625-EED-005, Rev. 02

EOSDIS Evolution and Development (EED) Contract

Training Material for the EED Contract
Volume 5: Archive Processing

Revision 02

September 2013

Raytheon Company
Riverdale, Maryland

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September 2013

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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

Document Number	Status/Issue	Publication Date	CCR Number
625-EED-005	Original	March 2011	11-0056
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Abstract

This is Volume 5 of a series of lessons containing the training material for the Earth Observing System Data and Information System (EOSDIS) Evaluation and Development (EED) Contract. This lesson provides a detailed description of the process required to perform the tasks associated with archive functions.

***Keywords**:* training, instructional design, course objective, archive, granule deletion tool, Spatial Subscription Server, Data Pool, Data Pool maintenance, Release 8.2

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Contents

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Introduction

Identification

Training Material Volume 5 is part of Contract Data Requirements List (CDRL) Item 23, which is a required deliverable under the Earth Observing System Data and Information System (EOSDIS) Evaluation and Development (EED) Contract (NNG10HP02C).

Scope

Training Material Volume 5 describes the process and procedures associated with Archive Processing. It describes archive hardware, software, and data. In addition, it addresses starting and shutting down the tape archive control software, monitoring archive requests, and performing archive management tasks. This lesson is designed to provide the operations staff with sufficient knowledge and information to satisfy all lesson objectives.

Purpose

The purpose of this Student Guide is to provide a detailed course of instruction that forms the basis for understanding data archiving. Lesson objectives are developed and will be used to guide the flow of instruction for this lesson. The lesson objectives will serve as the basis for verifying that all lesson topics are contained within this Student Guide and slide presentation material.

Status and Schedule

This lesson module provides detailed information about training for the current baseline of the system. Revisions are submitted as needed.

Organization

This document is organized as follows:

Introduction:	The Introduction presents the document identification, scope, purpose, and organization.
Related Documentation:	Related Documentation identifies parent, applicable and information documents associated with this document.
Student Guide:	The Student Guide identifies the core elements of this lesson. All Lesson Objectives and associated topics are included. Slide Presentation is reserved for all slides used by the instructor during the presentation of this lesson.

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Related Documentation

Parent Documents

The parent documents are the documents from which the EED Training Material's scope and content are derived.

	Statement of Work for EOSDIS Evolution and Development Contract
423-CDRD-002	Contract Data Requirements Document for EED Tasks 01, 02 & 03

Applicable Documents

The following documents are referenced within this EMD Training Material, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this document:

423-46-01	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Science Data Processing System (EMD F&PRS)

Information Documents

Information Documents Referenced

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of the EED Training Material.

609-EED-001, Rev. 02	Release 8.2 Operations Tools Manual for the EED Contract
611-EED-001, Rev. 02	Release 8.2 Mission Operation Procedures for the EED Contract

Information Documents Not Referenced

The following documents, although not referenced herein and/or not directly applicable, do amplify or clarify the information presented in this document. These documents are not binding on the content of the EED Training Material.

305-EED-001, Rev. 02	Release 8.2 Segment/Design Specifications for the EED Contract.
311-EED-001, Rev. 02	Release 8.2 INGEST (INS) Database Design and Schema Specifications for the EED Contract.
311-EED-002, Rev. 02	Release 8.2 Order Manager Database Design and Database Schema Specifications for the EED Contract.
311-EED-003, Rev. 02	Release 8.2 Spatial Subscription Server (SSS) Database Design and Schema Specifications for the EED Contract.
311-EED-005, Rev. 02	Release 8.2 Archive Inventory Management (AIM) Database Design and Schema Specifications for the EED Contract.

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Archive Processing Overview

Lesson Overview

This lesson reviews the process of archiving data, including a description of processing for working with the StorNext Storage Manager (SNSM) software, monitoring the ingest/archiving/distribution performance, managing archive content and capacity, maintaining configuration of peripherals and data servers, backing up and restoring archived data, documenting and troubleshooting archive errors, maintaining the archive processing queue (storage and retrieval), and providing archive status.

Lesson Objectives

Overall Objective - The overall objective of this lesson is proficiency in the methodology and procedures for archive processing in the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) during maintenance and operations. The lesson includes a description of processing for monitoring the ingest/archival/distribution performance, maintaining configuration of peripherals and data servers, documenting archive errors, maintaining the archive processing queue (both storing and retrieval), managing archive content and capacity, submitting new data archive requests to the Science Coordinator, and providing archive status.

Specific Objective 1 - The student will list DAAC operator positions for Archive Manager personnel interfaces and identify responsibilities associated with each interface.

Condition - The student will be given a list of DAAC operators.

Standard - The student will select four personnel positions with which the Archive Manager interfaces and list at least one major area of responsibility for each selected position.

Specific Objective 2 - The student will identify the major hardware facility for archival storage, the tape drives, storage networking blades and the associated storage cartridges.

Condition - The student will be given a copy 609-EED-001 Revision 01, Release 8.2 *Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001, Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*, a working system archive facility, and an LTO 4 tape cartridge.

Standard - The student will correctly point out the Quantum Scalar iSeries library, identify the tape drives, storage networking blade and the LTO 4 tape cartridge.

Specific Objective 3 - The student will name the major parts of the Operator's Panel on the Scalar Library and explain how each is used.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will identify the Operator's panel, each section, .and how each is used.

Specific Objective 4 - The student will describe the StorNext Storage Manager (SNSM) software.

Condition - The student will be given a copy of 609-EED-001, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001, *Release 8.2 Mission Operation Procedures for the EED Contract*.

Standard - The student will identify the SNSM software as the StorNext File System and the Storage Manager, and correctly describe its host platform as an HP Proliant computer.

Specific Objective 5 - The student will start the StorNext tape archive system.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*, and a working system archive facility.

Standard - The student will operate the StorNext control panels, power up the archive hardware, vary the partition online, then boot StorNext host and start StorNext without error and in accordance with documented procedures.

Specific Objective 6 - The student will shut down the StorNext tape archive system.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*, and a working system archive facility with StorNext started.

Standard - The student will terminate StorNext and vary the partition offline, and shutdown the library without error and in accordance with documented procedures.

Specific Objective 7 - The student will use manual mode to bring the partition online.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*, and a working system arch ive facility with StorNext started.

Standard - The student will vary the partition offline, and vary the partition back online, without error, in accordance with documented procedures, and following all required safety precautions.

Specific Objective 8 - The student will describe the relationships between Earth Science Data Types (ESDTs), Logical Volume Groups (LVGs) in the Archive, and physical archive volume groups.

Condition - The student will be given a diagram depicting the relationships.

Standard - The student will correctly explain the logical and physical structure of archive storage for the system.

Specific Objective 9 - The student will describe the process of, and monitor the progress of, inserting new data into the archive.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract*, and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract*, and a working system archive facility with StorNext started.

Standard - The student will describe without error the process of inserting new data into the archive.

Standard - The student will perform without error and in accordance with documented procedures the procedures relating to monitoring retrieval of data from the archive.

Specific Objective 10 - The student will use the granule deletion capability to delete granules from the archive and inventory.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility with StorNext started.

Standard - The student will perform without error and in accordance with documented procedures the procedure for deleting granules from the archive and inventory.

Specific Objective 11 - The student will perform automatic and manual loading of archive storage cartridges.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* a working system archive facility with StorNext started, and tape cartridges.

Standard - The student will perform procedures for automatic and manual loading of the proper cartridges for the library without error and in accordance with documented procedures.

Specific Objective 12 - The student will create a backup for archived data.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility with StorNext started.

Standard - The student will correctly and in accordance with documented procedures perform a backup of archived data.

Specific Objective 13 - The student will replace a full Backup Volume.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility with StorNext started.

Standard - The student will perform without error and in accordance with documented procedures the procedures for replacing the Backup Volume (Volume 1).

Specific Objective 14 - The student will manually create a replacement backup for an archive data tape.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility with StorNext started.

Standard - The student will perform without error and in accordance with documented procedures the procedures for manually creating a replacement backup for an archive data tape.

Specific Objective 15 - The student will "restore" archive data by inserting a backup copy cartridge.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility.

Standard - The student will perform without error the procedure for inserting a backup copy cartridge to replace a lost archive data tape.

Specific Objective 16 - The student will display what is in the StorNext queue.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility.

Standard - The student will perform without error and in accordance with documented procedures the procedure for viewing what is in the StorNext queue.

Specific Objective 17 - The student will display StorNext messages from the system log file.

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility.

Standard - The student will perform without error and in accordance with documented procedures the procedure for using the *StorNext_log* script to display StorNext messages from the system log file.

Specific Objective 18 - The student will launch and use the StorNext Graphical User Interface (GUI).

Condition - The student will be given a copy of 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility.

Standard - The student will successfully start the StorNext GUI, display icons and data for volume groups and volumes, and execute procedures for modifying volume groups and volumes without error and in accordance with documented procedures.

Specific Objective 19 - The student will perform the functions required to maintain the Data Pool, including tasks with the Data Pool Maintenance (DPM) GUI (monitor Data Pool active insert processes; monitor/cancel data pool insert actions; suspend and resume Data Pool actions; check the Data Pool insert queue; toggle the state of the NoFreeSpace flag; configure the number of allowed active insert processes; configure the default retention period and the default retention priority; view and update collection groups in the Inventory database; list/add/delete a theme), tasks with utilities and scripts (extend the period of retention for selected science granules already in the Data Pool; set up a schedule and cron job for Data Pool cleanup; manually invoke Data Pool cleanup; set up a schedule and cron job for Data Pool access statistics accumulation; manually invoke the Data Pool access statistics utility), and tasks with the Spatial Subscription

Server (NBSRV) GUI; update a subscription; view/add/cancel a bundling order; view statistics on processing of events and actions by the Spatial Subscription Server).

Condition - The student will be given a copy 609-EED-001 Revision 01, *Release 8.2 Operations Tools Manual for the EED Contract* and a copy of 611-EED-001 Revision 01, *Release 8.2 Mission Operation Procedures for the EED Contract* and a working system archive facility.

Standard - The student will use the GUI tools, scripts, and utilities without error in accordance with applicable procedures to perform the required Data Pool maintenance functions.

Importance

The Archive Manager's role in maintaining the archive data is key to the successful implementation and operation of the system. Ensuring the smooth operation of the archive is crucial for system core functionality.

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Slide Presentation

Slide Presentation Description

The following slide presentation represents the slides used by the instructor during the conduct of this lesson.

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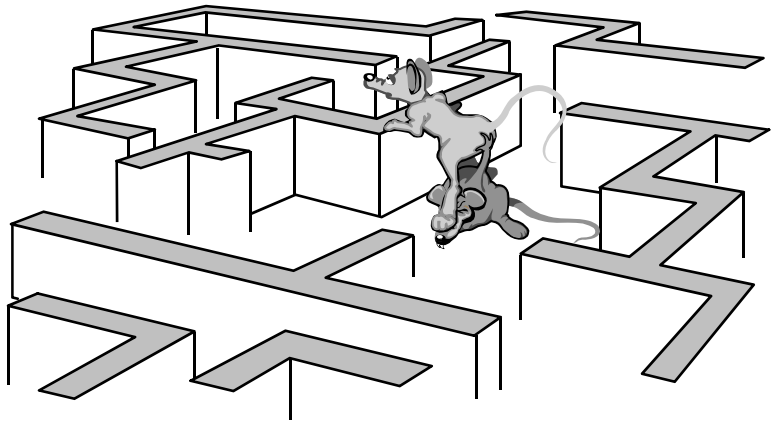
Archive Processing

September 2013

Overview of Lesson

- **Introduction**
- **Archive Processing Topics**
  - **Archive Hardware and Software**
  - **Delete Granules**
  - **Data Pool Management and Maintenance**



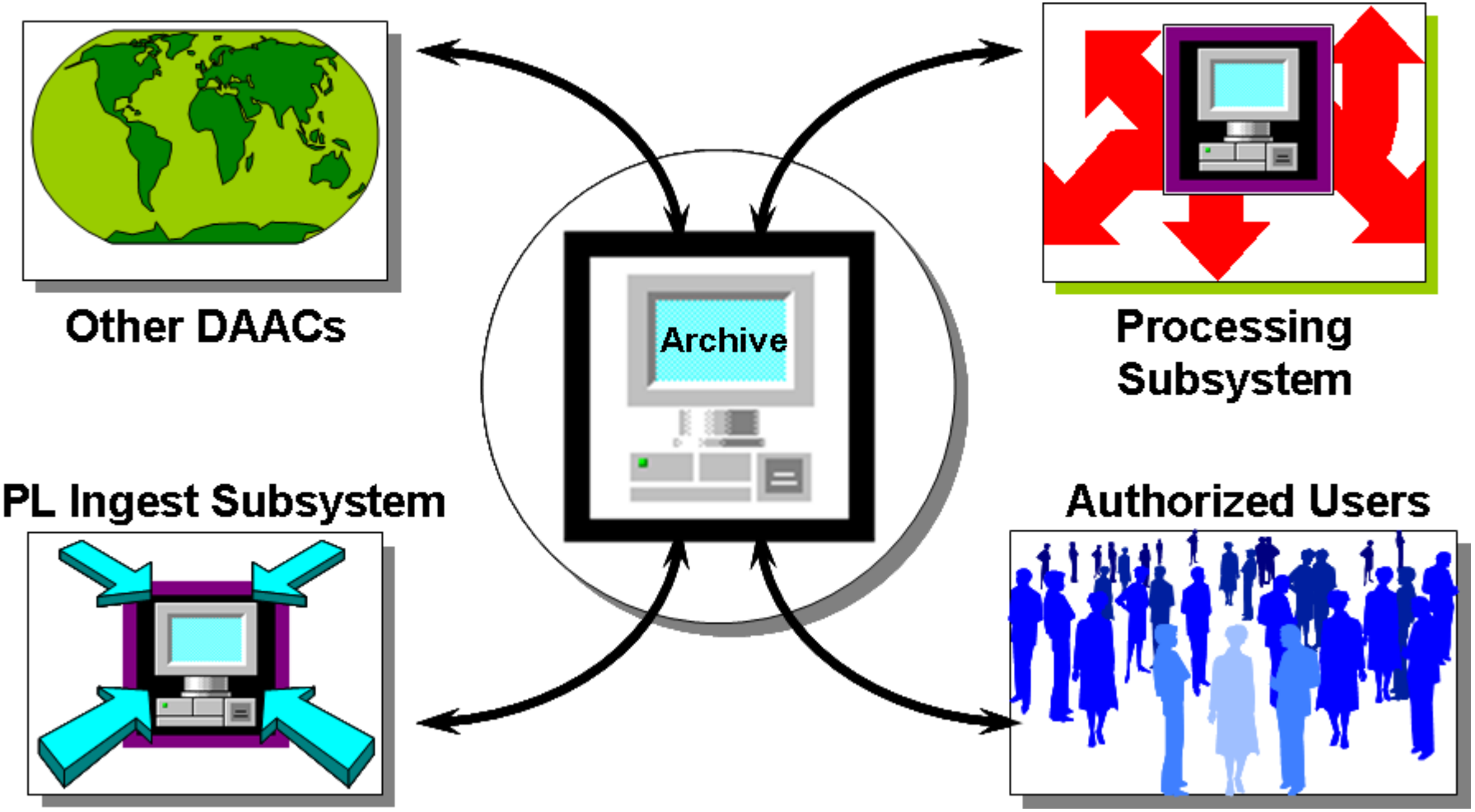
Objectives

- **Overall: Proficiency in Archive Processing**
  - **Describe Archive Manager roles and responsibilities**
  - **Identify and describe Archive storage resources**
  - **Describe archive storage element relationships and archive resource management**
  - **Show how to use the Granule Deletion tool to delete granules**
  - **Explain how to Delete files from the archive**
  - **Explain the use of GUIs, utilities, and scripts for Data Pool maintenance**

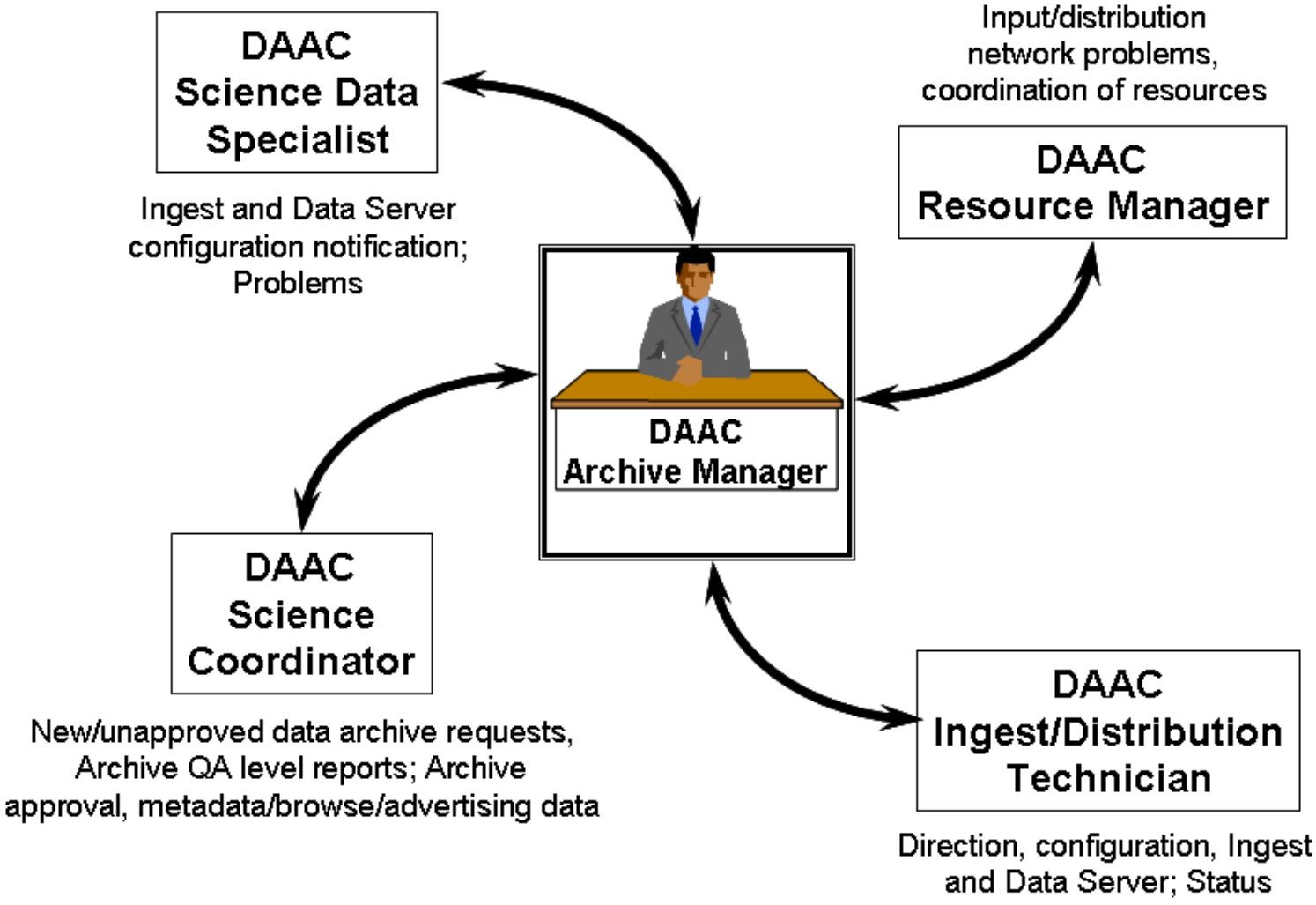
Objectives (Cont.)

