULL	A configured free space limit has been reached for this file system. An alert will be generated and this file system will be suspended	DPLFileSystem
DPL_FS_THRESHOLD	A configured free space limit has been reached for this file system. An alert will be generated but this file system will remain active	NULL
EMAIL_NOTIFICATION_DOWN	Email services are not contactable. Unable to send email notifications	email
HOST_CONNECT	The transfer host is not contactable	Read
HOST_CONNECT	The transfer host is not contactable	Write
HOST_CONSEC_FILE_XFER	The number of allowed, consecutive, failed transfer attempts has been reached for this transfer host	Read

Alert Types and Descriptions (Cont'd)

AlertType	Alert Description	Suspension
HOST_CONSEC_PAN_PDRD_XFER	The number of allowed, consecutive, failed transfer attempts of PANs/PDRDs has been reached for this transfer host	Write
HOST_LOGIN_FILE_RETRIEVAL	Login has failed for file retrieval from this transfer host	ProviderRead
HOST_LOGIN_PAN_PDRD	Login has failed for PAN/PDRD transfer to this transfer host	ProviderWrite
HOST_TOO_MANY_TIMEOUT_READ	The number of allowed, consecutive, failed read operations due to timeout has been reached for this transfer host	Read
HOST_TOO_MANY_TIMEOUT_WRITE	The number of allowed, consecutive, failed write operations due to timeout has been reached for this transfer host	Write
IIU_STATUS	Indicates whether the IIU is functioning or not	iiu
NOTIFICATION_DEST_DIR_NOT_EXIST	The destination directory for notifications does not exist	Notification
NOTIFICATION_DEST_DIR_NO_PERM	The destination directory for notifications cannot be written to due to permission restrictions	Notification
POLL_LOC_SOURCE_DIR_NOT_EXIST	The source directory for this polling location does not exist	PollingLocation
POLL_LOC_SOURCE_DIR_NO_PERM	The source directory for this polling location cannot be read from due to permission restrictions	PollingLocation
SRVC_CANNOT_CONNECT	The ECS Service is not contactable	ECSService
SRVC_CONSEC_ERRORS	The number of allowed, consecutive, incomplete, distinct service requests has been reached for this ECS Service	ECSService
SRVC_CONSEC_TIMEOUT	The number of allowed, consecutive, incomplete, distinct service requests due to timeout has been reached for this ECS Service	ECSService
XVU_STATUS	Indicates whether the XVU is functioning or not	xvu

Intervention Types and Descriptions

Intervention Type	Description
FILE_XFEFR_FAIL	If the file transfer for a granule fails, unless the failure signals the need for an operator alert
LINKAGE_FAIL	In the course of translating the linkages, one of the referenced granules cannot be found after N attempts
METADATA_VAL_FAIL	Metadata validation fails for a granule
ARCHIVE_FAIL	Archiving of a granule fails
SDSRV_MET_INSERT_FAIL	AIM metadata insertion for a granule fails
DPL_PUBLICATION_FAIL	Data Pool publication of a granule fails

3.1.4 Domains

Sybase supports the definition of specific data types, domains; to further limit the format of data for given column. User-defined data types are no longer used in the INGEST database.

3.1.5 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 INGEST database.

3.1.6 Defaults

Defaults are used to supply a value for a column when one is not defined at insert time. The defaults defined in Sybase for the INGEST database are described herein.

Column Default	Default Value
InExternalDataProvider. ChecksumRequired	Y
InExternalDataProvider. PercentChecksum	100
InExternalDataProvider. ReqActivationStatus	ACTIVE
InExternalDataProvider. NotifyStatus	ACTIVE
InExternalDataProvider. MaxGranules	30
InExternalDataProvider. RetryMode	A
InExternalDataProvider .NotifyMethod	EMAIL
InArchive.ArchiveStatus	ACTIVE
InArchive.InsertStatus	ACTIVE
InArchive. FreeSpaceGB	0
InECSServiceHost.ScpEnabled	N
InDataType.IgnoreValidationWarning	N
InDPLIngestFile.ChecksumVerificationFlag	N
InDPLIngestPDR.PreprocComplete	0
InDPLIngestPDR.ArchComplete	0
InDPLIngestPDR.XferComplete	0
InDPLIngestPDR.InsertComplete	0
InDPLIngestGranule.GranuleCompleted	0
InDataType. IgnoreValidationWarning	N

Column Default	Default Value
InGranuleFacts.MinArchSize	0.0
InHostStats.HostID	0
InOperatorAlert.ServerName	‘’
InHostTransferProtocol.ProtocolFlag	1
InTempIngestThroughput.HostID	0
InXAR.LastUpdate	getdate()

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. The INGEST database uses views for EMS processing.

InExternalDataProviderInfo Columns:

Column Name	Data Type	Nulls
ExternalDataProvider	Varchar(20)	Yes
CDSEntry	Varchar(255)	No
CurrentRequests	int	Yes
CurrentVolume	float	Yes
EmailAddress	Varchar(255)	No
FTPUsername	Varchar(10)	No
IngestPriority	Varchar(10)	Yes
IngestType	Varchar(40)	Yes
MaximumRequests	int	Yes
PostTransferSizeCheck	tinyint	Yes
UUID	Char(36)	No
VolumeThreshold	float	Yes
FTPPassword	Varbinary(30)	No
FTPPasswordSize	int	No
HTMLPassword	Varbinary(30)	No
HTMLPasswordSize	int	No
NotifyType	Varchar(1)	No
NotifyOperator	tinyint	No
NotifyFTPNode	Varchar(255)	No
NotifyFTPDirectory	Varchar(255)	No
NotifyFTPUsername	Varchar(10)	No
NotifyFTPPassword	Binary(30)	No
NotifyFTPPasswordSize	Int	No
TransferFlag	Tinyint	Yes
DataProvMediaStorageMgmtKey	Varchar(30)	No
NotifyNamingConv	Varchar(10)	Yes

Column Name	Data Type	Nulls
ProviderBypassPreproc	Varchar(20)	Yes
ChecksumRequired	Char(1)	No

InDataTypeTemplate columns:

Column Name	Data Type	Nulls
DataType	varchar(32)	Yes
DataTypeBypassPreproc	varchar(20)	Yes
ExpeditedVersionID	varchar(16)	No
FileTypeTemplateKey	varchar(32)	Yes
GranuleServerURKey	tinyint	Yes
IngestFtpKey	varchar(30)	Yes
OutputDestination	char(40)	No
PrimaryFlag	tinyint	Yes
SdsrvUR	varchar(255)	No
SecondaryDataType	varchar(32)	No
ServerType	char(5)	No
StorageMgmtKey	varchar(30)	Yes
TestDataType	varchar(32)	No
VersionID	varchar(16)	Yes

EMSIng_View columns:

NAME	Datatype	Nulls
ECSGranuleID	numeric(16)	No
DataType	varchar(32)	No
DataGranuleVolume	float(8)	Yes
DataGranuleState	varchar(30)	Yes
ExternalDataProvider	varchar(20)	No
ProcessingStartDateTime	varchar(18)	Yes
ProcessingEndDateTime	varchar(18)	Yes
TimeToArchive	int	Yes
TimeToPreprocess	int	Yes
TimeToXfer	int	Yes

3.1.8 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 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 can not be performed if a declarative constraint has been used. All declarative integrity constraints defined in the INGEST database are described in Tables 3-67 through 3-85.