- **STANDARDS:**
  - **Lesson content (procedures in the lesson)**
  - **Mission Operation Procedures for the EED Contract (611-EED-001)**

Sources and Uses of Archive Data



DAAC Archive Manager Interfaces

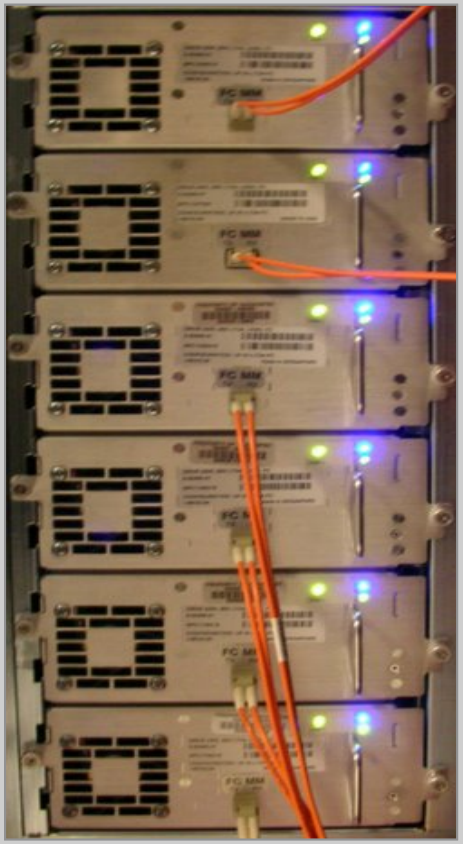


Quantum Scalar i2000 Library

- **Operator panel, a touch screen display device, located on front of the control module is used to perform library operations and service functions.**

Quantum Scalar i2000 Library

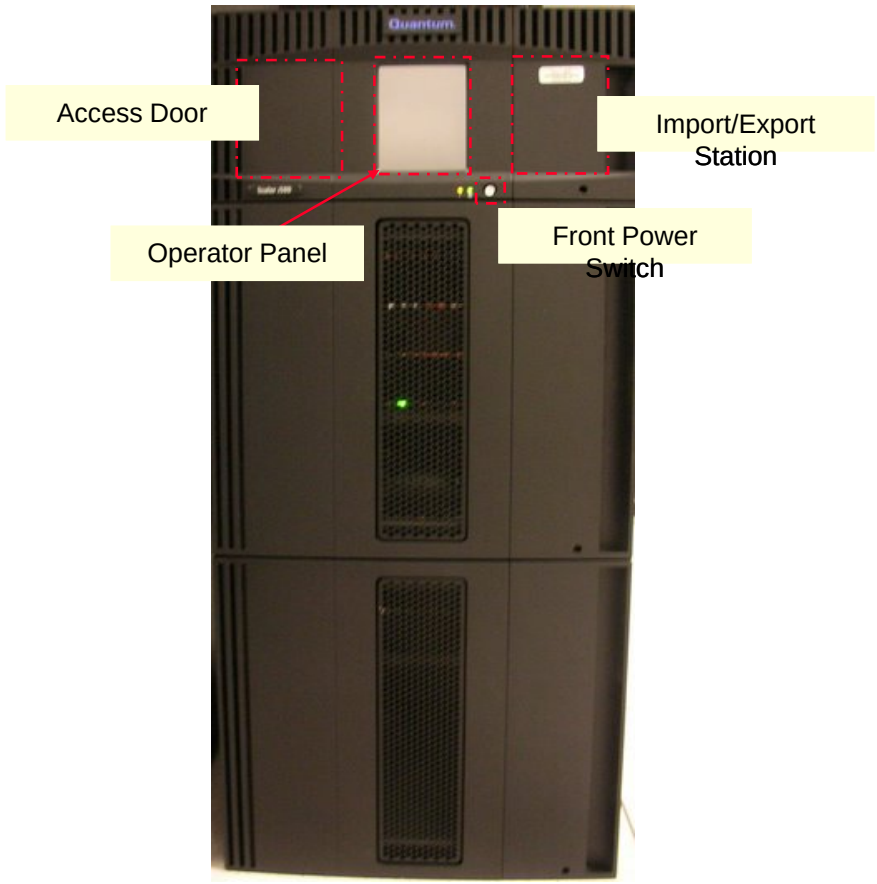
Storage Networking Blades



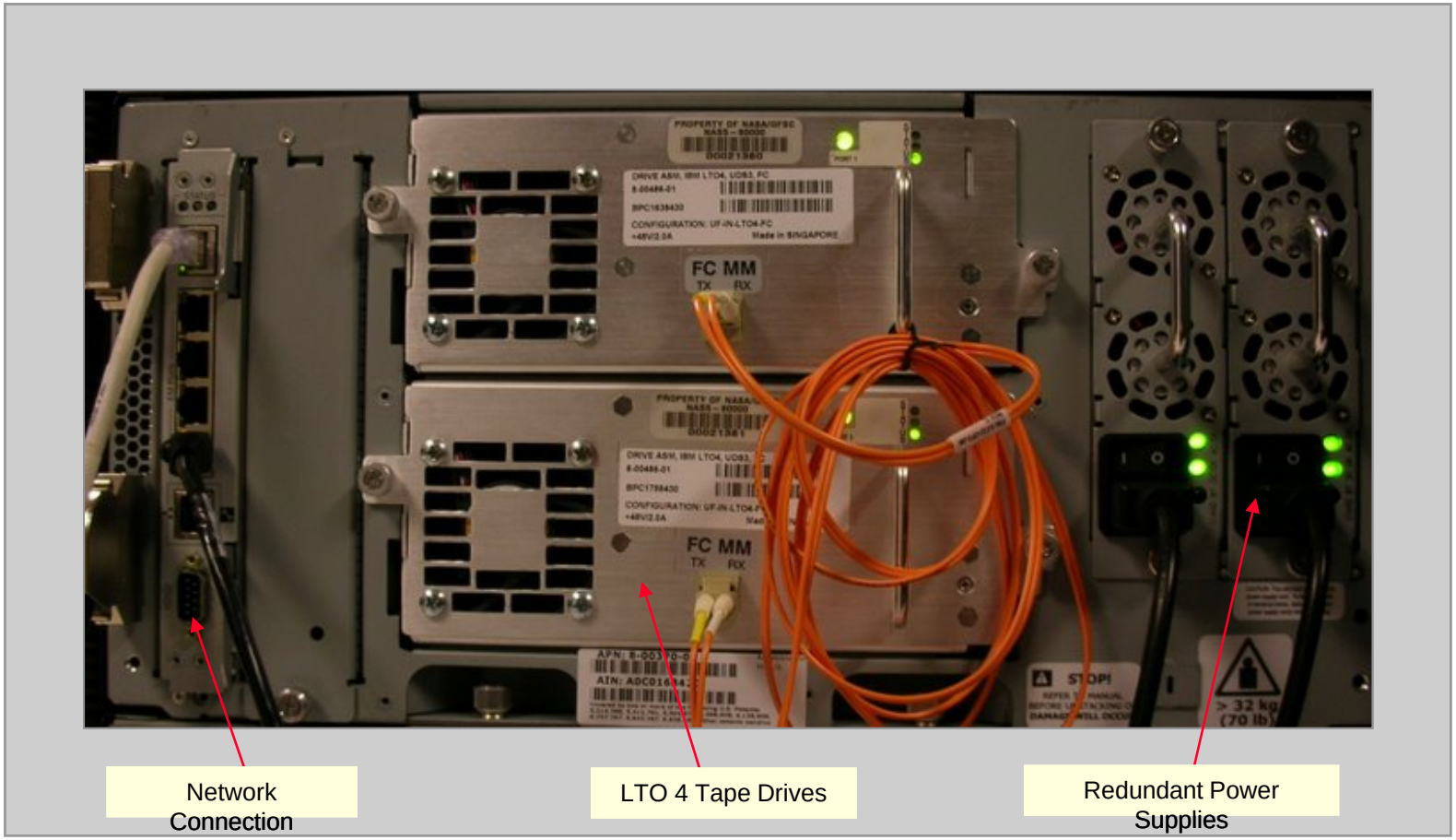
LTO 4 Tape Drives

Quantum Scalar i500 Library

- **Operator panel, a touch screen display device, located on the access door of the control module is used to perform library operations and service functions.**

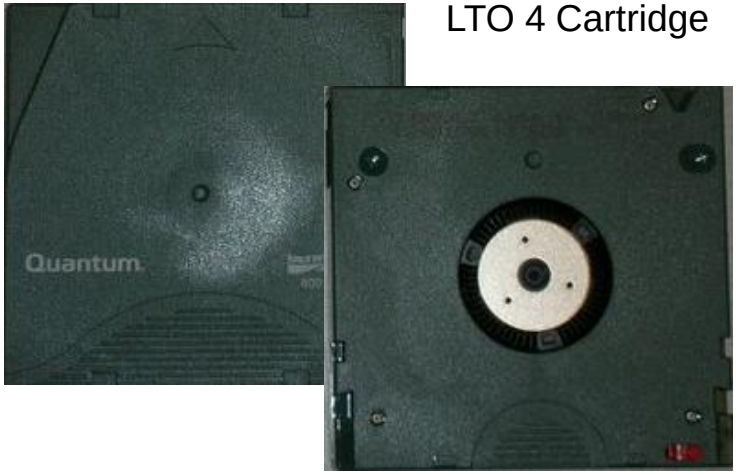


Quantum Scalar i500 Library



LTO 4 Fibre Channel Tape Drives and SAN Blades

LTO 4 Cartridge



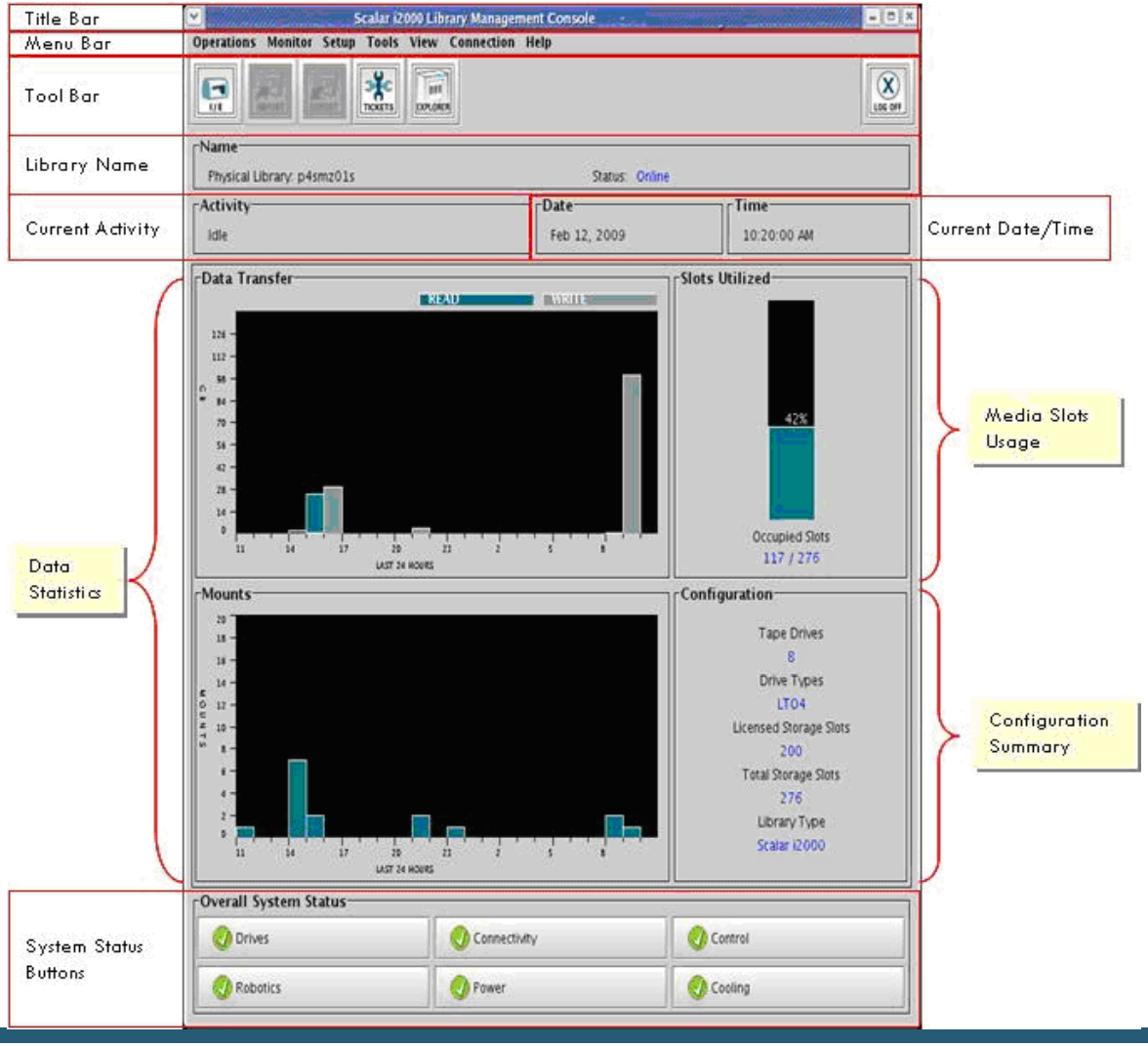
- 120 MB/sec native transfer rate
- 800GB capacity per cartridge (uncompressed)
- Writes LTO 3 and 4
- Reads LTO 2, 3 and 4

Cleaning Cartridge

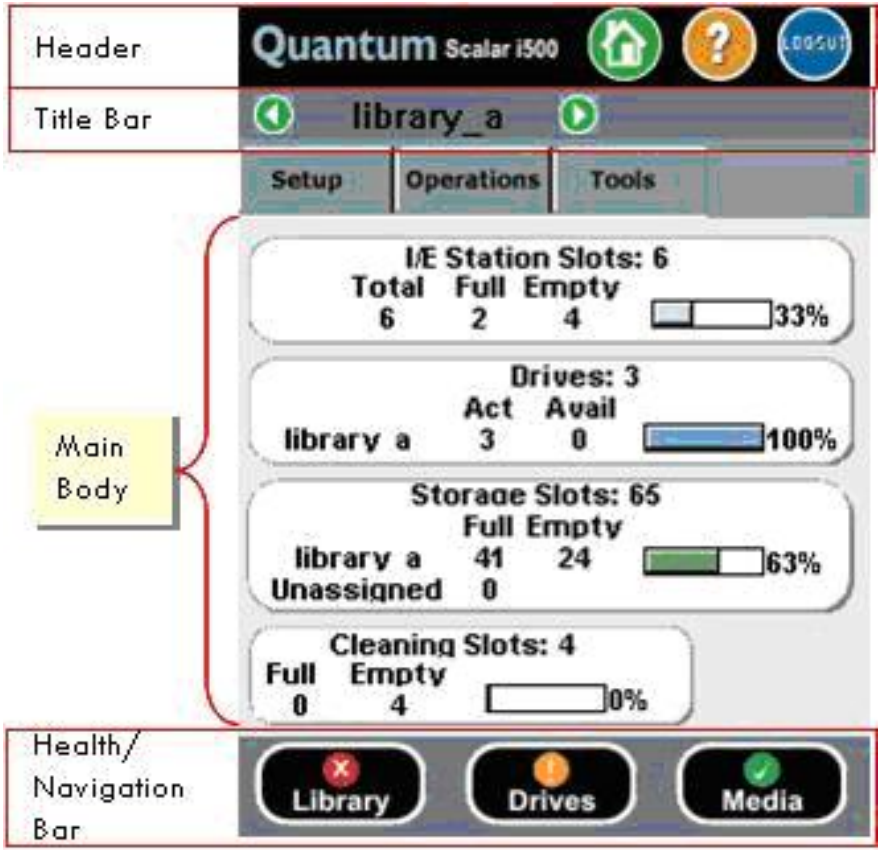
Media type

Barcode

Scalar i2000 Operators Panel



Scalar i500 Operators Panel



StorNext Application

- **Archive operations rely on both custom and commercial off the shelf (COTS) software for complete mass storage archive management, providing the capability to accept Graphical User Interface (GUI) and command line interface inputs, and to interpret them to the appropriate level needed to control and monitor archive operations. The StorNext Storage Manager (SNSM) software is a product of Quantum. Quantum, which acquired ADIC, is the vendor for both the StorNext File System and the StorNext Storage Management products.**
- **The purpose of SNSM in the system is to provide an easy-to-use interface to a large tape archive. StorNext manages files, volumes (media), drives and jukeboxes. It allows UNIX File System (UFS) access methods to be employed (e.g., ftp, rcp, uucp, nfs, RPC, cp, mv and native commands) while removing some of the limitations of the UFS. Primary among these is reliance on UNIX Index Node (inode) structures. StorNext maintains all inode information in database files rather than in associated disk structures. This minimizes or eliminates many of the file search problems inherent in searching large numbers of files in multiple directories.**

StorNext Application

Starting and Stopping StorNext

- **The ECS System contains**
  - **managed (Hierarchal Storage Manager) and**
  - **unmanaged StorNext File Systems.**

  - **In order for the ECS System to function properly both must be start/stop.**
  - **They can be started/stopped from the Linux command line or from the GUI provided by the vendor.**

StorNext Application

To start StorNext Manager Server (*this must be started first*) from the command line prompt: (as superuser or root)

- **Logon to the active metadata server (x4smvaa). Using x4smvaa log into the active (x4sml01 (primary) or x4sml02 (failover/secondary)**

  # service start

- **Verify that the StorNext Manager Server is active with the command**

  # ps –ef | grep cvfs

To start StorNext Manager Clients from the command line prompt: (as superuser or root)

- **Logon to each of the clients.**

  # service cvfs start

- **Verify that the StorNext Manager Server is active with the command**

  # ps –ef | grep cvfs

StorNext Application

To shutdown the StorNext System, you must stop both the server and its clients. The Clients must all be stopped first.

To Stop the StorNext Clients

- **Log in as root (system administrator) into each StorNext Metadata Client.**

  # service cvfs stop

- **Check to ensure client has been stopped**

  # ps –ef | grep cvfs

  (NOTE : MAKE SURE THAT ALL CLIENTS ARE STOPPED)

To Stop the StorNext Server

- **Log in as root (system administrator) into the active StorNext Metadata Server (x4smvaa).**
- **To stop StorNext Server, type:**

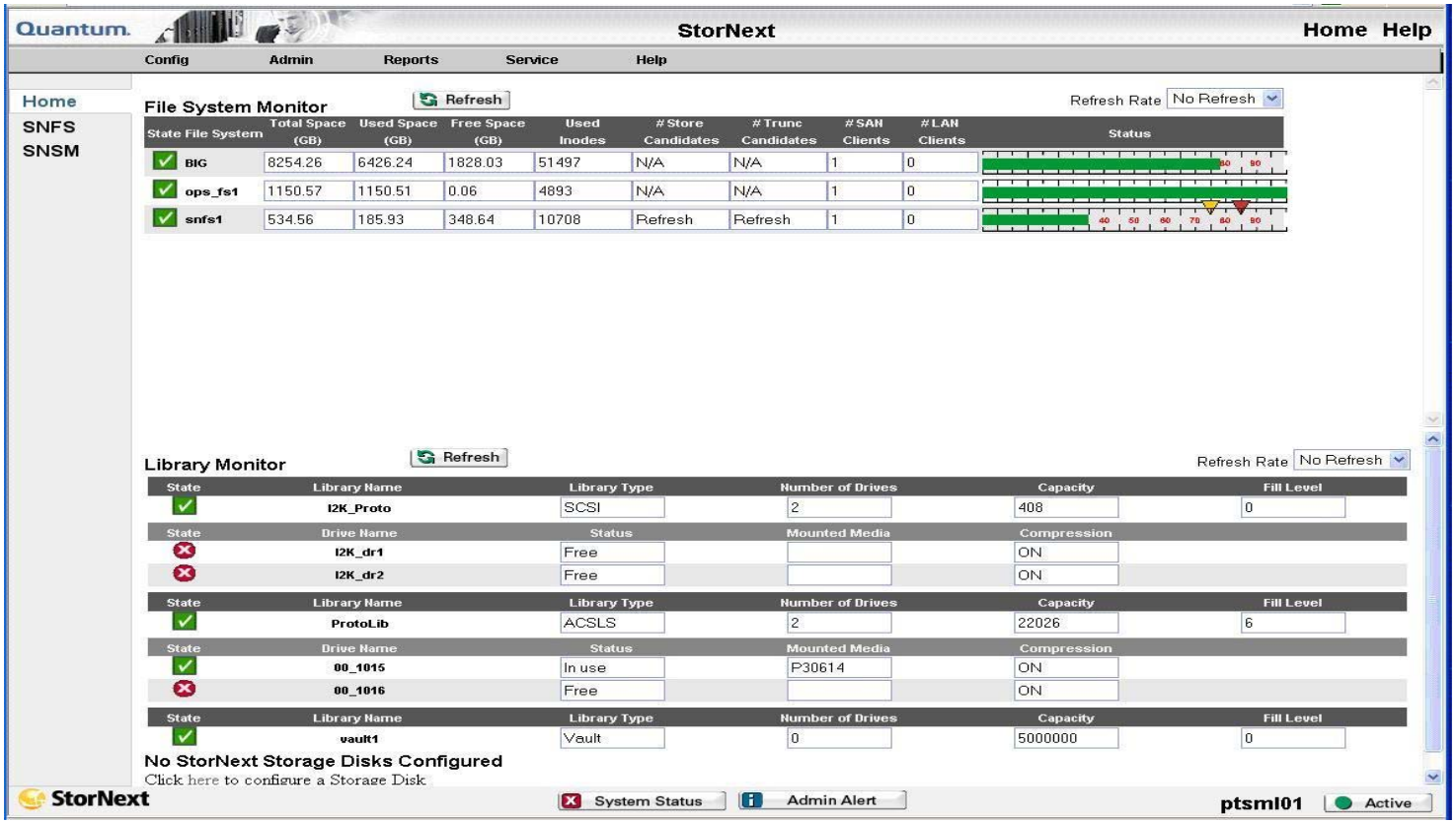
  # service cvfs stop

- **Check to ensure server has been stopped**

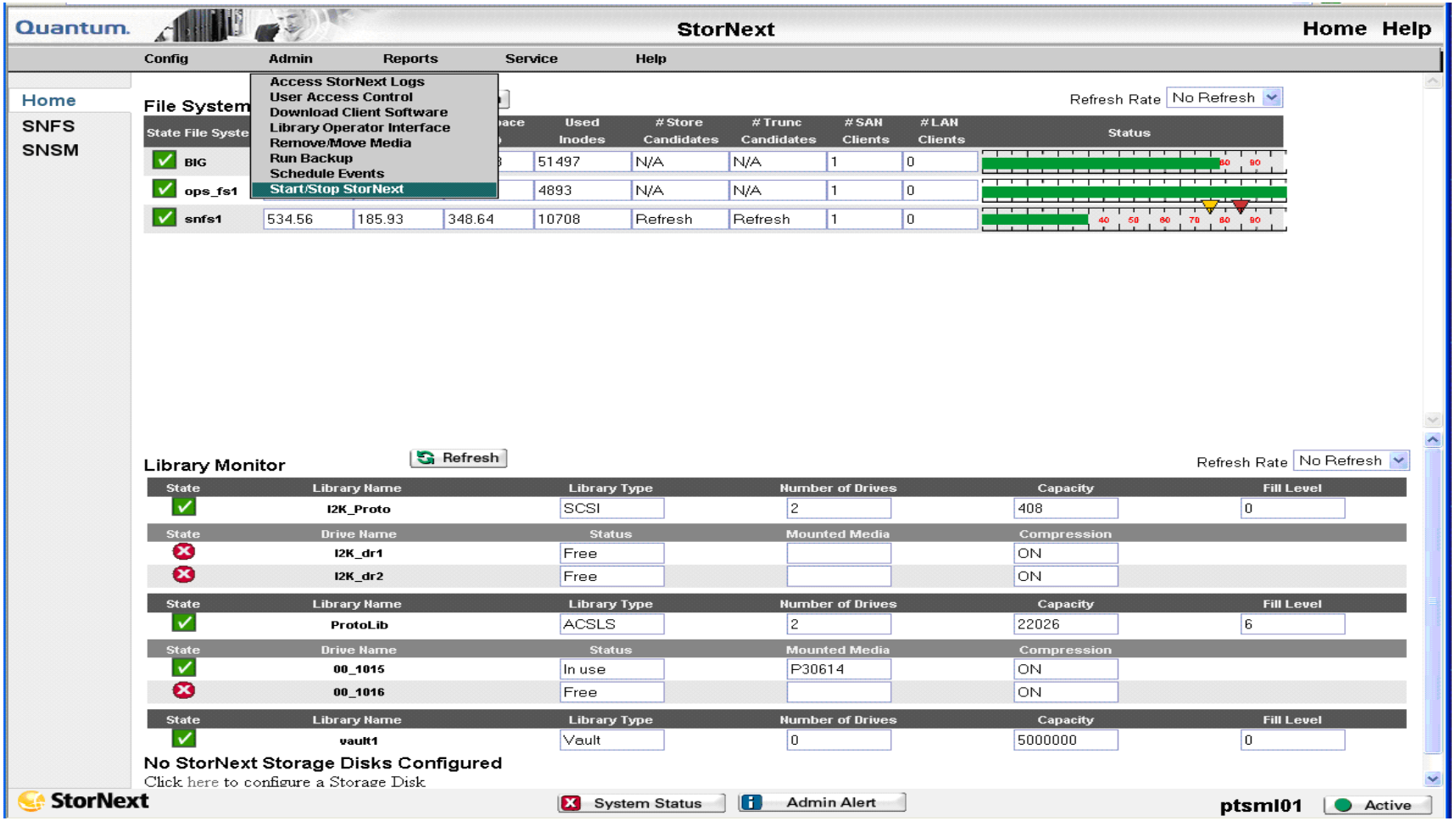
  # ps –ef | grep cvfs

StorNext GUI Home Page

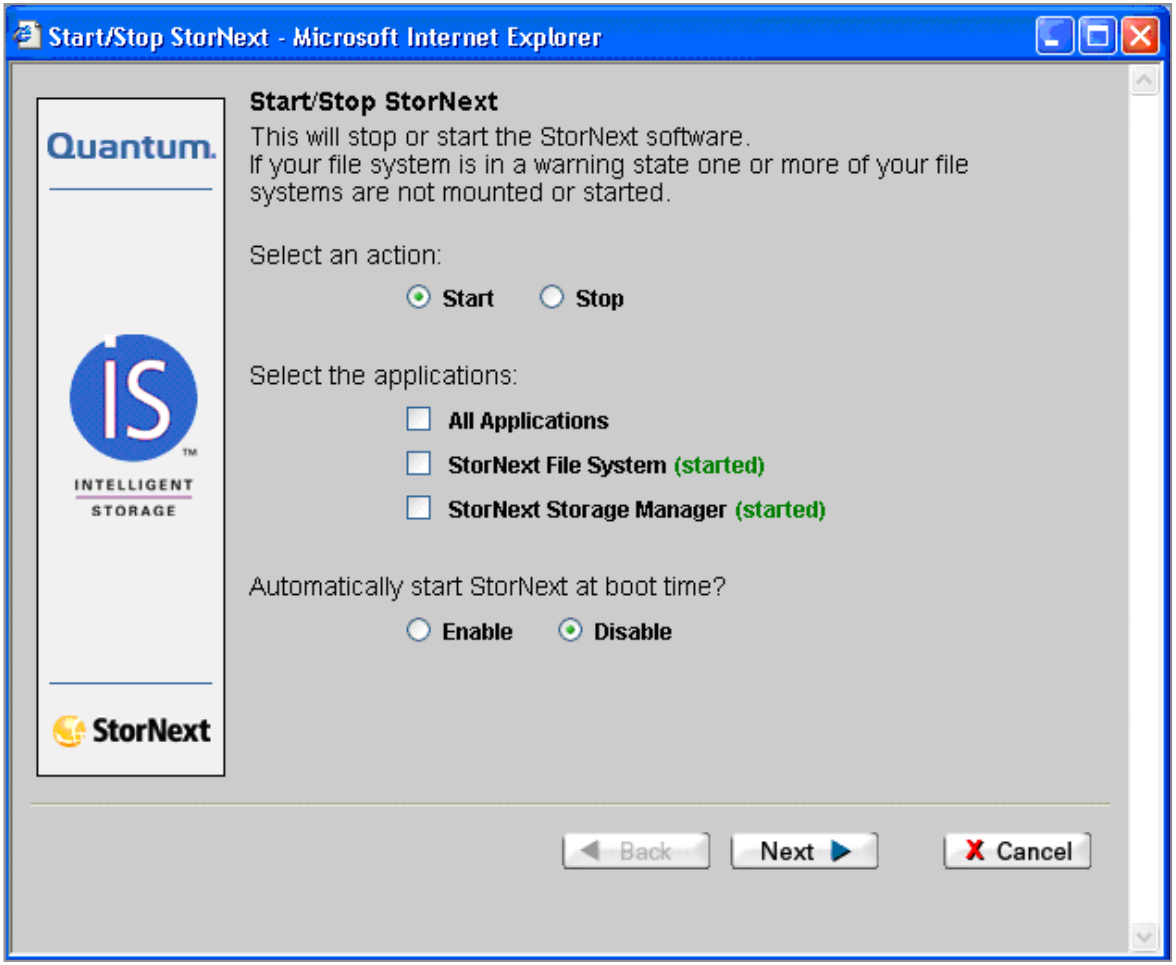
- **The StorNext Home Page is Web based, and can be accessed by any Web enabled machine with the proper Java libraries, to start the StorNext Manager and its Clients from the GUI.**



StorNext GUI Admin Drop Down



StorNext Stop/Start GUI



Granule Deletion

- **Phases of Granule Deletion**
  - **Logical deletion [marking or flagging granules as “deleted” or as DFA (Delete From Archive) only in the AIM database]**
  - **Physical deletion [the actual deletion of marked/flagged granules from the inventory database with removal of XML metadata from the Small File Archive and the Science Granules from the Large File Archive]**
  - **Actual deletion from the inventory of the granules marked for physical deletion from both the Online Archive and the backup/tape Archive. (not DFA only)**

Granule Deletion (Cont.)