Table 3-67. Dependencies on Table: InArchive

Referenced by	Primary Key	Foreign Key
InDPLIngestGranule	ArchiveID	ArchiveID
InDPLIngestGranule	ArchiveID	AltArchiveID
InGranuleFacts	ArchiveID	ArchiveID

Table 3-68. Dependencies on Table: InConfigCategory

Referenced by	Primary Key	Foreign Key
InConfigParameter	Category	Category

Table 3-69. Dependencies on Table: InDataType

Referenced by	Primary Key	Foreign Key
InPollingWithoutDRESDT	DataType, VersionID	DataType, VersionID

Table 3-70. Dependencies on Table: InDPLIngestGranule

Referenced by	Primary Key	Foreign Key
InDPLIngestFile	IngestGranID	IngestGranID
InGranuleFacts	IngestGranID	IngestGranID
InProcessingServerMessage	IngestGranID	IngestGranID
InSuspendedGranule	IngestGranID	IngestGranID
InXAR	IngestGranID	IngestGranID

Table 3-71. Dependencies on Table: InDPLIngestPDR

Referenced by	Primary Key	Foreign Key
InDPLIngestGranule	RequestID	RequestID
InGranuleFacts	RequestID	RequestID
InOperatorIntervention	RequestID	RequestID
InProcessingServerMessage	RequestID	RequestID
InRequestNote	RequestID	RequestID

Table 3-72. Dependencies on Table: InExternalDataProvider

Referenced by	Primary Key	Foreign Key
InGranuleFacts	DataProviderID	DataProviderID
InNotification	DataProviderID	DataProviderID
InPollingWithoutDRXref	DataProviderID	DataProviderID
InPollingLocation	DataProviderID	DataProviderID

Table 3-73. Dependencies on Table: InGranuleState

Referenced by	Primary Key	Foreign Key
InDPLIngestGranule	DataGranuleState	GranuleStatus

Table 3-74. Dependencies on Table: InHistoricRequest

Referenced by	Primary Key	Foreign Key
InRequestNoteSummary	RequestID	RequestID

Table 3-75. Dependencies on Table: InHostTransferProtocol

Referenced by	Primary Key	Foreign Key
InPollingLocation	HostID	HostID
InSuspendedHostXref	HostID	HostID
InExternalDataProvider	HostID	NotifyHostID

Table 3-76. Dependencies on Table: InMediaType

Referenced by	Primary Key	Foreign Key
InMediaCheckin	MediaType	MediaType

Table 3-77. Dependencies on Table: InOperatorAlert

Referenced by	Primary Key	Foreign Key
InSuspendedHostXref	AlertID	AlertID

Table 3-78. Dependencies on Table: InOperatorConfig

Referenced by	Primary Key	Foreign Key
InOperatorFilter	OperatorID	OperatorID

Table 3-79. Dependencies on Table: InOperatorIntervention

Referenced by	Primary Key	Foreign Key
InInterventionNote	InterventionID	InterventionID

Table 3-80. Dependencies on Table: InPollingLocation

Referenced by	Primary Key	Foreign Key
InPDRList	PollingLocationID	PollingLocationID

Table 3-81. Dependencies on Table: InPollingWithoutDRESDT

Referenced by	Primary Key	Foreign Key
InPollingWithoutDRXref	DataType, VersionID	DataType, VersionID

Table 3-82. Dependencies on Table: InValBypassPreproc

Referenced by	Primary Key	Foreign Key
InDataType	BypassPreproc	DataTypeBypassPreproc

Table 3-83. Dependencies on Table: InValIngestType

Referenced by	Primary Key	Foreign Key
InExternalDataProvider	IngestType	IngestType
InDPLIngestPDR	IngestType	IngestType

Table 3-84. Dependencies on Table: InValNotifyType

Referenced by	Primary Key	Foreign Key
InExternalDataProvider	NotifyType	NotifyType

Table 3-85. Dependencies on Table: InValParameterClass

Referenced by	Primary Key	Foreign Key
InFileTypeTemplate	ParameterClass	ParameterClassDefault
InSourceMCF	ParameterClass	ParameterClass

Table 3-86. Dependencies on Table: InValRequestState

Referenced by	Primary Key	Foreign Key
InDPLIngestPDR	RequestStateKey	RequestStateKey

3.1.9 Triggers

Sybase supports the enforcement of business policy via the use of triggers. A trigger is best defined as set of activities or checks that should be performed automatically by Sybase whenever a row is inserted, updated, or deleted from a given table. Sybase allows the definition of insert, update, and delete triggers for each table. Description of each the triggers in the INGEST database is given in Table 3-87 Trigger code may vary as new drops or test executables for Release 6B are installed into the implemented database. For this reason trigger code listings are no longer included in this documentation but may be reviewed on-line using the installed database.

Table 3-87. Trigger Listing

Table Code	Trigger Name	Trigger Type
InCurrentDataTypeMap	InCDTUpdateTrig	UpdateTrigger
InFileTypeTemplate	InFTTInsertTrig	InsertTrigger
InSourceMCF	InSMCFDeleteTrig	DeleteTrigger
InSourceMCF	InSMCFInsertTrig	Insert Trigger

3.1.10 Stored Procedures

Sybase also includes support for business policy 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 policy 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 listing of each the stored procedures in the INGEST database is given here. A brief definition of each of these stored procedures follows in Table 3-88. Stored procedure code may vary as new drops or test executables for Release 7 are installed into the implemented database. For this reason stored procedure code listings are no longer included in this documentation but may be reviewed on-line using the installed database.