Phase 1, Logical Deletion

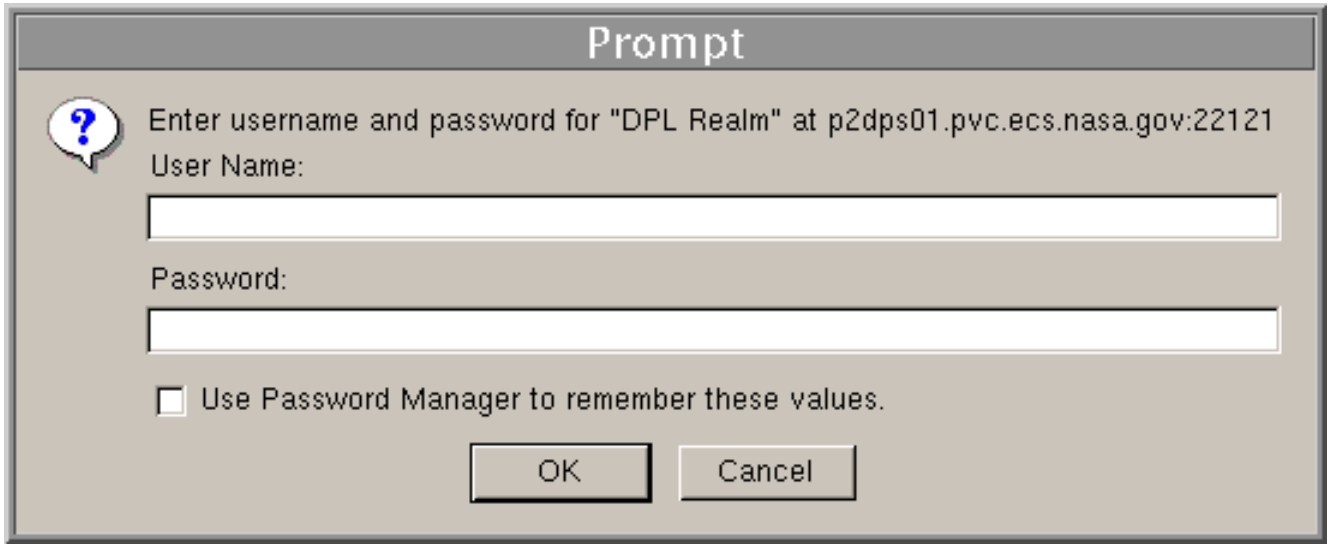
- **A GeoID file can be created by using a command-line utility (BulkSearch.pl). The GeoID file is the granule identification file used to mark granules for deletion.**
- **For the first phase, a command-line Bulk Delete utility (EcDsBulkDelete.pl) responds to operator-specified criteria for the deletion of granules by "logically" deleting from the inventory (Inventory database) those granules that meet the criteria**

- **Phase 2, Physical Deletion**
  - **Physical deletion occurs when the operations staff runs the Deletion Cleanup utility (EcDsDeletionCleanup.pl). The utility removes all inventory rows (in the Inventory database) for granules that were flagged as "deleted," including rows referencing related information (e.g., BR, PH, MP, and QA) as well as Granules marked for deletion, the XML file for the granule is removed from the XML Archive, and all data files for the granule are removed from the Large File Archive.**

Data Pool Management

- **Features of the Data Pool Maintenance GUI**
  - **Most Archive or support personnel tasks for monitoring and maintaining the Data Pool require the use of the Data Pool Maintenance (DPM) GUI**
  - **The DPM GUI permits an operator to perform tasks in the following general areas:**
    - **Monitoring Data Pool Active Insert Processes**
    - **Monitoring Data Pool Insert Queue**
    - **Managing Data Pool File Systems**
    - **Managing Cloud Cover Information**
    - **Checking the Status of Batch Inserts**
    - **Managing Data Pool Configuration Parameters and Data Pool Tuning**
    - **Managing and Adding New Data Pool Collection Groups (ECS and Non-ECS)**
    - **Managing Data Pool Collections within Collection Groups**
    - **Managing Existing and Adding New Data Pool Collection Themes**

DPM GUI: Security Login Prompt



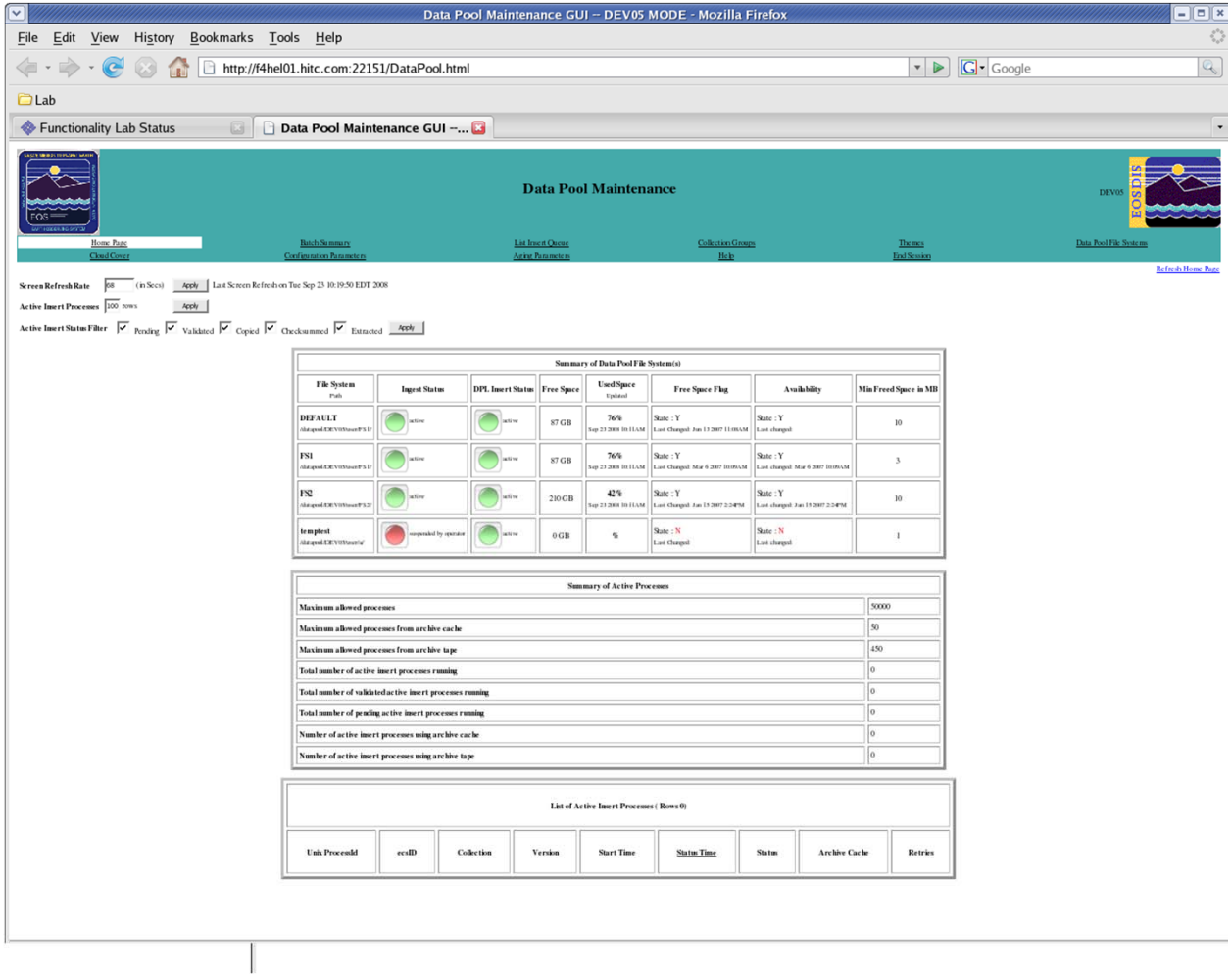
Data Pool Management (Cont.)

- **Features of the Data Pool Maintenance GUI (Cont.)**
  - **Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the DPM GUI**
  - **Limited-capability operators are able to view a lot of information**
    - **However, on the limited-capability GUI, some buttons and links have been disabled so it is not possible to perform certain actions or access certain pages**

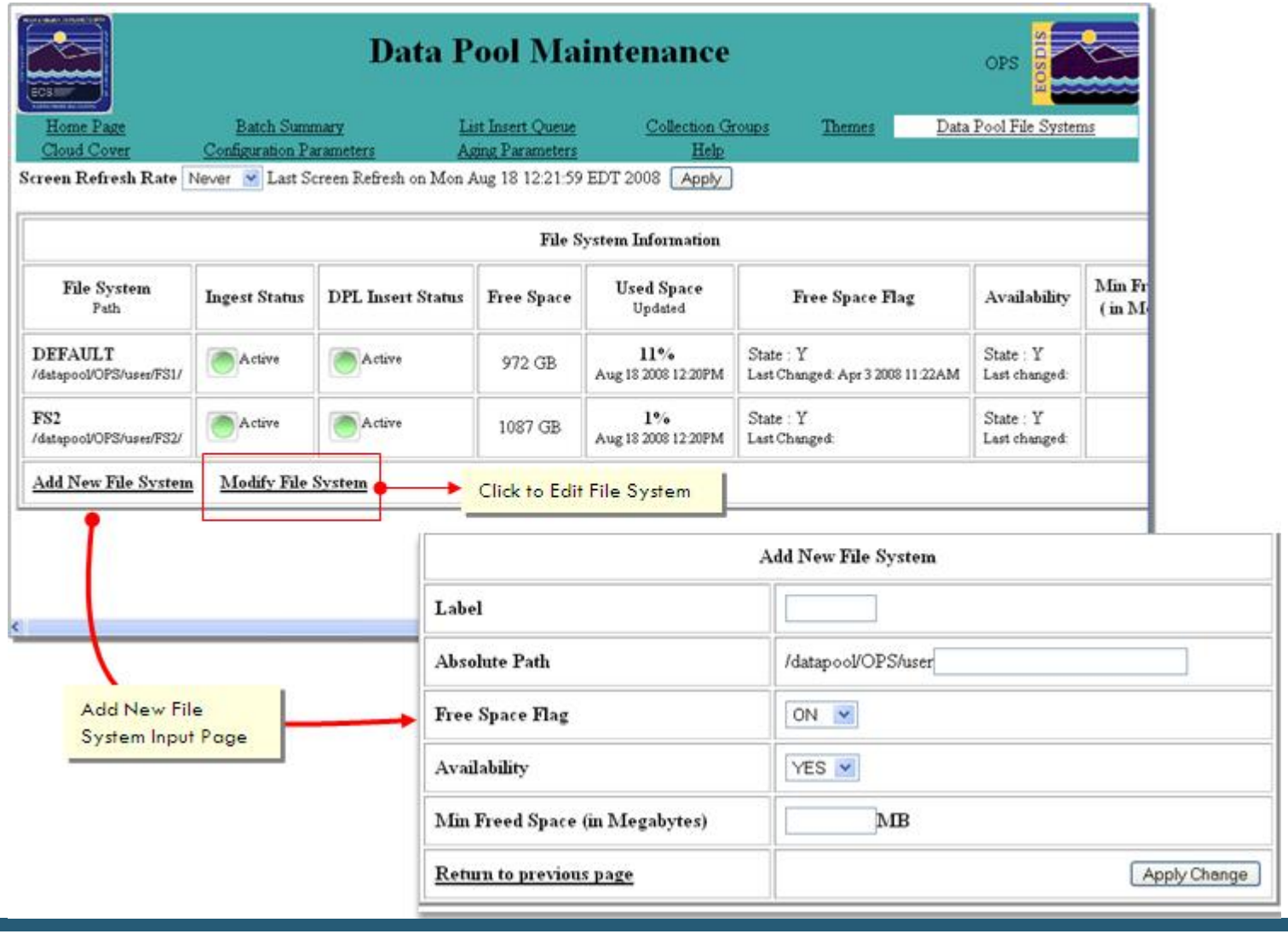
Data Pool Management (Cont.)

- **Features of the Data Pool Maintenance GUI (Cont.)**
  - **This lesson provides instruction in the full-capability version of the DPM GUI**
    - **However, the functions that are available to limited-capability operators as well as the functions that are not available to limited-capability operators are identified**

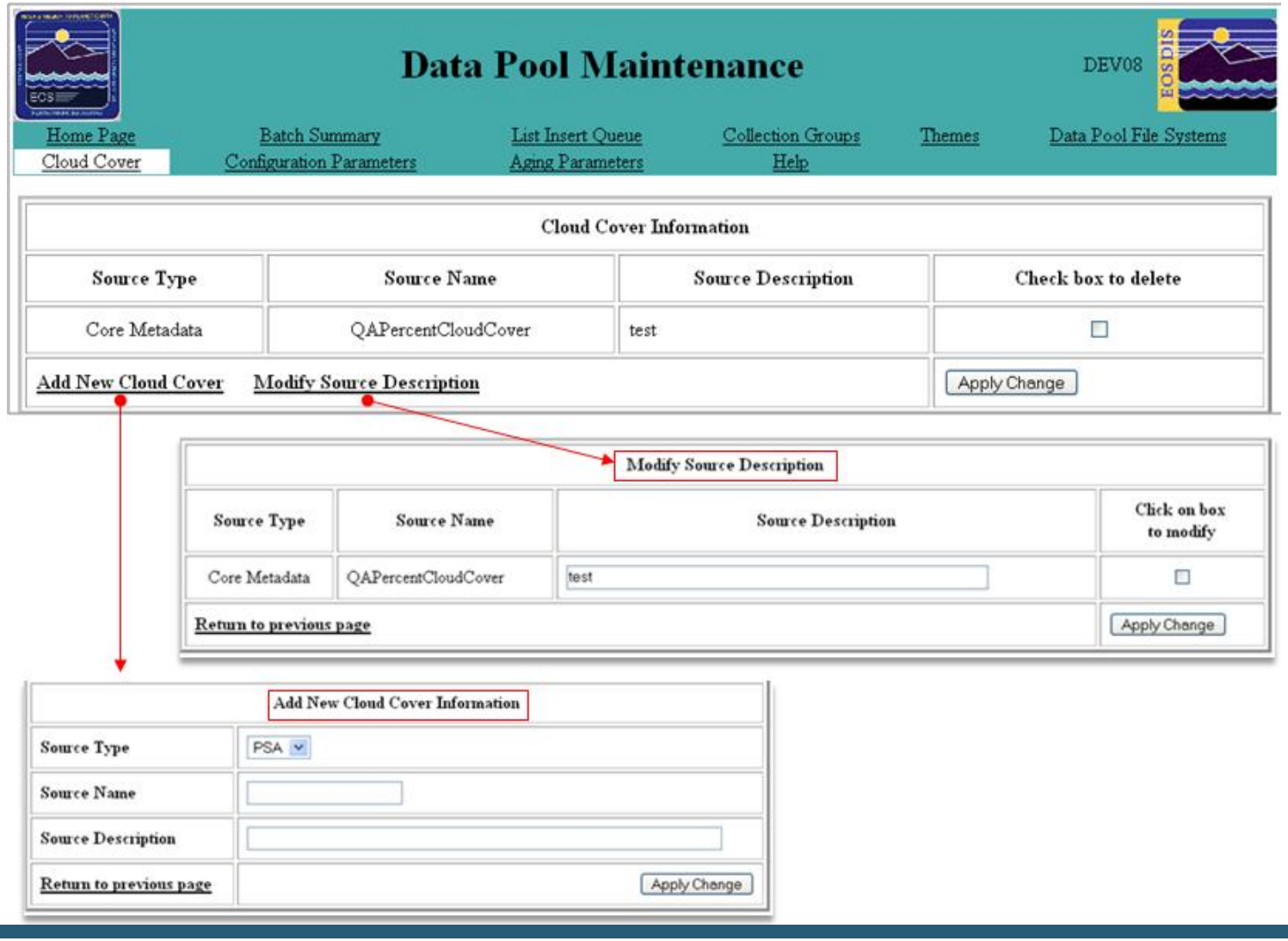
DPM GUI: Home Page



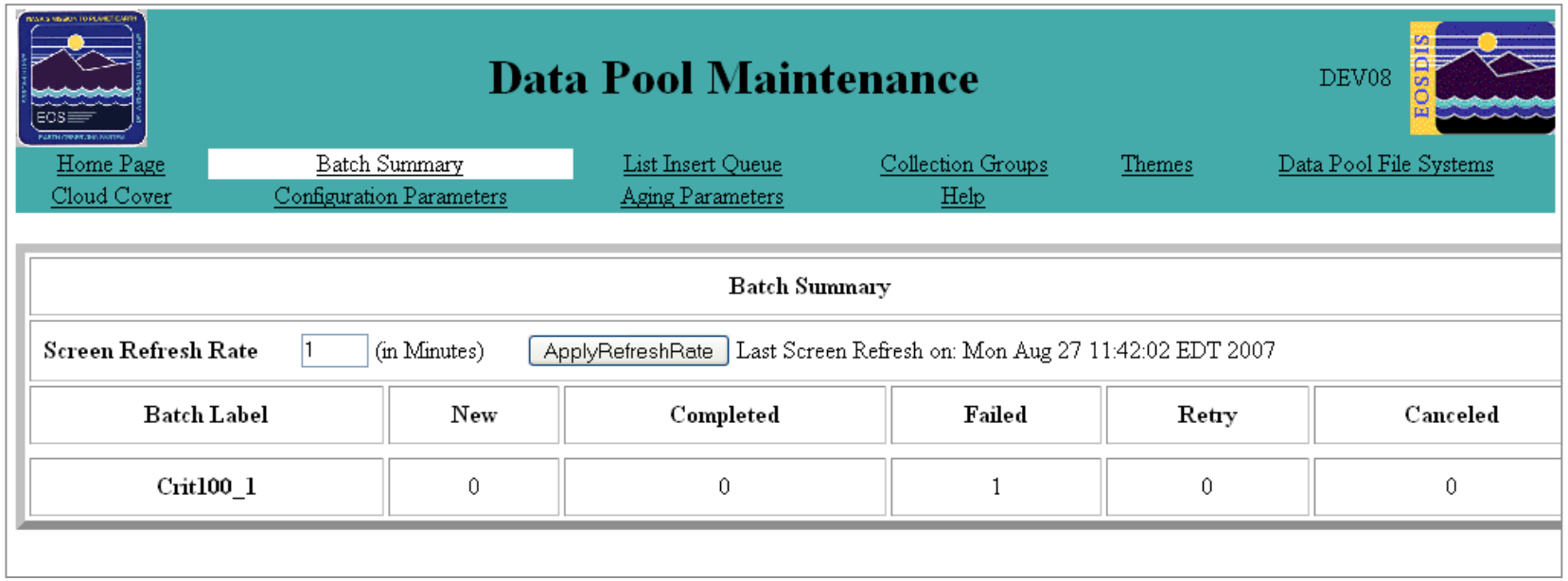
DPM GUI: File System Information Page (Add New File & Link to Modify File System)



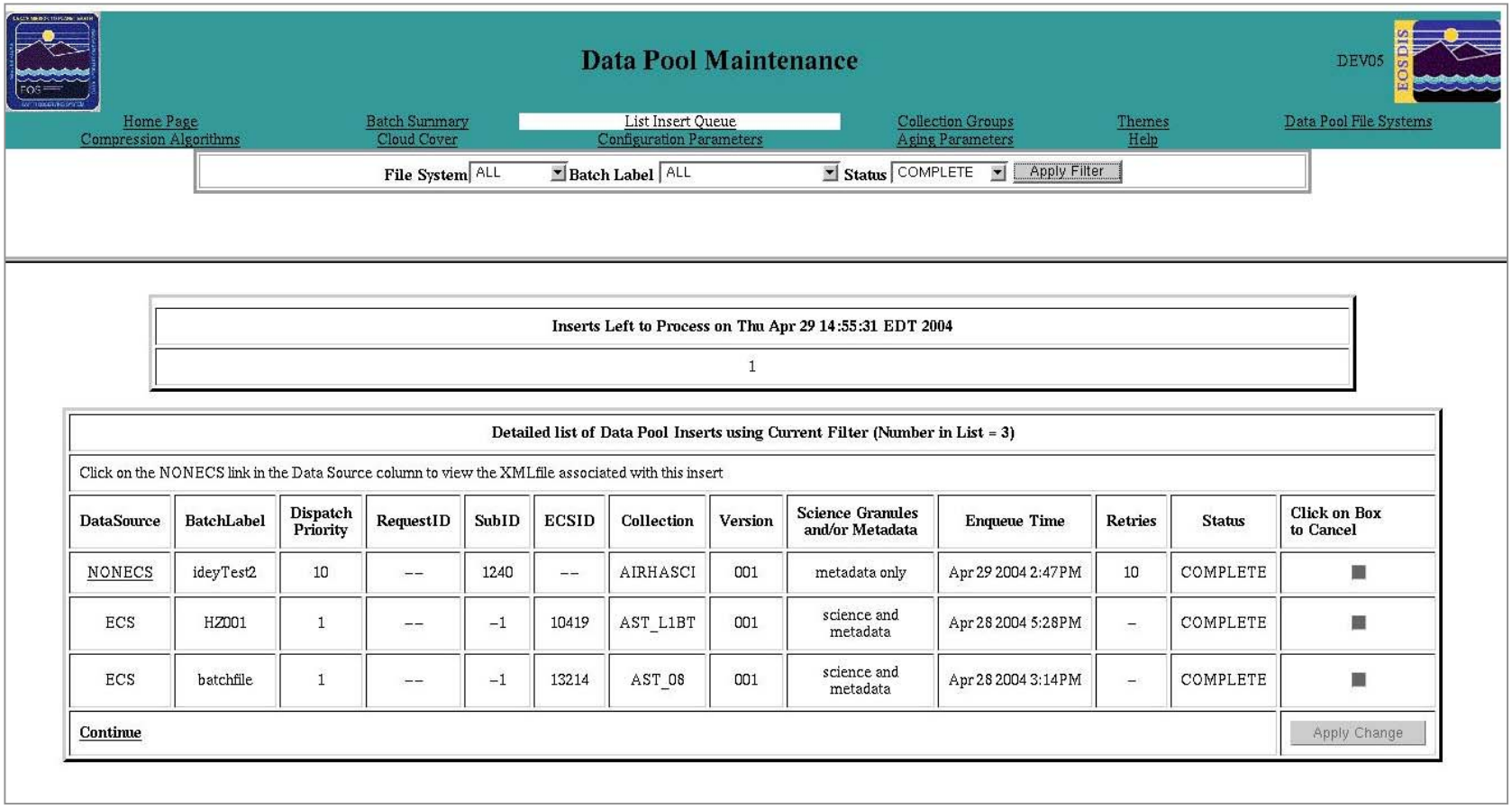
DPM GUI: Cloud Cover Information Page (Add New Info and Modify Info)



DPM GUI: Batch Summary Page



DPM GUI: List Insert Queue Page



Data Pool Maintenance

DEV05

Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Compression Algorithms | Cloud Cover | Configuration Parameters | Aging Parameters | Help

File System: ALL Batch Label: ALL Status: COMPLETE Apply Filter

Inserts Left to Process on Thu Apr 29 14:55:31 EDT 2004

1

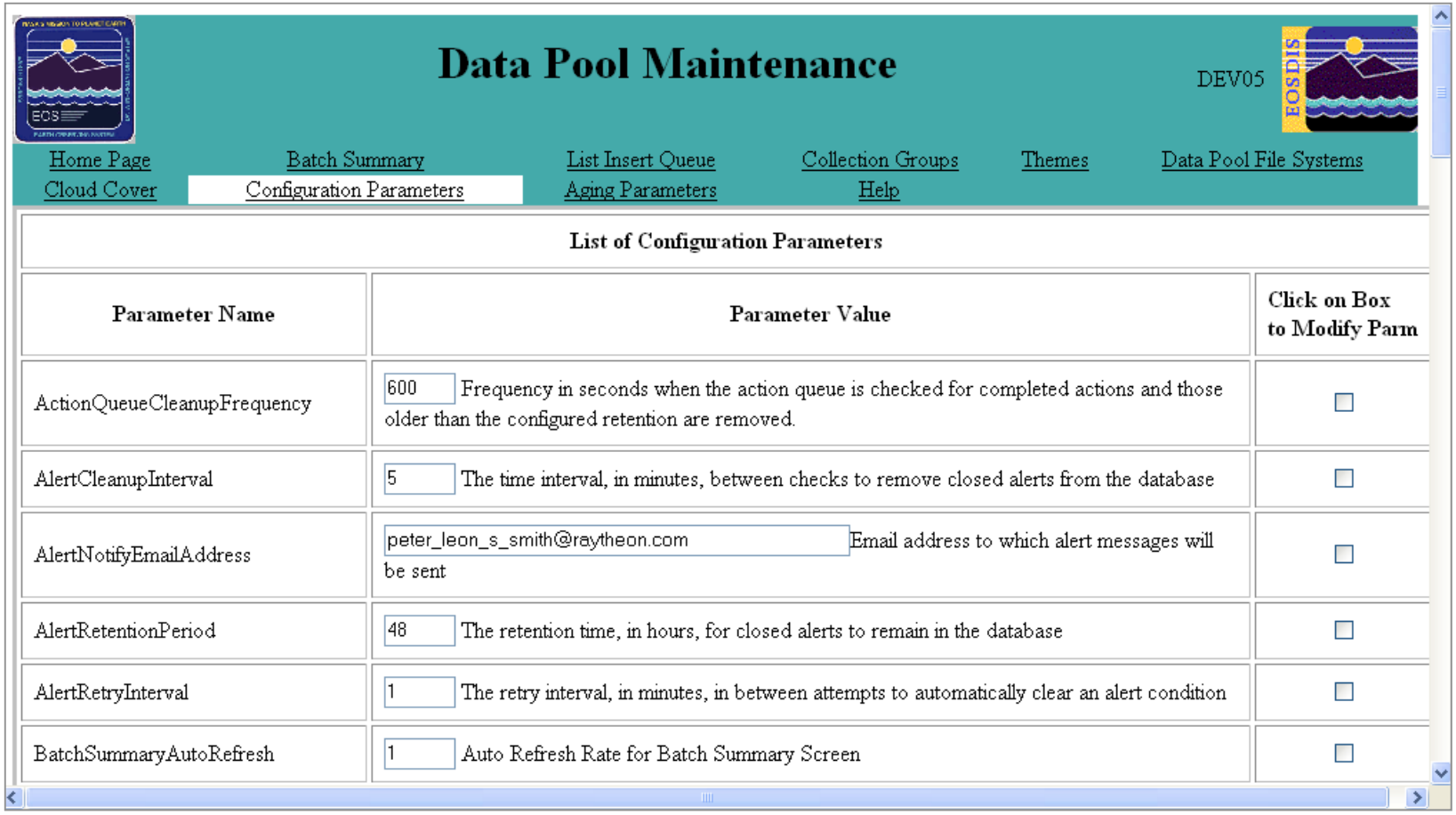
Detailed list of Data Pool Inserts using Current Filter (Number in List = 3)

Click on the NONECS link in the Data Source column to view the XMLfile associated with this insert

DataSource	BatchLabel	Dispatch Priority	RequestID	SubID	ECSID	Collection	Version	Science Granules and/or Metadata	Enqueue Time	Retries	Status	Click on Box to Cancel
NONECS	ideyTest2	10	--	1240	--	AIRHASCI	001	metadata only	Apr 29 2004 2:47PM	10	COMPLETE	■
ECS	HZ001	1	--	-1	10419	AST_L1BT	001	science and metadata	Apr 28 2004 5:28PM	-	COMPLETE	■
ECS	batchfile	1	--	-1	13214	AST_08	001	science and metadata	Apr 28 2004 3:14PM	-	COMPLETE	■

Continue Apply Change

DPM GUI: List of Configuration Parameters Page



Data Pool Maintenance

DEV05

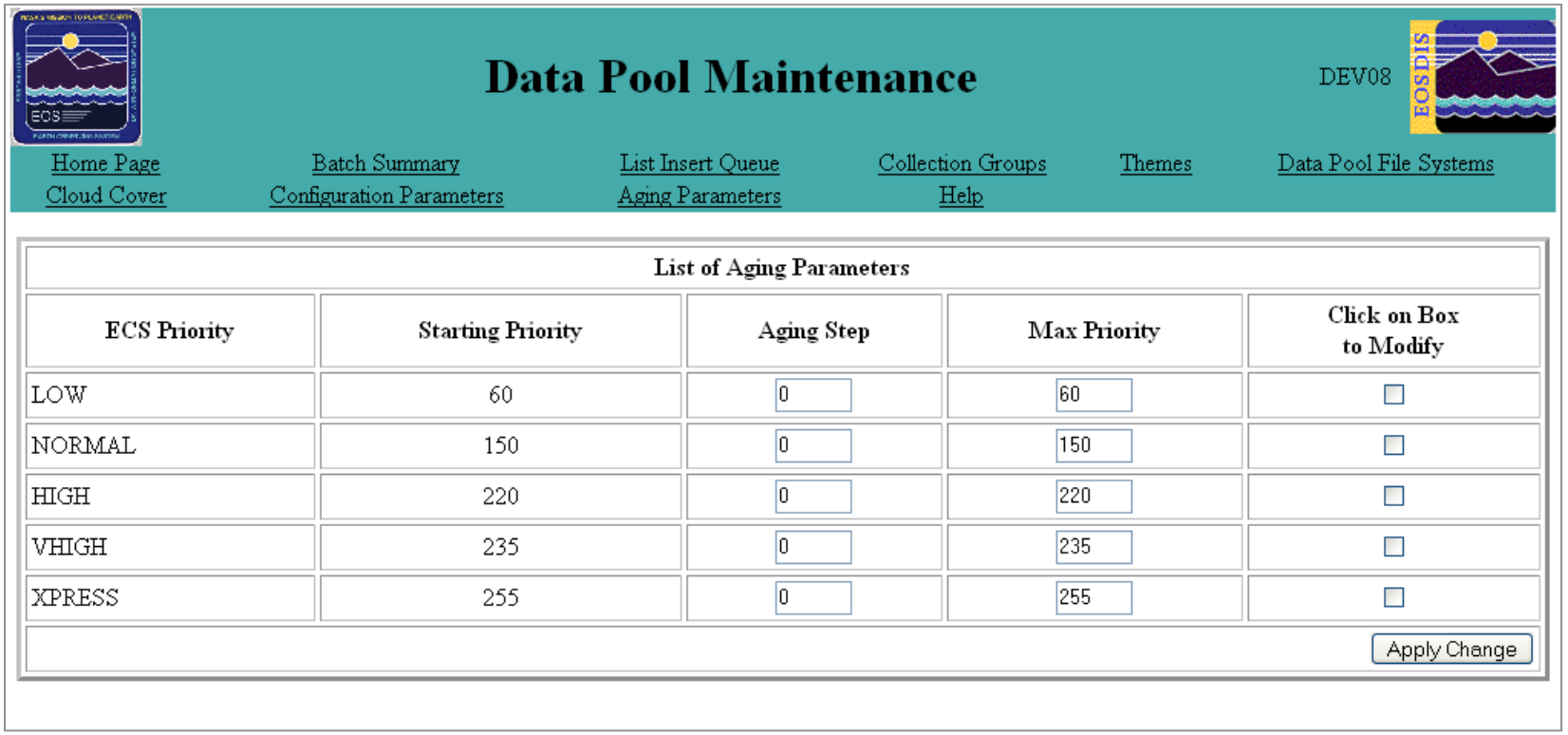
Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems

Cloud Cover | Configuration Parameters | Aging Parameters | Help

List of Configuration Parameters

Parameter Name	Parameter Value	Click on Box to Modify Parm
ActionQueueCleanupFrequency	600 Frequency in seconds when the action queue is checked for completed actions and those older than the configured retention are removed.	☐
AlertCleanupInterval	5 The time interval, in minutes, between checks to remove closed alerts from the database	☐
AlertNotifyEmailAddress	peter_leon_s_smith@raytheon.com Email address to which alert messages will be sent	☐
AlertRetentionPeriod	48 The retention time, in hours, for closed alerts to remain in the database	☐
AlertRetryInterval	1 The retry interval, in minutes, in between attempts to automatically clear an alert condition	☐
BatchSummaryAutoRefresh	1 Auto Refresh Rate for Batch Summary Screen	☐

DPM GUI: Aging Parameters Page



DPM GUI: Collection Groups Page

Data Pool Maintenance OPS

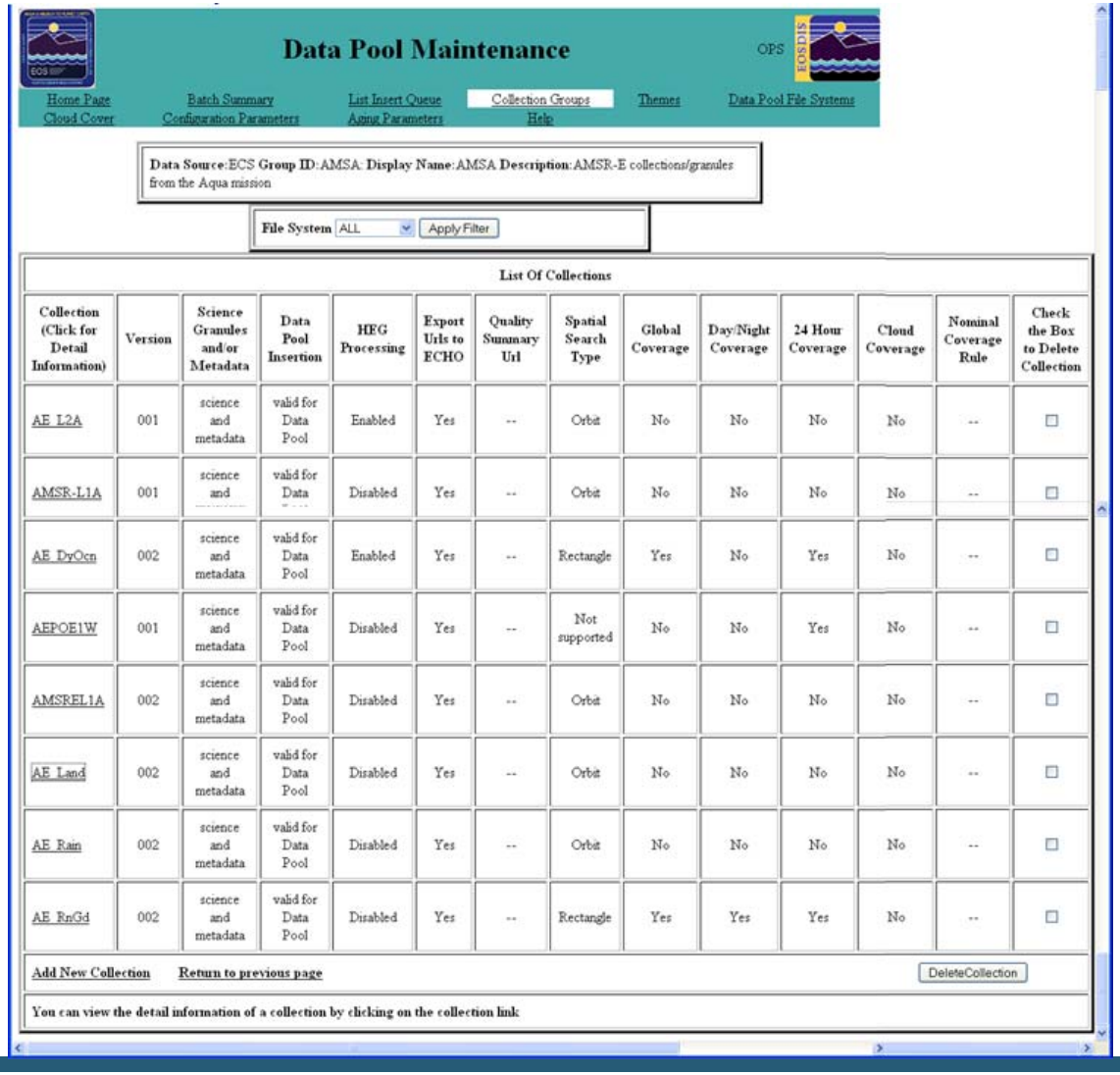
Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Cloud Cover | Configuration Parameters | Agent Parameters | Help