Table 3-88. Procedure Listing (1 of 8)

Name	Description
datawarning	Notifies DBA when data segment threshold is crossed
logdump	Dump the log when log segment threshold is crossed
logwarning	Notify the DBA when log segment approaches capacity threshold
sp_thresholdaction	This is a systems procedure. It executes automatically when the number of free pages on the log segment falls below the last-chance threshold, unless the threshold is associated with a different procedure.
InAckProcessingMesg	Mark a processing server message as complete
InAcknowledgeInterv	Mark an intervention as acknowledged
InAcknowledgeNotifyMesg	Update the status of a message for the notification server
InAcknowledgePollingMesg	Update the status of a message for the polling server

Table 3-88. Procedure Listing (2 of 8)

Name	Description
InAddECSServiceHost	Add a new ECS service host to the database
InAddExternalDataProvider	Add an external data provider to DB
InAddExternalDataProviderAH	Add a new host via InAddHostTransferProtocol, and then use it when calling InAddExternalDataProvider
InAddFileToGranule	Add a file to an existing granule
InAddGranuleToRequest	Add a granule to an existing DPLIngestRequest
InAddHostTransferProtocol	Add a new host to the DB for configuration
InAddIntervWorker	Populate the worker for an intervention
InAddOperatorPageFilter	Add a row to InOperatorFilter for specified operator/pag
InAddPollingLocation	Add a polling location to a data provider
InAddPollingLocationAH	Add a new host via InAddHostTransferProtocol, and then use it when calling InAddPollingLocation
InAddRequestNote	Add an operator or system generated note to a request
InAnnotateIntervention	Add or append to operator notes for an operator intervention
InAppendIntervNotesToReq	Append intervention notes to request notes for a given interevntion id
InArchiveRequests	Move requests that have completed since the configured time period to the archive tables
InCancelGranule	Mark one or more granules as cancelled
InCancelRequest	Cancel one or more DPL Ingest requests
InClearAlert	Close an operator alert and resume any resources that were suspended as a result of the alert creation
InCloseDPLCleanupAction	Acknowledge/close a DPL cleanup action
InCloseIntervention	Close an intervention and record outcome
InColdRestartCleanup	Cleanup database for a cold server restart
InCreateAlert	Add an operator alert to the database
InCreateDPLIngestRequest	Add a new DPL Ingest request to DB
InCreateMessage	Send a message to one or more servers as spcified in InCode
InCreateOperatorIntervention	Create an operator intervention
InDeleteChecksumType	Delete an existing checksum type
InDelDPLCleanupActionByGranID	remove row from InDPLCleanupAction for a given DPL granuleId
InDeleteECSService	Delete one or more ECS Service hosts & associated services from DB
InDeleteExternalDataProvider	Remove one or more external data providers
InDeleteFromPDRList	Delete a row from the PDR file list table
InDeleteHostTransferProtocol	Remove one or more existing hosts from the DB
InDeleteOperator	Remove an operator from the INS database
InDeletePollingLocation	Remove one or more existing polling locations from the DB
InDeleteSSSEventAction	close a SSS event action

Table 3-88. Procedure Listing (3 of 8)

Name	Description
InDelPDRListByListID	Delete from InPDRList for a given ListID
InESDTNeedsSpecProc	Check if data type needs special preprocessing
InFailGranule	Mark a granule as failed
InFreePollingLocation	Remove a lock from a polling location
InGetActiveRequests	Retrieve all active requests
InGetAlert	Retrieve alerts for GUI
InGetAlertStats	Report on granules queued for a resource associated with an alert
InGetAllLabels	Retrieve all labels for all resources
InGetAllVolumeGroups	Retrieve all active volume groups
InGetArchive	Report on archvie status and count/number of granule waiting to be archived for each archive
InGetArchiveConfig	Retrieve archive config info
InGetAssocScienceID	Get ECS ID of science granule for a request and granule sequence number
InGetConfigParameter	Retrieve one or more global configuration parameters
InGetCurrentDataTypeMap	Retrieve all rows from InCurrentDataTypeMap
InGetDPLCleanupAction	Retrieve DPL Cleanup actions for granules that are ready to be cleaned up in DPL
InGetDataType	Retrieve configuration for all data types
InGetDPLDataType	Retrieve configuration for all data types
InGetDPLBrowseFileNames	Returns DPL browse fileNames for a given granuleId
InGetDPLFileNames	Returns DPL fileNames for a given granuleId
InGetDPLFSConfig	Retrieve the configuration settings for 'PERC_FULL_DPL_FS_WARN', 'PERC_FULL_DPL_FS_CLEAR_WARN',
InGetDPLGranDates	Retrieve range beginning date/time for a granule in DPL
InGetDplGranuleInfo	wrapper proc for DPL ProcGetGranInfoByEcsId
InGetDPLIngestGuiHome	Retrieve information for DPL Ingest GUI Home page
InGetDataTypeForGUI	Retrieve configuration for all data types
InGetDefaultVersionID	Retrieve default version id for give data type
InGetECSService	Retrieve configuration & status for one or more ECS services
InGetEDPAddressMap	Retrieve DataProvider for a given IPAddress
InGetExpiredNotifications	Retrieve all expired notifications
InGetExternalDataProvider	Retrieve one or all data providers from the DB
InGetDPLBrowseFileNames	returns DPL browse fileNames for a given granuleId
InGetFSStats	Retrieve File Type information for given File Type key
InGetFileSystemStatus	Resport on DPl file system status relative to staging and counts/size of data waiting to be archived for each file system
InGetFileType	Retrieve all file system statuses

Table 3-88. Procedure Listing (4 of 8)

Name	Description
InGetFullPDRList	Retrieve all PDRs from InPDRList table
InGetGeneralHost	Retrieve general Host configuration info
InGetGransForResource	Retrieve all suspended granules for a resource
InGetGranuleDetail	Retrieve a list of files associated with a granule
InGetGranuleFiles	Retrieve all active files for a granule
InGetGranuleLinkage	Retrieve granle UR list for a granule
InGetGranuleReport	Retrieve granule statistics for specific esdts or providers
InGetGranulesForRequest	Retrieve all granules for a specified request
InGetGranules_arch	Retrieve granule info for an archived request
InGetHostByCategory	Retrieve Host configuration info by category
InGetHostByHostAddress	Retrieve Host configuration info by HostAddress
InGetHostByHostID	Retrieve Host configuration info by HostID
InGetHostByHostLabel	Retrieve Host configuration info by HostLabel
InGetID	To get the next availble number for a new ingest request and increment the number for the next request
InGetIngestDataType	Retrieve configuration for all data types
InGetInternalFileType	Retrieve internal file type for an esdt
InGetInterventionDetail	Retrieve a single operator intervention by id along with any annotations for the intervention
InGetIntervsForRequest	Get list of interventions for a request
InGetNewRequests	Retrieve newest requests for processing server
InGetNextElement	Pop off the head of a vector using specified delimiter
InGetNotifyActions	Retrieve notifications based on starting row id
InGetNotifyMessage	Retrieve global messages for notification server
InGetOpenAlerts	Used by servers to retrieve open alerts at startup
InGetOpenInterventions	Retrieve open interventions based upon specified filters
InGetOpenSSSEventAction	Retrieve OPEN SSS event actions for granules
InGetOperatorConfig	Retrieve the name and password & permissions for one or all operators
InGetOperatorFilter	Retrieve saved filter for specified page/operator
InGetPDRList	Retrieve list of PDR file names for a given polling location
InGetPollingDestFS	Retrieve file system associated with polling destination
InGetPollingLocation	Retrieve polling location info for a provider or by uid
InGetPollingMessages	Return all messages with id greater than specified starting id
InGetPollingWithoutDRESDT	Retrieve eligible Polling_wo/DR provider data types in DataType.VersionID format
InGetPrimaryVolumeGroups	Call DsStGetPrimaryVG
InGetPriorityMap	Retrieve the mapping of integer to character priority
InGetProcessingMesg	Retrieve actions for processing server starting from specified starting point
InGetProviderReport	Retrieve data statistics grouped by provider

Table 3-88. Procedure Listing (5 of 8)

Name	Description
InGetQPProviderStats	Get number and size of granules queued and in processing by provider
InGetRequestDetail	Get detailed info for a specific request
InGetRequestGrans	Retrieve all active granules for a request
InGetRequestNote	Retrieve all notes for a request
InGetRequestNoteSummary	Retrieve historic requests for GUI
InGetRequestPriority	Retrieve priority for a given request
InGetRequestReport	Get Request report for GUI
InGetRequest_arch	Retrieve requests from the INS DB using passed filters and sorting by specified columns
InGetRequest_archDetail	Get detailed info for a specific request
InGetRequests	Retrieve active requests for GUI
InGetSSHCipherMap	Retrive SSHType and Cipher info
InGetSourceMCF	Retrieve source MCF rows for key specified
InGetSuspHostProvider	Retrieve list of suspended logins for specific host/provider combos
InGetSuspHostProviderForGUI	Retrieve provider/host login status for a given host
InGetValidChecksumTypes	Retrieve a list of valid checksum types
InGetVolGroupHistory	Call DsStVGSelectHistory to get all volume groups and ServerIds associated with a VersionedDataType in DsStVolumeGroup
InGetVolGroups	Call DsStVGSelect
InGetVolumeGroupByVolGroupId	Get Volume Group for specified VolumeGroupId
InGetVolumeGroupsForDataType	Call DsStGetVGForDataType
InGetXAR	Retrieve XAR information for a given granule
InInsDPLCleanupAction	Insert a DPL Cleanup action into the cleanup action queue for DPL Ingest
InInsSSSEventAction	Insert a row into InSSSEventAction table
InInsertArchThroughput	Insert a granule fact about archiving
InInsertChecksumType	Insert a new checksum type to database
InInsertGranuleLinkage	Insert a UR to be associated with a granule into InGranuleLinkage
InInsertNotification	Insert a row into main notification table and a blank row in text table
InInsertOperator	Add an operator to the INS database
InInsertToPDRList	Add a file to list of PDRs processed
InInsertToSuspendedGranList	Insert a granule/resource combo into list of suspended granules
InInsertVolumeGroup	Insert a set of records into the DsStVolumeGroup Table by calling DsStVGInsert
InLockPollingLocation	Attempt to lock (or add) a polling location. Adds polling location and host if they don't already exist

Table 3-88 Procedure Listing (6 of 8)

Name	Description
InNextSourceIDGet	Generates a unique SourceID for each SourceMCF record being initially loaded
InParseVector	Parse the elements of a vector and put results into a temporary table #ELEMENTS pre-defined before calling this procedure
InPopulateIngestFact	Populate an ingest throughput fact for this granule
InProcNumObjects	List the number of user created objects in Ingest database
InRemoveCompleteNotifyActions	Remove all completed actions for the notification
InRemoveDPLCleanupAction	Remove completed DPL Cleanup actions
InRemoveHistReqs	Remove historic request from historic requests, granules table, and request summary table that were completed beyond a specified number of months
InRemoveNotifyMesg	Remove completed messages from InNotifyServerMessage
InRemoveOldAlerts	Remove completed alerts from alert table that were completed beyond a specified number of months
InRemoveOldStats	Remove expired throughput statistics from statistics schedules
InRemovePollingMesg	Remove completed messages from
InRemoveProcessingMesg	Remove completed messages from InProcessingServerMessage
InResumeReqsAndGrans	To be used by processing server to avoid reading pending messages on startup. Moves all canceling, suspending and resuming requests/granules to a non-transient state.
InRetryGranule	Mark a granule for retry
InSMCFInsert	Used in EcInDbInitialData*.sql to insert initial data
InSetAsterDataSource	Update AsterDataSource for a granule in InDPLIngestGranule table
InSetGranArchiveFS	Update InDPLIngestGranule. ArchiveID for specified granule.
InSummIngestThroughput	Summarize presently stored granule level throughput and store in historical stats tables by provider and host
InSummarizeThroughput	Summaruze presently stored granule level throughput and store in historical stats tables by archive & file system
InSuspResumeArchive	Suspend or resume one or more archives
InSuspResumeArchiveSvc	Suspend or resume archiving for an ecs service host
InSuspResumeChecksum	Suspend or resume compression for an ecs service host
InSuspResumeDPADChecksum	Suspend or resume DPAD checksum operations on an ECS service host
InSuspResumeDPADCopy	Suspend or resume DPAD copy operations on an ECS service host
InSuspResumeFS	Suspend or resume one or more DPL file systems
InSuspResumeFileXfer	Suspend or resume file transfer for an ecs service host
InSuspResumeHost	Suspend or resume an FTP host

Table 3-88. Procedure Listing (7 of 8)