You can manage the collections of a group by clicking on the groupid

Data Source	Group ID (Click for managing collections)	Display Name	Description
ECS	ACRM	ACRM	All collections/granules from the ACRIM mission
ECS	AIRA	AIRA	AIRS/AMSU/MHS collections/granules from the Aqua mission
ECS	AMSA	AMSA	AMSR-E collections/granules from the Aqua mission
ECS	ASTT	ASTT	ASTER collections/granules from the Terra mission
ECS	BRWS	BRWS	Browse collections/granules
ECS	DASP	DASP	Data Assimilation System Products
ECS	GLAS	GLAS	Geoscience Laser Altimeter System
ECS	LSR7	LSR7	All collections/granules from the Landsat 7 mission
ECS	MOOA	MOOA	MODIS Oceans collections/granules from Aqua mission
ECS	MOOT	MOOT	MODIS Oceans collections/granules from the Terra mission
ECS	MOPT	MOPT	MOPITT collections/granules from the Terra mission
ECS	MOSA	MOSA	MODIS Snow and Ice collections/granules from the Aqua mission
ECS	MOST	MOST	MODIS Snow and Ice collections/granules from the Terra mission
ECS	MOTA	MOTA	MODIS Terra plus Aqua Combined
ECS	MSRT	MSRT	MISR collections/granules from the Terra mission
ECS	OTHR	OTHR	Other Products. This group is used for ancillary products or other non-science pro-
NON-ECS	OUTPUTS	OUTPUTS	This collection group uses for the output collections.
ECS	SAGE	SAGE_III_SCF	Weekly collection of files from NCEP of Atmospheric pressure/temperature profile
ECS	TES	TES	TES Data
ECS	TEST	TEST	Remap regression
NON-ECS	UAE	UAE	NONECS Data

Add Collection Group | Modify Collection Group

DPM GUI: List of Collection Page



Data Pool Maintenance

OPS

Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Cloud Cover | Configuration Parameters | Aging Parameters | Help

Data Source:ECS **Group ID:**AMSA **Display Name:**AMSA **Description:**AMSR-E collections/granules from the Aqua mission

File System ALL Apply Filter

List Of Collections

Collection (Click for Detail Information)	Version	Science Granules and/or Metadata	Data Pool Insertion	HEG Processing	Export Urls to ECHO	Quality Summary Url	Spatial Search Type	Global Coverage	Day/Night Coverage	24 Hour Coverage	Cloud Coverage	Nominal Coverage Rule	Check the Box to Delete Collection
AE_L2A	001	science and metadata	valid for Data Pool	Enabled	Yes	--	Orbit	No	No	No	No	--	☐
AMSR-L1A	001	science and	valid for Data	Disabled	Yes	--	Orbit	No	No	No	No	--	☐
AE_DyOcn	002	science and metadata	valid for Data Pool	Enabled	Yes	--	Rectangle	Yes	No	Yes	No	--	☐
AEPOE1W	001	science and metadata	valid for Data Pool	Disabled	Yes	--	Not supported	No	No	Yes	No	--	☐
AMSREL1A	002	science and metadata	valid for Data Pool	Disabled	Yes	--	Orbit	No	No	No	No	--	☐
AE_Land	002	science and metadata	valid for Data Pool	Disabled	Yes	--	Orbit	No	No	No	No	--	☐
AE_Rain	002	science and metadata	valid for Data Pool	Disabled	Yes	--	Orbit	No	No	No	No	--	☐
AE_RnGd	002	science and metadata	valid for Data Pool	Disabled	Yes	--	Rectangle	Yes	Yes	Yes	No	--	☐

Add New Collection | Return to previous page | DeleteCollection

You can view the detail information of a collection by clicking on the collection link

DPM GUI: ECS Collection Detail Information Page

Data Pool Maintenance

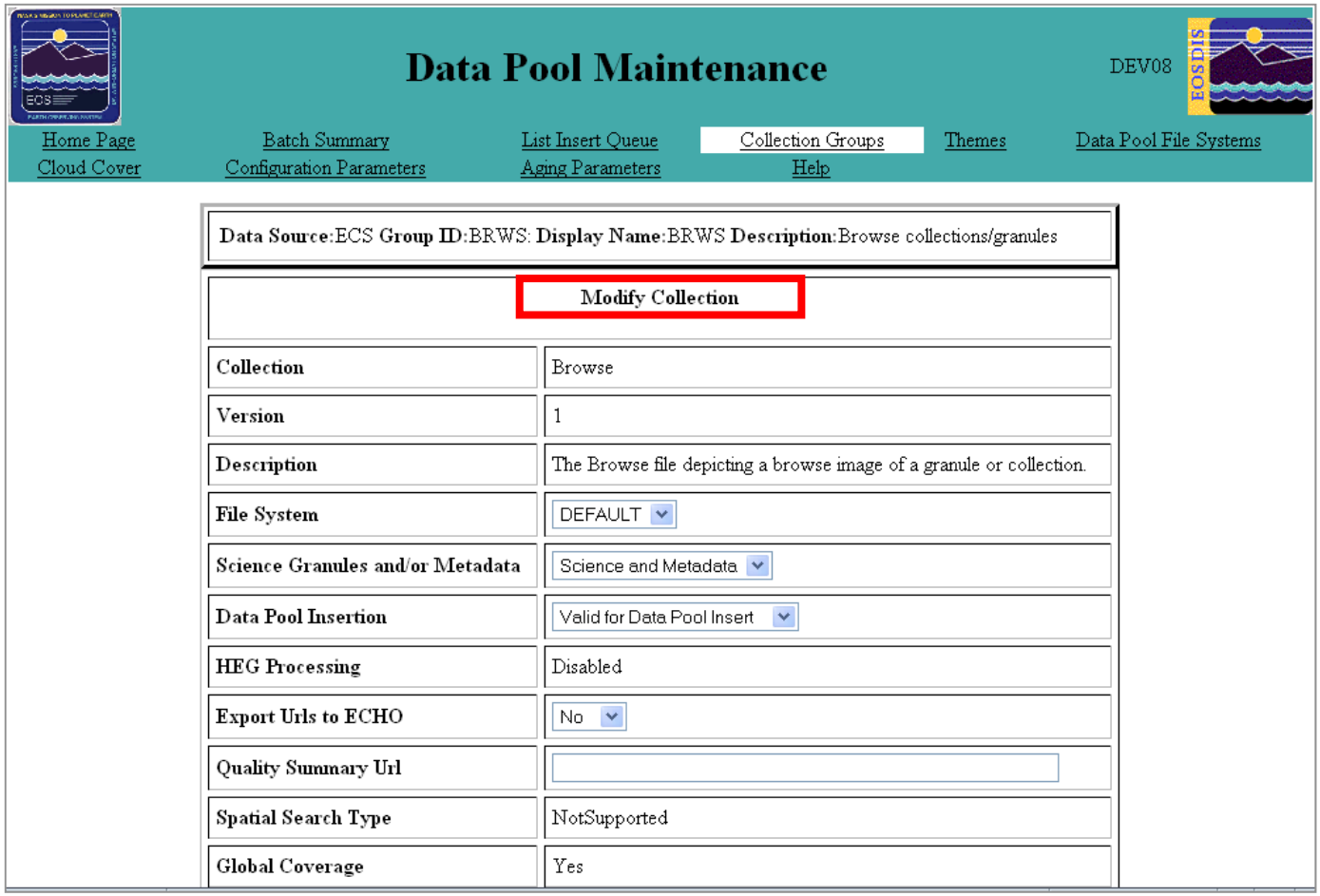
DEV05

Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Cloud Cover | Configuration Parameters | Aging Parameters | Help

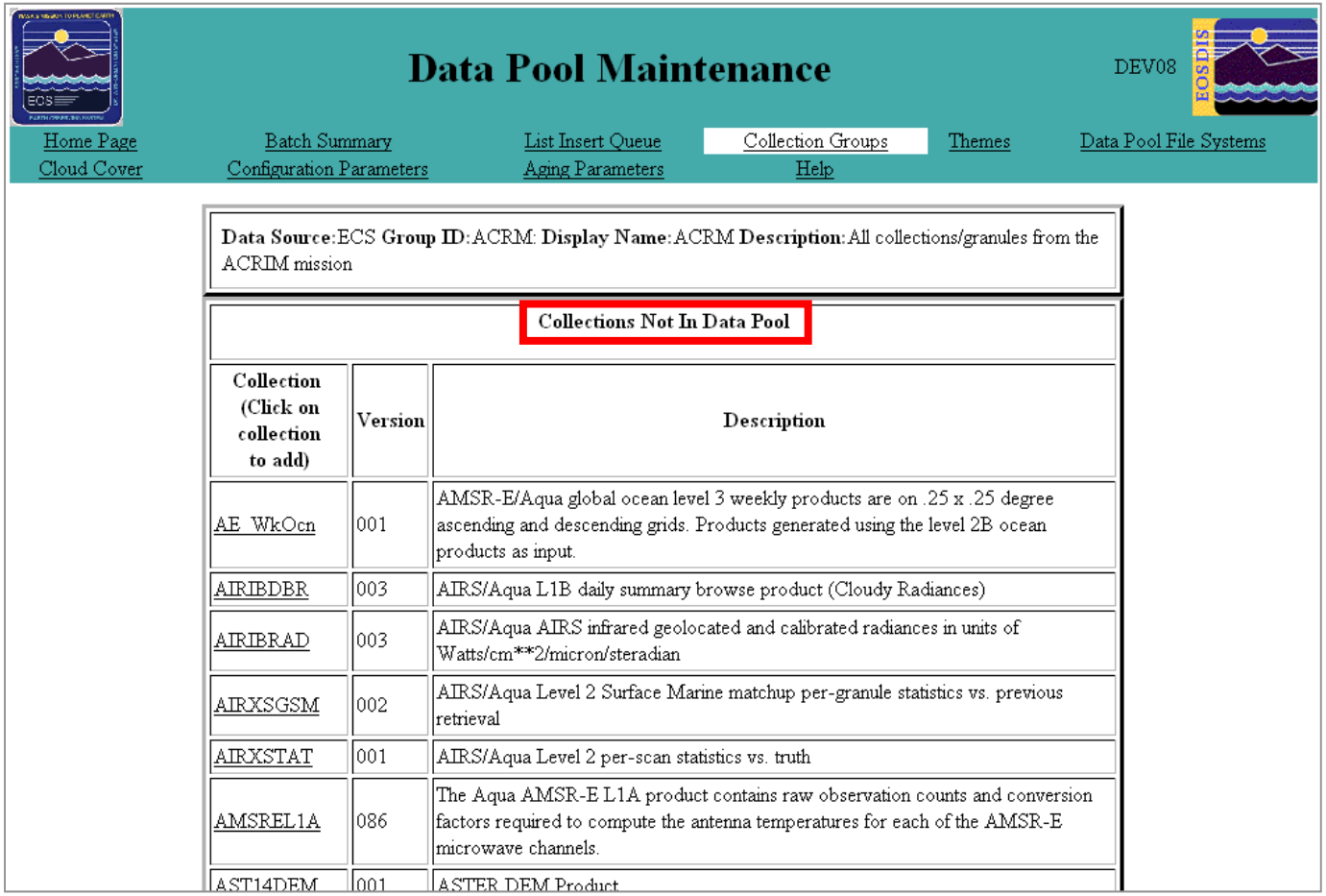
Data Source:ECS **Group ID:**GLAS: **Display Name:**GLAS **Description:**GLAS/ICESAT Group.

Detail Information	
Collection	GLA01
Version	86
Description	Data granules contain approximately 23 minutes (1/16 orbit) of data and will include pulse travel times, the transmitted and received waveform, transmitted and received energy, echo time offsets, and instrument filter and threshold values.
File System	DEFAULT
Science Granules and/or Metadata	Science and Metadata
Data Pool Insertion	Valid for Data Pool Inserts
HEG Processing	Disabled
Export Urls to ECHO	Yes
Allow ordering and viewing of associated PH granule	No
Allow ordering and viewing of associated QA granule	No
Allow ordering of associated Browse granule	No
Quality Summary Url	
Spatial Search Type	NotSupported
Global Coverage	No
Day/Night Coverage	No
24Hour Coverage	No
Cloud Cover Type	
Cloud Cover Source	
Cloud Cover Description	

DPM GUI: Modify Collection Page



DPM GUI: Collections Not in Data Pool Page



Data Pool Maintenance

DEV08

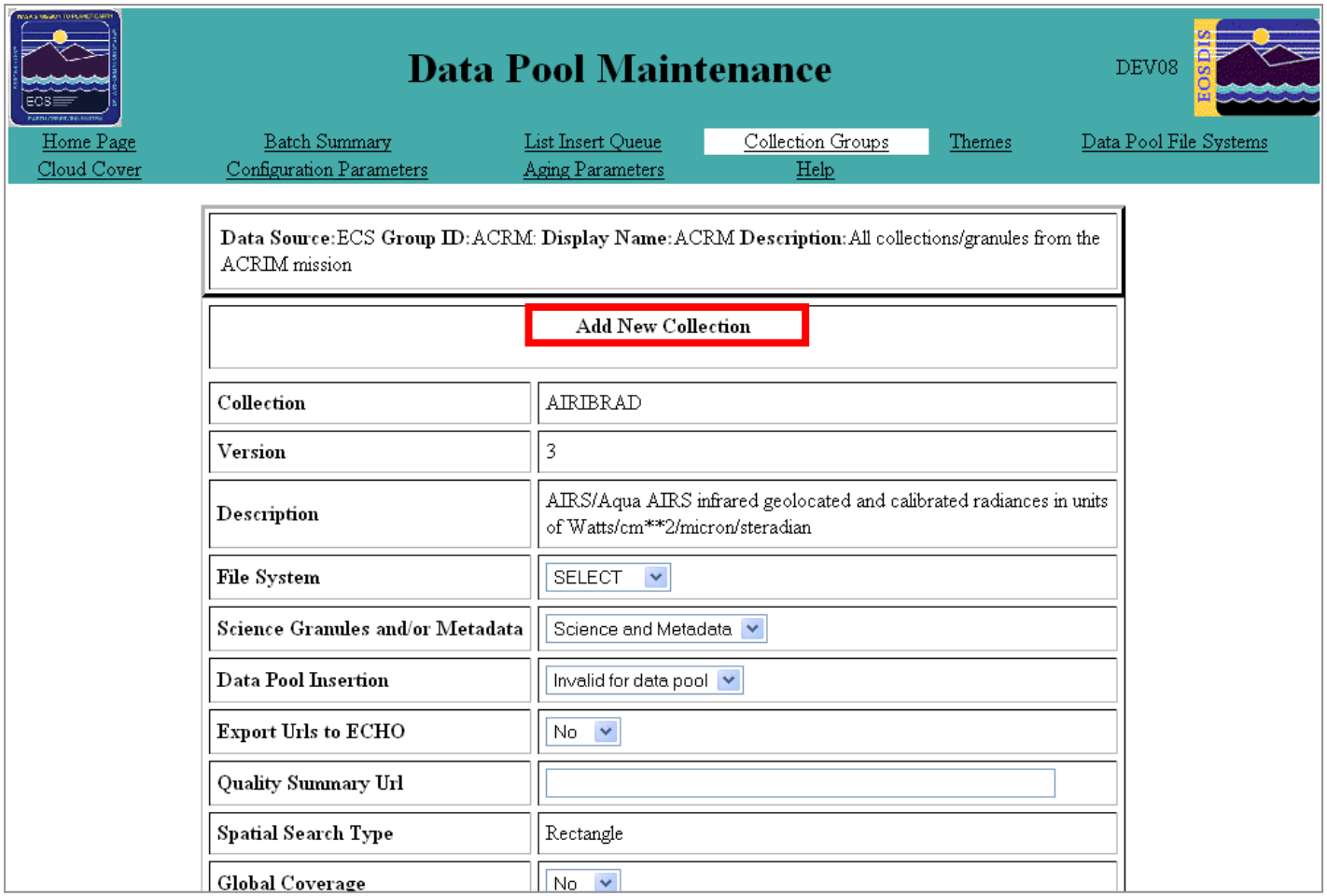
Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Cloud Cover | Configuration Parameters | Aging Parameters | Help

Data Source:ECS **Group ID:**ACRM: **Display Name:**ACRM **Description:**All collections/granules from the ACRIM mission