Name	Description
InSuspResumePollingLoc	Suspend or resume one or more polling locations
InSuspResumeProvider	Suspend notification for a provider
InSuspResumeRequest	Suspend or resume one or more requests
InSuspendGranule	Mark a granule as suspended and update other statuses to record present status
InUpdateArchiveConfig	Update one or more fields for an Archive
InUpdateArchiveDPAD	Update archive status for DPAD
InUpdateArchiveInfo	Update ConsumedSpace and FreeSpaceGB for an archive
InUpdateChecksumType	Update a checksum type or its algorithm path
InUpdateConfigParameter	Update an existing configuration parameter
InUpdateDPLFSConfig	Update an existing configuration parameter
InUpdateDataType	Update one or more configuration items for a data type
InUpdateECSService	Update configuration info for ECS service host
InUpdateExternalDataProvider	Update one or more fields for an existing data provider
InUpdateExternalDataProviderAH	Add a new host via InAddHostTransferProtocol, and then use it when calling InUpdateExternalDataProvider
InUpdateFSInfo	Update Data Pool file system free space info
InUpdateFileChecksum	Update either the compressed or normal checksum for a file
InUpdateFileName	Update the file name for a particular granule id and file name
InUpdateFileSize	Update FileSize for a given granule file
InUpdateFileStatus	Update the status and optionally specify status detail for a file from a DPL Ingest Request Granule
InUpdateGranDataFormat	Update a granule's data format field
InUpdateGranIds	Populate the ecs and/or dpl granule ids for an ingest granule
InUpdateGranSize	Update the GranuleSize, LastUpdate for a given granule
InUpdateGranStagingDir	Update the staging directory for a granule
InUpdateGranStatus	Update the status of a granule & update LastUpdate for this granule
InUpdateGranXferHost	Update transfer host for a granule in facts table
InUpdateHostTransferProtocol	Update one or more configuration parameters for a host
InUpdateNotifyAction	Update one or more fields of a notify action
InUpdateOperator	Update an operator info in the INS database
InUpdatePollingLocation	Update the configuration for a polling location
InUpdatePollingLocationAH	Add a new host via InAddHostTransferProtocol, and then use it when calling InUpdatePollingLocation
InUpdateRequestParams	Update one or more fields in InDPLIngestPDR
InUpdateRequestPriority	Update the priority of one or more requests
InUpdateRequestStatus	Update the status of a request
InUpdateVolumeGroups	Update a record into the DsStVolumeGroup Table by call D sStVGUpdate

Table 3-88. Procedure Listing (8 of 8)

Name	Description
InSPUpdAll	Update the values of CommunicationRetryCount, CommunicationRetryInterval, MonitorTimeForCompletedRequest, ScreenUpdateInterval, MaximumTotalRequests, and MaximumTotalVolume in the InSystemParameters table.
InValidateParameter	Validate a parameter to make sure value is valid

3.2 File Usage

There are cases when the implementation of a persistent data requirement is better suited to a flat file than to a database table. A typical example of such data is system configuration information. System configuration information is fairly static and usually has no explicit relationship to other data in the enterprise. Another common use of files in ECS is as an interface mechanism between ECS and the external world. Files utilized in INGEST are described herein.

3.2.1 Files Definitions

Not Applicable

3.2.2 Attributes

Not Applicable

3.2.3 Attribute Domains

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 Ingest is provided in Table 4-1 Index Type Key. A list and 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) or DESC (descending) order

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

Table Code	Index Code	PK	FK	U	C
EcDbDatabaseVersions	pk_ecdbversions	Yes	No	Yes	Yes
InArchive	PK_INARCHIVE	Yes	No	Yes	Yes
InArchive	inarch_ind1	No	No	Yes	No
InArchiveStatistics	PK_ARCHIVESTATS	Yes	No	Yes	Yes
InConfigCategory	PK_INCONFIGCATEGORY	Yes	No	Yes	Yes
InConfigParameter	PK_INCONFIGPARAMETER	Yes	No	Yes	Yes
InCurrentDataTypeMap	pk_incurrentdatatypemap	Yes	No	Yes	Yes

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

Table Code	Index Code	PK	FK	U	C
InDPLCleanupAction	IDC_dplgranid	No	No	No	No
InDPLCleanupAction	IDC_status	No	No	No	No
InDPLCleanupAction	PK_DPLCLEANUPACTION	Yes	No	Yes	Yes
InDPLFileSystemStats	PK_FSSTATS	Yes	No	Yes	Yes
InDPLIngestFile	IDF_indGID	No	No	No	No
InDPLIngestFile	IDF_indRID	No	No	No	No
InDPLIngestFile	PK_DPLINGESTFILE	Yes	No	Yes	Yes
InDPLIngestGranule	IDIG_indRidGsnDt	No	No	No	No
InDPLIngestGranule	IDIG_indRID	No	No	No	No
InDPLIngestGranule	IDIG_indLER	No	No	No	No
InDPLIngestGranule	pk_inrequestprocessdata	Yes	No	Yes	Yes
InDPLIngestPDR	IDIP_indDPI	No	No	No	No
InDPLIngestPDR	IDIP_indRST	No	No	No	No
InDPLIngestPDR	PK_INDPLINGESTPDR	Yes	No	Yes	Yes
InDataType	pk_indatatype	Yes	No	Yes	Yes
InECSServiceHost	PK_INECSSERVICEHOST	Yes	No	Yes	Yes
InEDPAddressMap	pk_inedpaddressmap	Yes	No	Yes	Yes
InExternalDataProvider	pk_inexternaldataprovider	Yes	No	Yes	Yes
InFileTypeTemplate	pk_ infiletypetemplate	Yes	No	Yes	No
InFileTypeTemplate	inftt_ind1	No	No	No	Yes
InFileTypeTemplate	inftt_ind2	No	No	Yes	No
InGranuleFacts	IGF_indAID	No	No	No	No
InGranuleFacts	IGF_indDPI	No	No	No	No
InGranuleFacts	IGF_indFSI	No	No	No	No
InGranuleFacts	IGF_indRID	No	No	No	No
InGranuleFacts	PK_INGRANULEFACTS	Yes	No	Yes	Yes
InGranMutex	pk_ingranmutexlock	Yes	No	Yes	Yes
InGranuleLinkage	IGL_indGID	No	No	No	No
InGranuleLinkage	IGL_indIGD	No	No	No	No
InGranuleState	pk_invaldatagranulestate	Yes	No	Yes	Yes
InHistoricGranule	IHG_indDTP	No	No	No	No
InHistoricGranule	IHG_indRID	No	No	No	No
InHistoricGranule	IHG_indVID	No	No	No	No
InHistoricGranule	pk_inhistoricgranule	Yes	No	Yes	Yes
InHistoricRequest	IHR_indEDP	No	No	No	No
InHistoricRequest	IHR_indLUP	No	No	No	No
InHistoricRequest	IHR_indPDT	No	No	No	No
InHistoricRequest	IHR_indPDT2	No	No	No	No
InHistoricRequest	IHR_indRST	No	No	No	No

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

Table Code	Index Code	PK	FK	U	C
InHistoricRequest	pk_histrequest	Yes	No	Yes	Yes
InHostStats	PK_HOSTSTATS	Yes	No	Yes	Yes
InHostTransferProtocol	PK_INREMOTEHOST	Yes	No	Yes	Yes
InHostTransferProtocol	inhost_ind1	No	No	No	No
InHostTransferProtocol	inhost_ind2	No	No	No	No
InInterventionNote	PK_ININTERVENTIONNOTE	Yes	No	Yes	Yes
InMediaCheckin	pk_inmediacheckin	Yes	No	Yes	Yes
InMediaType	pk_inmediatype	Yes	No	Yes	Yes
InNextAvailableID	pk_innextavailableid	Yes	No	Yes	Yes
InNotification	PK_INNOTIFICATION	Yes	No	Yes	Yes
InNotification	innotify_ind1	No	No	Yes	No
InOperatorAlert	IOA_indIATS	No	No	No	No
InOperatorAlert	IOA_indIDT	No	No	No	No
InOperatorAlert	PK_INOPERATORALERT	Yes	No	Yes	Yes
InOperatorConfig	PK_INOPERATORCONFIG	Yes	No	Yes	Yes
InOperatorFilter	PK_INOPERATORFILTER	Yes	No	Yes	Yes
InOperatorFilter	tInOperatorFilter	No	No	No	No
InOperatorIntervention	IOI_indRID	No	No	No	No
InOperatorIntervention	PK_INOPERATORINTERVENTION	Yes	No	Yes	Yes
InPDRList	IPL_indPLI	No	No	No	No
InPDRList	PK_INPDRLIST	Yes	No	Yes	Yes
InPDRList	IPL_indPLIFN	No	No	Yes	No
InPollingLocation	IPL_indDPI	No	No	No	No
InPollingLocation	IPL_indHID	No	No	No	No
InPollingLocation	PK_INPOLLINGLOCATION	Yes	No	Yes	Yes
InPollingServerMessage	PK_INPOLLINGSERVERMESSAGE	Yes	No	Yes	Yes
InPollingWithoutDRESDT	pk_wodresdt	Yes	No	Yes	Yes
InPollingWithoutDRXref	pk_wodrxrefid	Yes	No	Yes	Yes
InPriorityMap	PK_INPRIORITYMAP	Yes	No	Yes	Yes
InProcessingServerMessage	IPM_indRID				
InProviderStats	PK_PROVIDERSTATS	Yes	No	Yes	Yes
InRequestNote	PK_INREQUESTNOTE	Yes	No	Yes	Yes
InRequestNoteSummary	PK_INREQUESTNOTESUMMARY	Yes	No	Yes	Yes

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

Table Code	Index Code	PK	FK	U	C
InSSHCipher Map	pk_insshciphermap	Yes	No	Yes	Yes
InSSSEventAction	PK_SSSEventAction	Yes	No	Yes	Yes
InSourceMCF	insmcf_ind1	No	No	No	Yes
InSuspendedGranule	PK_SUSPENDEDGRAN	Yes	No	Yes	Yes
InSuspendedHostXref	pk_pidhidaid	Yes	No	Yes	Yes
InSystemParameters	pk_insystemparameters	Yes	No	Yes	Yes
InTempIngestThroughput	PK_INTEMPINGESTTHROUGHPUT	Yes	No	Yes	Yes
InValBypassPreproc	pk_invalbypasspreproc	Yes	No	Yes	Yes
InValFileCksumType	pk_invalfilecksumtype	Yes	No	Yes	Yes
InValIngestType	pk_invalingesttype	Yes	No	Yes	Yes
InValNotifyType	pk_invalnotifytype	Yes	No	Yes	Yes
InValParameterClass	pk_invalparameterclass	Yes	No	Yes	Yes
InValRequestState	pk_invalrequeststate	Yes	No	Yes	Yes
InXAR	pk_xarkey	Yes	No	Yes	Yes

4.2 Segments

Sybase supports the declaration of segments. A segment is a named pointer to a storage device(s). Segments are used to physically allocate a database object to a particular storage device. Segments defined for the INGEST and all other subsystem databases are described in Table 4-3.

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.
system	System tables and indexes.

4.3 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 INGEST Subsystem database. Named caches may be defined as the memory usage of the INGEST database becomes more well 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.

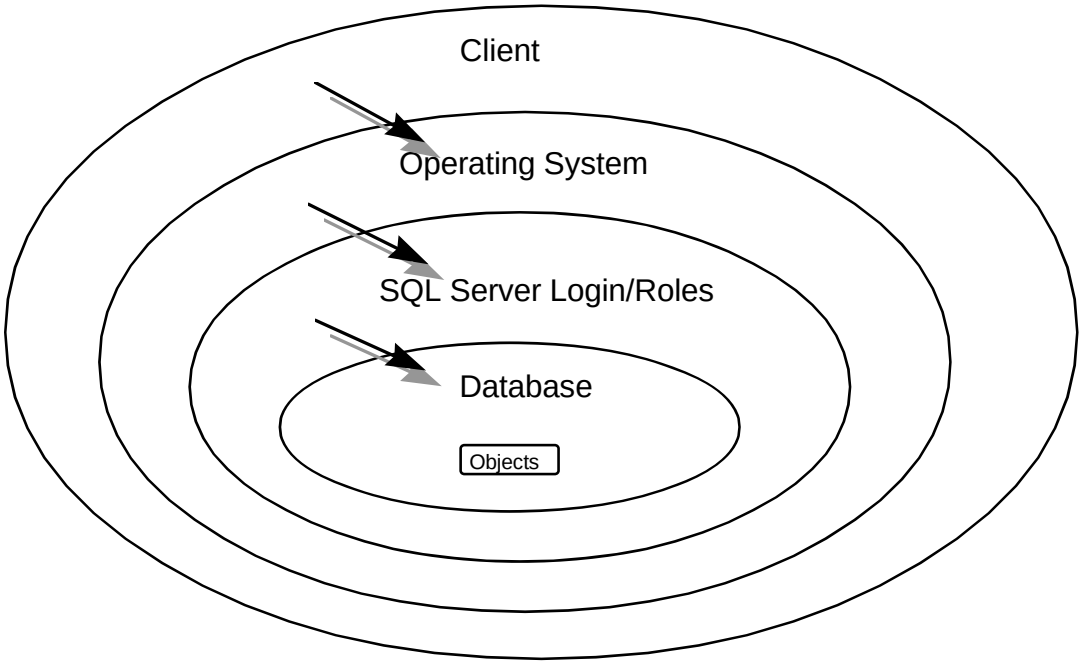

Figure 5-1. Sybase General Approach to SQL Server Security[1]

5.2 Users

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.

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

5.3 Groups

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 INGEST Subsystem "default database. The DAACs should define database groups to support the database security requirements of their individual DAACs. Assigning each user to the appropriate group should control security for local DAAC users.

5.4 Roles

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.