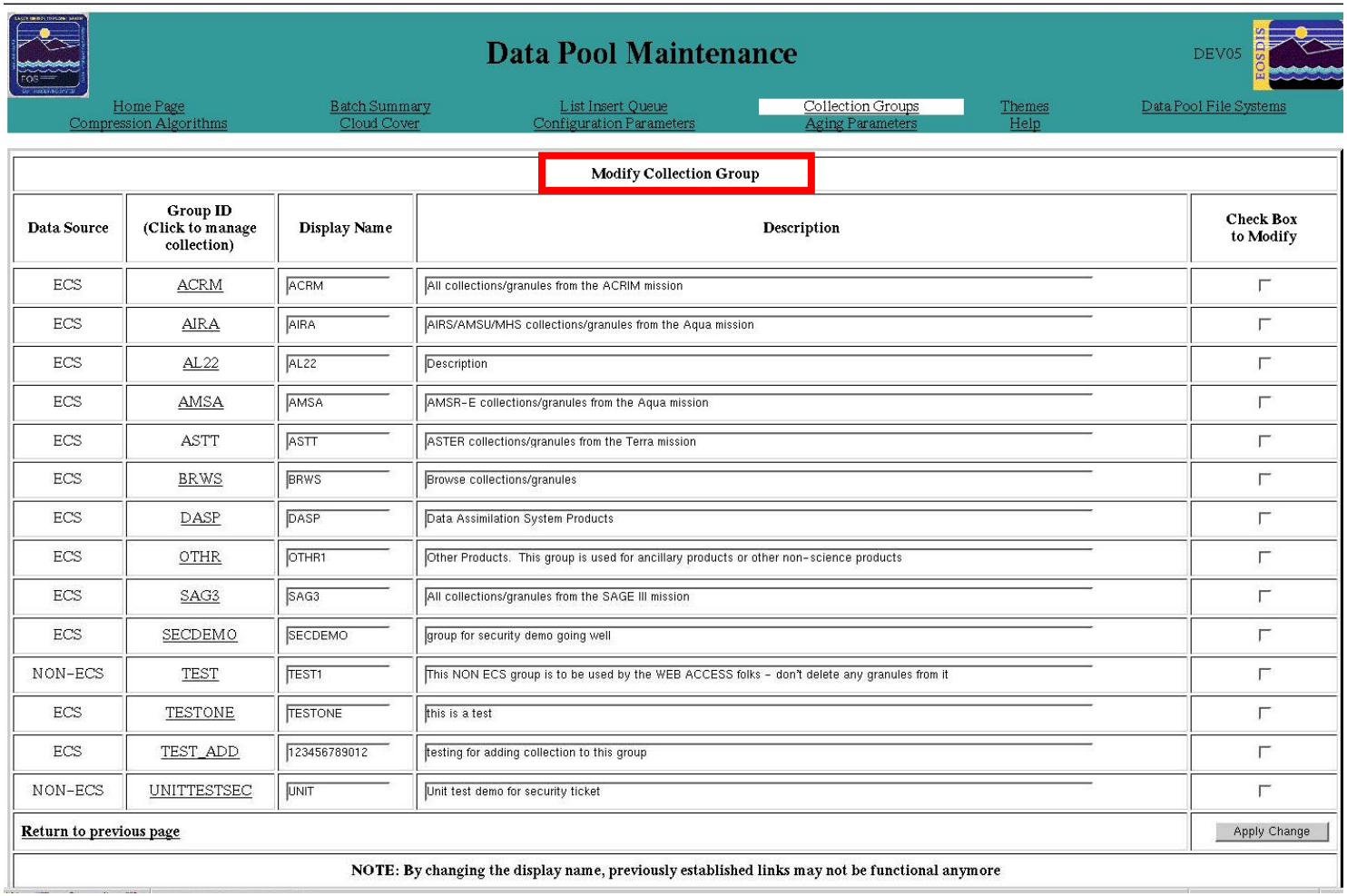
Collections Not In Data Pool

Collection (Click on collection to add)	Version	Description
AE_WkOcn	001	AMSR-E/Aqua global ocean level 3 weekly products are on .25 x .25 degree ascending and descending grids. Products generated using the level 2B ocean products as input.
AIRIBDBR	003	AIRS/Aqua L1B daily summary browse product (Cloudy Radiances)
AIRIBRAD	003	AIRS/Aqua AIRS infrared geolocated and calibrated radiances in units of Watts/cm**2/micron/steradian
AIRXSGSM	002	AIRS/Aqua Level 2 Surface Marine matchup per-granule statistics vs. previous retrieval
AIRXSTAT	001	AIRS/Aqua Level 2 per-scan statistics vs. truth
AMSREL1A	086	The Aqua AMSR-E L1A product contains raw observation counts and conversion factors required to compute the antenna temperatures for each of the AMSR-E microwave channels.
AST14DEM	001	ASTER DEM Product

DPM GUI: Add New [ECS] Collection Page



DPM GUI: Modify Collection Group Page



Data Pool Maintenance

DEV05

Home Page | Batch Summary | List Insert Queue | Collection Groups | Themes | Data Pool File Systems
Compression Algorithms | Cloud Cover | Configuration Parameters | Aging Parameters | Help

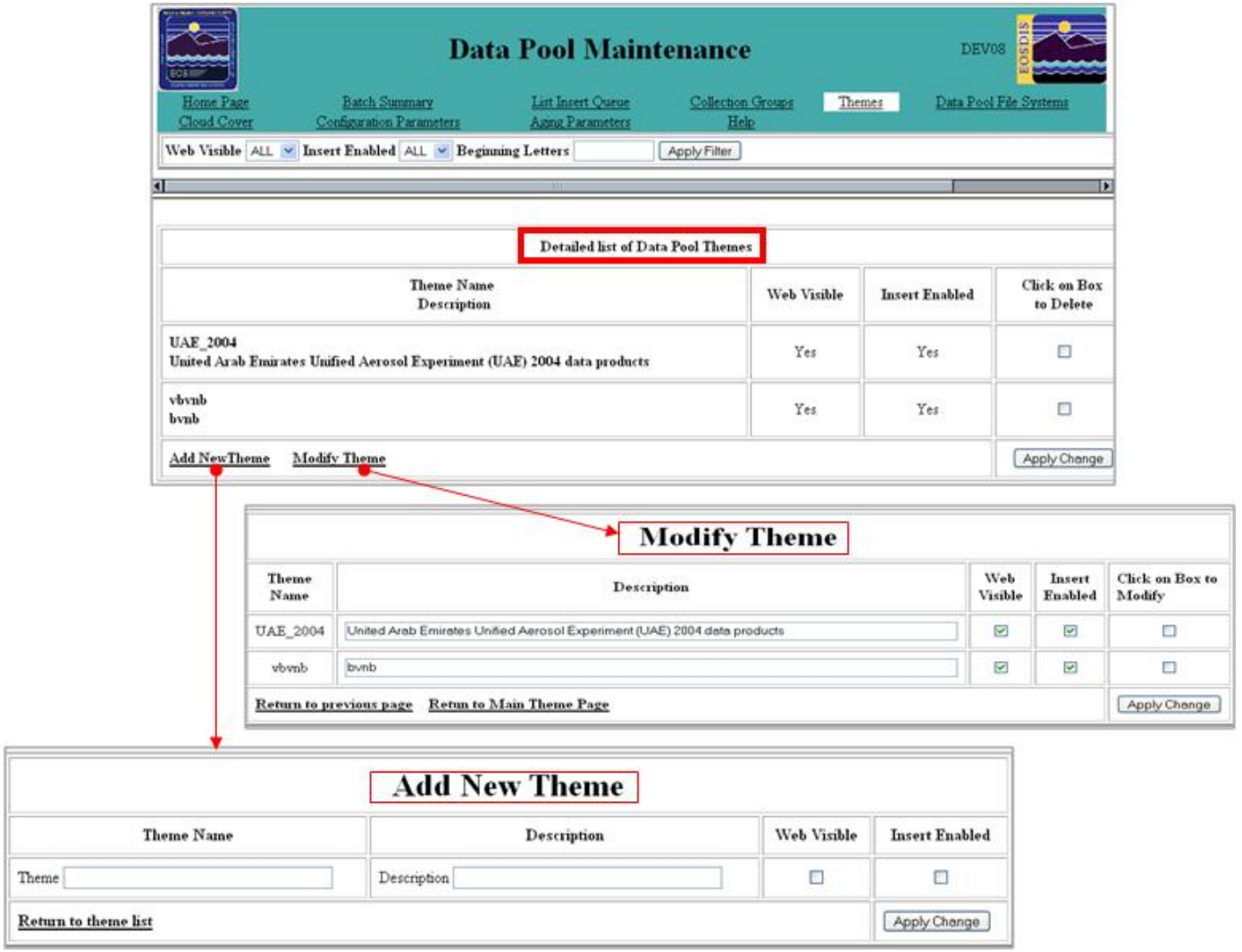
Modify Collection Group

Data Source	Group ID (Click to manage collection)	Display Name	Description	Check Box to Modify
ECS	ACRM	ACRM	All collections/granules from the ACRIM mission	☐
ECS	AIRA	AIRA	AIRS/AMSU/MHS collections/granules from the Aqua mission	☐
ECS	AL22	AL22	Description	☐
ECS	AMSA	AMSA	AMSR-E collections/granules from the Aqua mission	☐
ECS	ASTT	ASTT	ASTER collections/granules from the Terra mission	☐
ECS	BRWS	BRWS	Browse collections/granules	☐
ECS	DASP	DASP	Data Assimilation System Products	☐
ECS	OTHR	OTHR1	Other Products. This group is used for ancillary products or other non-science products	☐
ECS	SAG3	SAG3	All collections/granules from the SAGE III mission	☐
ECS	SECDEMO	SECDEMO	group for security demo going well	☐
NON-ECS	TEST	TEST1	This NON ECS group is to be used by the WEB ACCESS folks - don't delete any granules from it	☐
ECS	TESTONE	TESTONE	this is a test	☐
ECS	TEST_ADD	123456789012	testing for adding collection to this group	☐
NON-ECS	UNITTESTSEC	UNIT	Unit test demo for security ticket	☐

Return to previous page — Apply Change

NOTE: By changing the display name, previously established links may not be functional anymore

DPM GUI: Detailed List of Data Pool Themes Page (Add New & Modify)



DPM GUI: Help Page

Data Pool Maintenance

Return to previous page

1. The Data Pool Maintenance (DPM) GUI provides an operator interface to monitor the current status of Data Pool Inserts and to maintain specific Data Pool configuration parameters. Specifically, the DPM GUI allows the full capability operator to:

   - Suspend and Resume Data Pool Inserts
   - Configure parameters used by Data Pool Action Driver (DPAD) and Data Pool Insert Utility (DPIU)
   - Monitor the active insert processes
   - Monitor the Data Pool Insert Queue
   - Monitor Batch inserts
   - Manage existing Data Pool Collection Groups
   - Manage existing Data Pool Themes
   - Add new ECS Data Pool Collection Groups
   - Add new NON-ECS Data Pool Collection Groups
   - Add new Data Pool Themes
   - Delete Data Pool Themes
   - Manage Cloud Cover information in data pool
   - Manage data pool file system(s)
   - Manage compression algorithm configuration
   - End web server session (this can be done by read-only and full capability operators

2. The **DPM Home Page** gives the operator an overview of current Data Pool insert operations and file system availability. The home page screen is refreshed automatically, or can be immediately refreshed by clicking on the Refresh Home Page link. Tab buttons at the top of the home page may be used to navigate to the Batch Summary, List Insert Queue, Collection Groups, Themes, Data Pool File Systems, Compression Algorithms, Cloud Cover, Configurations Parameter, and Help pages. The End Session tab may be used to end the GUI session. The home page is divided into four sections: 1) home page tailoring parameters; 2) a summary of space usage and availability for the Data Pool file system(s); 3) a summary of active insert process statistics; and 4) a list of active insert processes. Two tailoring parameters are shown: the screen refresh rate and the number of active insert processes shown at one time in the List of Active Insert Processes table described below. The operator may adjust the values of these parameters by entering a new value in the input box and then clicking on the Apply button to initiate the changes. The Summary of Data Pool File System table shows the values of the free space status flag, the file system availability status flag, and the minimum freed space in MB for each configured Data Pool file system. The Summary of Active Processes table shows the configured values for maximum number of total insert processes, maximum number of insert processes from AMASS cache, and maximum number of insert processes from AMASS tape. This table also shows the actual numbers of insert processes which are active in each of these categories. The List of Active Insert Processes table shows detailed information about each active insert process. The number of rows displayed at a time is controlled by the Active Insert Processes tailoring parameter.
3. The **Batch Summary** tab gives a operator the status summary of batch inserts per batch label. This screen is refreshed automatically. The operator is shown the current refresh rate which is configurable.
4. The **List Insert Queue** tab allows the operator to monitor the Data Pool Inserts that are in the queue and are not yet being processed. The operator can cancel one or more queued Inserts by clicking on the checkbox adjacent to the queued insert process. After selecting all Inserts to be cancelled, click on the **Apply Change** button. The Data Pool Inserts will be marked as "CANCELED". The DPAD driver will clean up all cancelled inserts at a configured interval.
5. The **Collection Groups** tab allows all operator to view information about all collection groups in the Data Pool database. Full capability operators may perform the following operations:

   - The operator can add a new ECS or NON-ECS collection group by clicking on the **Add Collection Group** link. This link will take the operator to the **Add Collection Group** screen. This screen displays three required input fields and one optional: 1) Data Source : a toggle button which has ECS and NON-ECS for values; 2) Group ID: a text area to enter the name of a collection groups. This input will be checked for duplication against all existing collection group names. This group name must be 12 characters or less. Valid characters include A-Z, 0-9, and underscores; 3) Display Name: a text area to enter the name displayed for this collection group on the Data Pool Webaccess drill down GUI.. This field is optional. The display name must be 12 characters or less. Valid characters include A-Z, 0-9, underscores and spaces. If the Display name is not entered, it will default to the GroupID; 4) Description: a text area to enter a description for the collection group. The description can be up to 255 characters in length. The operator can enter one new collection group at a time. After entering the new collection group information, click on the **Apply Change** button. The new collection group will be added to the Data Pool database and the List of Collection Groups screen will be refreshed with the latest addition.
   - The operator can modify the display name and/or description for a Collection Group by clicking on the **Modify Collection Group** link. This link will take the operator to the Modify Collection Group screen. After making a change, click on the checkbox adjacent to the collection group. After making all changes, click on the **Apply Change** button. The changes will be applied to the Data Pool database and the List of Collection Groups screen will be refreshed with the current list of collection groups.
   - The operator can view the collections associated with a collection group by clicking on the link for the **GroupId** value. This link will take the operator to the List of Collections screen.
   - On the List of Collections screen the operator can view the detailed information of a collection by clicking on the link for the **Collection** name value. This link will take the operator to the **Detail Information** screen which will display the detailed description of a collection including -- Name, Version, Description, File System, Compression Algorithm Command Label, Science Granules and/or Metadata, Data Pool Insertion, HEG

Document: Done (0.754 secs)

Number of Drivers to Run

- **Recommended initial configuration**
  - **3 event drivers**
  - **3 action drivers**
  - **1 recovery driver**
  - **1 deletion driver**
- **EcNbDriverStart <*MODE*> d_e d_a d_r d_d**
- **Increase throughput by doubling number of event and action drivers (i.e., 6 each)**
- ***isql* query to identify a condition in which action processing lags behind event processing**
  - **select max(actionDateTime from EcNbActionQueueLog where actionStatus = 'Acquire' or actionStatus = 'ActionNotification'**
  - **if delay is an hour, try increasing number of action drivers to one and one-half times the number of event drivers (e.g., 6 event drivers and 9 action drivers)**

DPM GUI User Messages

Message Text	Impact	Cause and Corrective Action
DB Error: You entered a duplicate collection group name that exists in the database. Please try again	Unable to add a new group id	Duplicate group name is entered. Check the list of group ids and enter a group name consisting of four letters, which is not on the list.
INPUT Error: You entered an invalid group name. Please see help page for more information. Please see section Add Collection Group	Unable to add a new group	Lower case letter is entered. Group id should be all Upper case letters.
INPUT Error: You entered an invalid name. Please see log for more details.	Unable to add a new non-ECS collection	Special characters/small letters are entered.
INPUT Error: You entered an invalid theme name. Please see help page for more information. Please see section: Add New Theme	Unable to add a new theme	Special characters/small letters are entered. Theme names should be in capital letters and without any special characters.
DB Error: Theme can not be null or empty	Unable to add a theme	A null or empty string is entered. Theme name should contain capital, small letters. Space is also allowed but no special characters.

DPM GUI User Messages (Cont.)

Message Text	Impact	Cause and Corrective Action
DB Error: You entered either an existing theme name or a collection or a group name or an ESDT name. Check the log at /usr/ecs/<mode>/CUSTOM /log/EcDlDpmDataPoolGui. log for more details	Unable to add a theme	A name is entered, which is a duplicate name for a group, collection or an ESDT name.
DB Error: This collection is allowed for insertion therefore Spatial Search Type cannot be modified for this collection	Unable to modify Spatial Search type for a collection	Collection is not allowed for insertion. First make the collection allowed for insertion and then try to modify search type
DB Error: Error adding this collection. Collection entry <collection name> <version> already exist	Unable to add a collection.	Duplicate collection name entered. Verify the list of collection and then enter a name, which is unique.
DB Error: Internal error occurred	A db transaction interrupted.	Database connection is lost for network error. No suggestion.
DB Error: delete failed because there are granules associated with this theme	Unable to delete a theme.	There are granules associated with this theme. Disassociate granules from this theme and then delete it.

Data Pool Scripts

- **Data Pool Cleanup Utility**

  – Script which removes non-ECS granules in input file, regardless of whether it's public or hidden; will not remove granules in open orders.