5.5 Login/Group Object Permissions

During initial database installation logins used by the ECS custom code were created and permissions assigned for access to the INGEST Subsystem database. In addition, special database installation login, ingest_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 INGEST 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. Object Permissions

Group Name	Group Users	Delete	Insert	Select	Update
software	EcDlActionDriver	X	X	X	X
software	EcDlDpcv	X	X	X	X
software	EcDlDpmGUI	X	X	X	X
software	EcDlInNotificationService	X	X	X	X
software	EcDlInPollingService	X	X	X	X
software	EcDlInProcessingService	X	X	X	X
software	EcDlInsertUtility	X	X	X	X
software	EcDlIVT	X	X	X	X
software	EcDlMoveCollection	X	X	X	X
software	EcDlRemap	X	X	X	X
software	EcDlRestoreOlaFromTape	X	X	X	X
software	EcDlRestoreTapeFromOla	X	X	X	X

Group Name	Group Users	Delete	Insert	Select	Update
software	EcDsAmAcvu	X	X	X	X
software	EcInDlGui	X	X	X	X
software	EcOmGui	X	X	X	X
software	EcOmOrderManager	X	X	X	X
software	EcOsBMGT	X	X	X	X
EMSgroup	EcDbEMSdataExtractor			X	

6. Scripts

6.1 Installation Scripts

Scripts used to support installation of the INGEST Subsystem database are listed in Table 6-1.

Table 6-1. Installation Scripts

Script File	Description
EcInDbBuild	Create a new intialized INGEST database.
EcInDbPatch	Upgrade an existing INGEST database to the next valid database version level.
EcInDbDump	Dump a specified INGEST database on demand.
EcInDbLoad	Load a specified INGEST database on demand.
EcDbDesc	List and detail the structure of all database objects in the specified ECS database.
EcDbChecksum	Provide row count totals for each of the tables in a specific ECS database.

6.2 De-Installation Scripts

Scripts used to support de-installation of the INGEST Subsystem database are listed in Table 6-2.

Table 6-2. De-Installation Scripts

Script File	Description
EcInDbDrop	Drop all objects in the specified INGEST database.

6.3 Backup and Recovery Scripts

Scripts developed to perform backup and recovery of the INGEST Subsystem database are listed in Table 6-3. These scripts should be configured to run automatically using the Unix chron facility. It is recommended that, transaction logs dumps (incremental dumps) are performed a minimum of 3 times each day. It is recommneded that database dumps (full database dumps) are performed a minimum of once each day. Backup and recovery are M&O activities. At their discretion, DAACs may modify these backup/recovery scripts or utilize backup/recovery scripts developed by their local M&O staff.

Table 6-3. Backup and Recovery Scripts

Script File	Description
EcCoDbSyb_DumpDb	Dumps all databases for managed by the SQL server instance.
EcCoDbSyb_DumpTran	Dumps the transaction log for all databases managed by the SQL server.

6.4 Miscellaneous Scripts

Miscellaneous scripts applicable to the INGEST Subsystem database are listed in Table 6-4.

Table 6-4. Miscellaneous Scripts and Input Data Files

Script	Description
EcDdmMonitorServer	Monitors segment usage and user levels for a selected SQL server. Superseded by DbVision COTS.
EcDdmSegmentUse	Monitors segment usage. Used by EcDdmMonitorServer. Superseded by DbVision COTS.
EcDdmUserCounts	Monitors user access. Used by EcDdmMonitorServer. Superseded by DbVision COTS.
EcCoDbSyb_CkErrorLog	Checks the error log for error messages warranting DBO attention. Superseded by DbVision.
EcCoDbSyb_DbStat	Updates index statistics for each table in the selected database.
EcCoDbSyb_DboMail	Emails DBA error notification via e-mail. Used by EcCoDbSyb_DumpDb/Tran and EcCoDbSyb_CkErrorLog scripts.

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Appendix A. Entity Relationship Diagram

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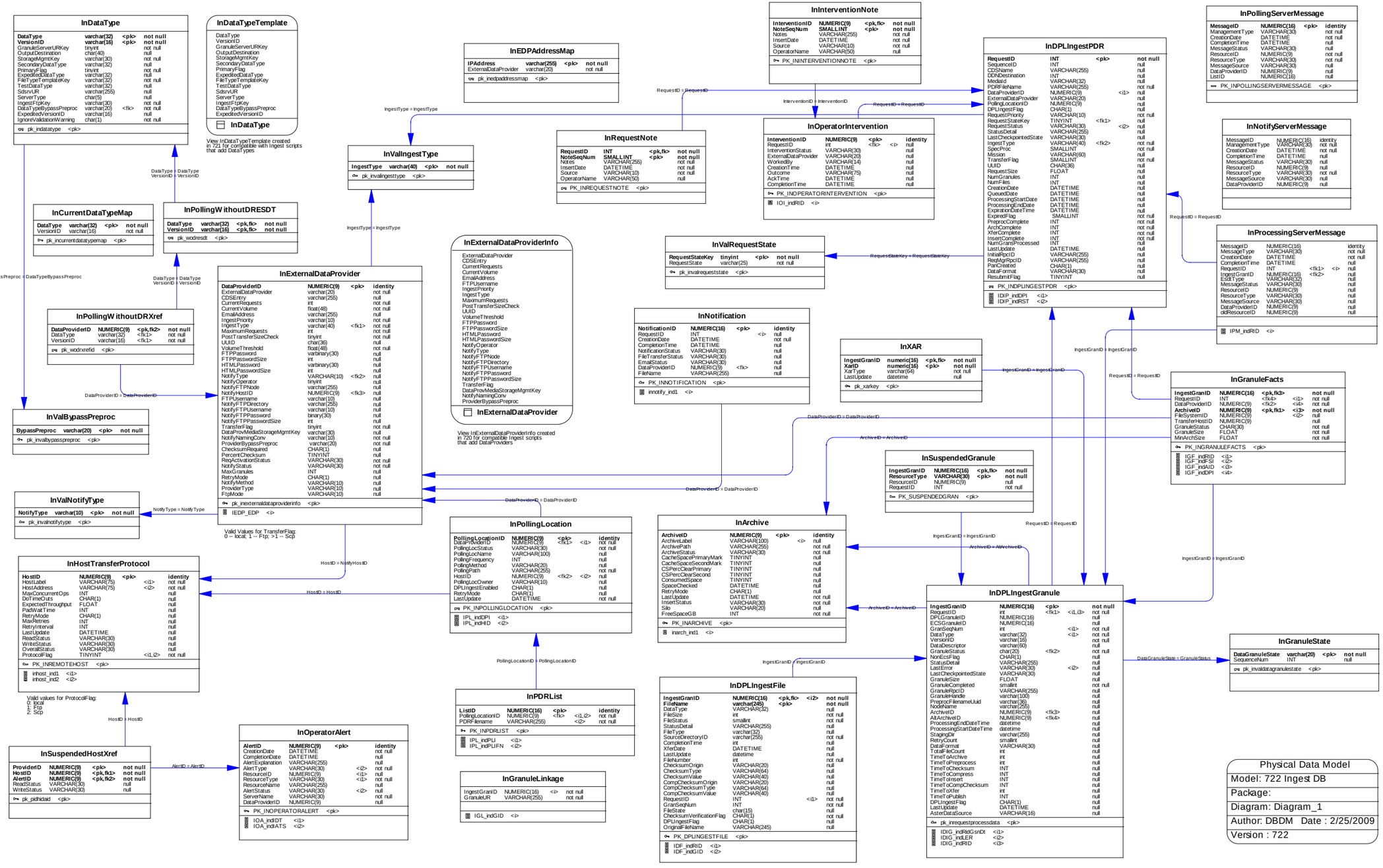

Figure A-1. Ingest Subsystem Entity Relationship Diagram (1 of 2)

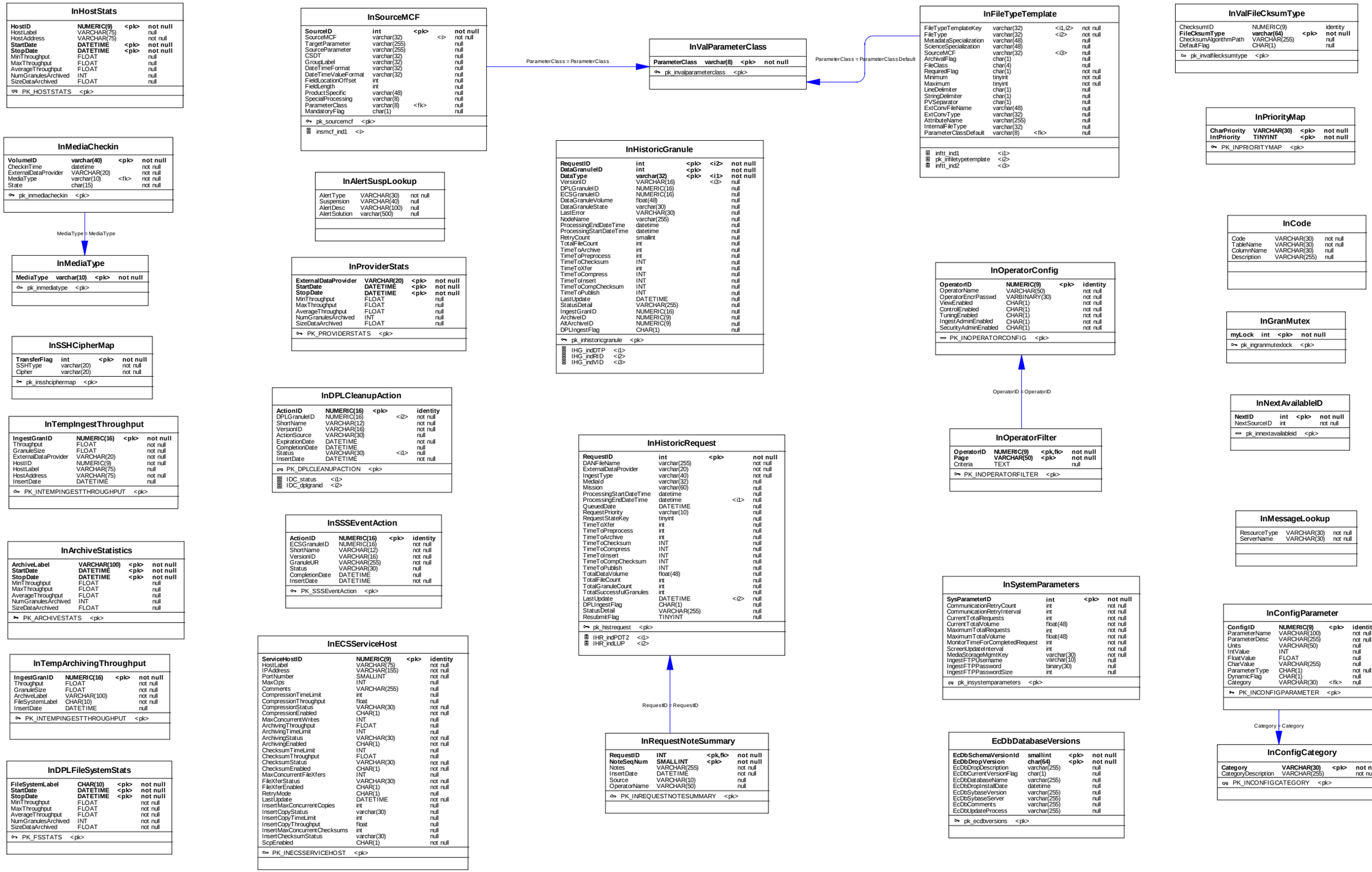

Figure A-1. Ingest Subsystem Entity Relationship Diagram (2 of 2)

Abbreviations and Acronyms

AIM	Archive Inventory Management
ADSRV	Advertising Service CSCI
ANSI	American National Standards Institute
CASE	Computer Aided Software Engineering
CD	contractual delivery 214-001
CDRL	contract data requirements list
CDS	cell directory service
CI	configuration item
COTS	commercial off-the-shelf (hardware or software)
CSCI	computer software configuration item
CSDT	Computer Science Data Type
CSMS	Communications and Systems Management Segment (ECS)
CSS	Communications Subsystem
DAAC	Distributed Active Archive Center
DBMS	Database Management System
DDICT	Data Dictionary CSCI
DDIST	Data Distribution Services CSCI
DDN	Data Delivery Notice
DID	data item description
DM	Data Management
DMS	Data Management Subsystem
DP	Data Provider
DPS	Data Processing Subsystem
DSS	Data Server Subsystem
ECS	EOSDIS Core System
EDC	EROS Data Center
EDHS	ECS Data Handling System
EDOS	EOS Data and Operations System

EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
EROS	Earth Resources Observation System
ESDIS	Earth Science Data and Information System (GSFC)
ESDT	Earth science data types
FK	Foreign Key
FTP	File Transfer Protocol
GSFC	Goddard Space Flight Center
GUI	graphic user interface
HTML	Hypertext Markup Language
HTTP	Hypertext Transport Protocol
HWCI	Hardware Configuration Item
ICD	interface control document
ID	identification
INGEST	Ingest Services CSCI
IOS	Interoperability Subsystem
IP	Internet Protocol
ISS	Internetworking Subsystem
IV&V	independent verification and validation
LaRC	Langley Research Center (DAAC)
MCF	Metadata Configuration File
MSFC	Marshall Space Flight Center
MSS	Management Support Subsystem
PDPS	Planning and Data Processing Subsystem
PK	Primary Key
PLANG	Production Planning CSCI
PLS	Planning Subsystem
RPC	Remote Procedure Call
STMGT	Storage Management Software CSCI
SUBSRV	Subscription Server

UR	Universal Reference
WWW	World-Wide Web

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