Data Pool Scripts (Cont.)

- **Data Pool Cleanup Orphan/Phantom Validation**
  - **Validates the AIM inventory and disk content by checking for the existence of orphans and/or phantoms and removing or simply logging them depending on the command line options specified.**
- **Link Checker Utility**
  - **Used to find or delete 'broken' symbolic links, i.e., softlinks that do not point to a valid files.**
- **Data Pool Publish Utility**
  - **Publishes specified granules from a file, command line or collection. It is primarily designed to publish granules that already exist in the Data Pool, but it can also be used to move granules into the publicData Pool from AIM.**

Data Pool Scripts (Cont.)

- **Data Pool Unpublish Utility**
  - **Unpublishes specified granules and remove associated browse granule if permitted from the Online Archive.**
  - **Unpublish granules which are marked for deletion in the AIM database (deleteEffectiveDate is set, or DFA flag is set to "Y" or "H"), for example, as would occur after a run of the Granule Deletion Utility.**
- **Inventory Validation Utility**
  - **Script that verify the consistency of the ECS archive.**
- **Validation Tool: Archive Checksum Verification Utility (ACVU)**
  - **Script that identifies corrupt files in the tape Archive; uses a copy of the file in the Online Archive for validation.**

Data Pool Scripts (Cont.)

- **Data Pool Checksum Verification Utility (DPCV)**
  - **Utility was replaced by the Data Pool Checksum Verification Service (CVS) due to performance issues.**
  - *Script that compares checksum in Inventory database with checksum on disk in Online Archive.*
- **Restore Online Archive from Tape Utility**
  - **The RestoreOlaFromTape utility, repairs individual granules or files that are lost or damaged in the on-line archive provided that the inventory entries of the corresponding granules are completely intact.**
- **Restore Tape from Online Archive Utility**
  - **The RestoreTapeFromOla utility, repairs individual files that are lost or corrupted on tape based on the primary file instance that is present in the on-line archive. The inventory entries of the corresponding granules must be completely intact - the utility will not repair inventory database entries.**

Data Pool Scripts (Cont.)

- **Data Pool Access Statistics Utility (DPASU) – Rollup Script**
  - **Extract and summarize statistics from access logs produced by the Data Pool FTP server, the httpd access, and EOSDIS Service interface (ESI) Data Access, to data in the Data Pool.**
  - **Statistics are stored in the Inventory database that can be used to produce tabular reports for loading/manipulation by a spreadsheet application program.**
- **Data Pool Access Statistics Utility (DPASU) – Maintenance Script**
  - **This script will backup, restore, and delete data in the related Inventory database tables.**
  - **An operational support tools used for archiving, deleting, and backing up granule access data in the Inventory database.**

Data Pool Scripts (Cont.)

- **XML Archive Corruption Check Utility**
  - **Script to periodically check corruption in the XML Archive.**
  - **The XML Archive Corruption Check utility is started by entering the following command: EcDsAmXcu.pl <mode> <command line parameters>**

Data Pool Scripts (Cont.)

- **Most Recent Data Pool Inserts Utility**
  - **Runs as a cron, lists the most recent additions to the Data Pool**
- **Data Pool Collection-to-Group Remapping Utility**
  - **Command-line utility that re-assigns a Data Pool collection to a collection group other than one to which it was originally assigned**
- **Data Pool Move Collections Utility**
  - **Command-line interface that moves Data Pool collections from one file system to another.**
- **Data Pool Hidden Scrambler Utility**
  - **Command-line utility that makes the transition to or renames (with encrypted names) hidden directories for order-only granules in the Data Pool.**

Data Pool Scripts (Cont.)

- **Data Pool Band Backfill Utility**
  - **Command line tool that can correct band extraction problems that occurred during DPL registrations. Granule registrations cannot fail if band extraction problems are encountered, but the subsequent publications on convert-enabled data types must fail if the band information is not present in the Inventory database at publication time.**
- **Data Pool Remove Collection Utility**
  - **Provides a mechanism by which ECS Operations staff can remove collections from the Inventory database that are no longer of interest to the end users.**

Data Pool Cleanup Granules Utility

- **The CleanupGranules Utility (EcDlCleanupGranule.pl) replaces EcDlCleanupData Pool "cleanup only"**
- **Removes files and database entries for specified non-ECS granules from the Data Pool and provides a way to return ECS granules that failed publication to a known state.**
- **Propagates AIM Granule Deletions to Data Pool**
- **To specify new granules to be cleanup, one of the following five parameters can be used:**
  - **-file <filename>**
  - **-geoidfile <filename>**
  - **-grans "<gran1><gran2><gran3>…"**
  - **-expired**

Data Pool Cleanup Orphan/Phantom Validation Utility

- **The CleanupFilesOnDisk Utility (EcDlCleanupFilesOnDisk.pl) replaces EcDlCleanupDataPool "validation" functionality**
- **Identifies orphans (on disk, not in database) and phantoms (in database, not on disk) in Data Pool (public and hidden)**
  - **Science phantoms**
  - **Browse phantoms**
  - **Browse files with no cross reference to science granules**
  - **Science orphans**
  - **Browse orphans**
- **Always does both orphan and phantom checking (no –orphan or –phantom option)**

Data Pool Cleanup Orphan/Phantom Validation Utility (Cont.)

- **Deletes orphan files if –fix option is used**
- **Does not repair phantoms**
- **If –fix option is used, also**
  - **Removes files in temporary directories older than MAX_ORDER_AGE**
  - **Removes "DpRecentInserts" files older than 7 days**

Link Checker Utility

- **The EcDlLinkCheck.ksh script finds 'broken' links in the Data Pool directories, i.e., links whose targets do not exist**
  - **Public Data Pool: Browse links (from science directory to browse directory)**
  - **Hidden Data Pool: links to granules in public Data Pool for order purposes**
  - **Pulldir: links to granules in public Data Pool for order purposes**

- **Removes the broken links, if –fix option is used**

Inventory Validation Utility

- **The Inventory Validation Tool (EcDlInventoryValidationTool.pl) provides the EED Operations Staff with a command-line interface to verify the consistency of the ECS archive.**
- **-mode is a required parameter to specify the mode of operation. The MODE parameter is mandatory as the first parameter**
- **-outputDir is a optional parameter to specify the relative path under base directory, defined under parameter VALIDATION_OUTPUT_DIR in the configuration file EcDlInventoryValidationTool.CFG.**

Data Pool Inventory Validation Utility (Cont.)

- **-suppressLDeleted is a optional parameter when identifying granules that are missing in the Inventory database, used to ignore granules that have been logically deleted (deleteEffectiveDate is not null) in the AIM database.**
- **-suppressDFAed is a optional parameter when identifying granules that are missing in the Inventory database, used to ignore granules that have been DFAed (DeleteFromArchive = “Y”) in the AIM database.**
- **EcDlInventoryValidationTool.pl <command line parameters>**

Data Pool Checksum Verification Utility (DPCV)

- **The DataPool Checksum Verification Utility (EcDlDPCVStart) provides a mechanism by which the ECS Operations Staff can perform checksum verification for files in the Data Pool. It can be scheduled and run as a background process to proactively verify the integrity of files in the Data Pool.**
- **The utility is capable of performing checksum verification by sampling files based on ESDT and insert date range, or elapsed time since the last time checksum was verified, or a given granule list.**
- **According to the sampling options specified, the utility scans the appropriate files and verify their checksum values.**
- **Upon successful checksum verification, the utility will update the time when checksum was verified for each file in the DataPool database.**

Data Pool Access Statistics Utility (DPASU) Rollup

- **Processes logs of httpd access or FTP access and stores results in tables in the Inventory database (DlGranuleAccess table)**
- **Three versions, each with configuration file**
  - **EcDlDaRollupApacheLogs.ksh to accesses through ESI Data Access**
  - **EcDlRollupWuFtpLogs.pl access to the Data Pool via anonymous ftp**
  - **EcDlRollupHttpLogs.pl access to the Data Pool via httpd**
- **The Data Pool access rollup scripts are run by cron.**
- **Captured data is written to a flat file and exported to database**

Data Pool Access Statistics Utility (DPASU) Maintenance

- **The Maintenance scripts are operational support tools used to backup, restore, and delete data in the related Inventory database tables.**
- **These scripts can be run on the command line and connect to the Inventory database to process data contained therein**
- **Associated shell scripts**
  - **DlDbArchiveAccessStat**
  - **DlDbDeleteAccessStat**
  - **DlDbRestoreAccessStat**

Data Pool Hidden Scrambler Utility

- **Running the Data Pool Hidden Scrambler Utility in Rename Mode**
  - **The Data Pool Hidden Scrambler Utility (EcDlHiddenScrambler.pl) can be run in either of the following two modes:**
    - **Transition**
    - **Rename**
  - **In transition mode the utility generates hidden directory names and corresponding database entries for every collection defined for Data Pool in the affected operating mode**
    - **The transition mode can be used while Data Pool is up**
    - **The utility should be run in transition mode only once; i.e., the first time the utility is run in any given operating mode**
    - **Because transition mode is not used during normal operation, it is not described in any detail in this lesson**

Data Pool Hidden Scrambler Utility (Cont.)

- **Running the Data Pool Hidden Scrambler Utility in Rename Mode (Cont.)**
  - **In rename mode the utility renames all of the scrambled names to a new scrambled name**
    - **This involves updates to the directory in the file system and to the database**
    - **Links from the FtpPull area (and elsewhere) are preserved**
    - **Renaming is done during DAAC downtime only**
  - **If the Data Pool Hidden Scrambler Utility is interrupted during execution, upon restart it detects failures from the previous run and continues processing whatever was left unprocessed**
    - **The operator is given no choice as to recovery**
    - **Either recovery proceeds or the Data Pool inventory and disk files are in a corrupted state**

Data Pool Hidden Scrambler Utility (Cont.)

- **Running the Data Pool Hidden Scrambler Utility in Rename Mode (Cont.)**

WARNING

The Data Pool Hidden Scrambler Utility should be run in transition mode only once; i.e., the first time the utility is run in any given operating mode. In normal operations, the Data Pool Hidden Scrambler Utility is run in rename mode.

Most Recent Data Pool Inserts Utility

- **The Most Recent Data Pool Insert Utility (EcDlMostRecentInsert) lists the most recent additions to the Data Pool. The output of the utility is a set of files that a user could download and quickly inspect to identify recent additions to the Data Pool.**
- **The utility takes in a date command-line parameter indicating the day of interest to the user.**
- **The Most Recent Data Pool Insert Utility mainly runs as a cron job. However, the utility can be run from the command line.**
- **The procedure for running the Most Recent Data Pool Insert Utility is based on the following assumptions:**
  - **Database server is running.**
  - **Inventory database is available.**
  - **Stored procedures are present.**

Data Pool Collection-to-Group Remapping Utility

- **The Data Pool Collection-to-Group Remapping Utility (EcDlRemap.pl) is a command-line utility interface that is used for reassigning a Data Pool collection to a collection group other than the one to which it was originally assigned.**
- **The procedure for running the Data Pool Collection-to-Group Remapping Utility is based on the following assumptions:**
  - **"Insert Enabled Flag" for the source collection has been turned off using the Data Pool Maintenance GUI.**
  - **The group to which the user is mapping the collection already exists in the Inventory database.**
  - **The group to which the user is mapping the collection is not the "BRWS" (browse) group.**

Data Pool Collection-to-Group Remapping Utility (Cont.)

- The collection to be remapped is not the Browse (Browse.001) collection.
- Inventory database server is running.
- Inventory database is available.
- Stored procedures are present.
- There are several assumptions expected of the Data Pool Collection-to-Group Remapping Utility:
  - The existance of the collection in the Data Pool to which the user is mapping.
  - The browse collection is always located in the group “BRWS”.
  - The stored procedures are present.
- The Group Mapping utility runs only if the database server is running and if the database is available.

Data Pool Move Collections Utility

- **The Move Collections Utility (EcDlMoveCollection.pl) provides the EED Operations Staff with a command-line interface to move collections from one file system to another.**
- **The utility relies on the fact that symbolic links will be set from the collection's old filesystem to its new filesystem.**

  For example, before a move, a collection might be located here: /datapool/OPS/user/FS1/MOAT/AIRABRAD.007. After invoking the utility with a target filesystem of FS2, it will be moved to /datapool/OPS/user/FS2/MOAT/AIRABRAD.007 with a symbolic link from its old location, i.e. /datapool/OPS/user/FS1/MOAT/AIRABRAD.007 →/datapool/OPS/user/FS2/MOAT/AIRABRAD.007

Data Pool Band Backfill Utility

- **The DPL Backfill Utility (EcBandBackfillUtilityStart) is a command line tool that can correct band extraction problems that occurred during DPL registrations. Granule registrations cannot fail if band extraction problems are encountered but the subsequent publications on convert-enabled data types must fail if the band information is not present in the Inventory database at publication time.**
- **The Band Backfill utility was developed to correct the problems above. It will:**
  - **- backfill the band information in the Inventory database for the registered granules specified in its input file.**
  - **- request the publication of the backfilled granules via the new Data Pool Action driver.**
- **The DAAC Operations staff can identify the granules that need band backfill via the Data Pool Maintenance GUI, or by inspecting the EcDlNewInsertUtilitiyDPAD.log file. In both cases, the type of error encountered is:**
  - ***ERROR publreg operation encountered a convertEnabled granule with no band information, granuleState***

Archive Checksum Verification Utility (ACVU)

- **The Archive Checksum Validation utility (EcDsAmAcvu.pl) provides a mechanism by which the ECS Operations Staff can perform checksum verification of files in the AIM archive.**
- **According to the sampling criteria specified, the utility will identify the files to be verified, organize the result by location on tape, verify their checksum values, and update the last checksum verification time and status in the AIM Inventory database. The utility will need to verify that an LTO tape is in the near-line archive (i.e. not off-line) and alert the operator if the tape is off-line.**

Archive Checksum Verification Utility (Cont.)

- **Upon detection of checksum verification failure after a configurable number of retry attempts (NUM_RETRIES in configuration file), the utility will log detailed information about the failure.**
- **The log will also include statistical summary information including total number of files checked, number of files that failed checksum, percentage of files that failed checksum, categorized by ESDT.**

XML Check Utility (XCU)

- **The XML Check utility (EcDlXcu.pl) provides a mechanism by which the EED Operations Staff can periodically check for corruption in the XML Archive.**
- **In order to detect corruption, the utility verifies the contents of the files are well formed using xmllint.**
- **There are eight command line parameters that may be used:**
  - **-days is a optional parameter to specify days since last checked.**
  - **-percent is a optional parameter to specify percentage of files to check.**
  - **-ESDT is required if granuleid or file parameters are not present. This parameter is used to specify which ESDTs to check. This is a comma separated list (no spaces). Can also specify "ALL" to include all ESDTs.**

XML Check Utility (Cont.)

- -startdate is a optional parameter used with –ESDT option. Specifies starting insert date to use for ESDTs.
- -enddate is a optional parameter used with –ESDT option. Specifies ending insert date to use for ESDTs.
- -granuleid is required if ESDT or file parameters are not present. This parameter is used to specify which granules to check. This is a comma separated list (no spaces).
- -file is required if ESDT or granuleid parameters are not present. This parameter is used to specify which granules to check. Granule ids should be listed in a file separated by newlines.
- -outputDir is a optional parameter to specify directory for error files under /workingdata/emd/<MODE>/Xcu.

Using the Spatial Subscription Server GUI

- **The Spatial Subscription Server (NBSRV) GUI provides a convenient means of associating a Data Pool insert action with a subscription and designating a subscription for secure distribution**
  - **This can be done by User Services and/or science personnel, but the archive support personnel should also be familiar with the GUI and its use**
  - **Other tasks done with the Spatial Subscription Server GUI may also be of use to archive personnel**
    - **For example, viewing the acquire and notification actions currently being processed by the Spatial Subscription Server and viewing statistics on the processing of events and actions by the Spatial Subscription Server**

Using the Spatial Subscription Server GUI (Cont.)

- **The Spatial Subscription Server GUI permits an operator to perform the following kinds of activities:**
  - **View subscribable events**
  - **Review existing subscriptions in the Spatial Subscription Server (NBSRV) database**
  - **Add a subscription specifying Data Pool qualification and retention criteria, thus adding a subscription for Data Pool insert to the database**
  - **Create a standard subscription for notification and/or distribution of ECS data products**
  - **Designate a subscription for secure distribution**

Using the Spatial Subscription Server GUI (Cont.)

- **The Spatial Subscription Server GUI permits an operator to perform the following kinds of activities (Cont.):**
  - **View the acquire and notification actions currently being processed by the Spatial Subscription Server**
  - **View statistics on the processing of events and actions by the Spatial Subscription Server**

Using the Spatial Subscription Server GUI (Cont.)

- **New operator GUI security standards require the following two levels of permissions for the Spatial Subscription Server GUI:**
  - **Full Capability**
  - **Limited Capability**
- **An operator's level of permission is determined when the operator logs in to the GUI using the security login prompt**

Using the Spatial Subscription Server GUI (Cont.)

- **Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the Spatial Subscription Server GUI**
- **Limited-capability operators are able to view a lot of information**
  - **However, on the limited-capability GUI some buttons and links have been disabled so it is not possible to perform certain actions or access certain pages**

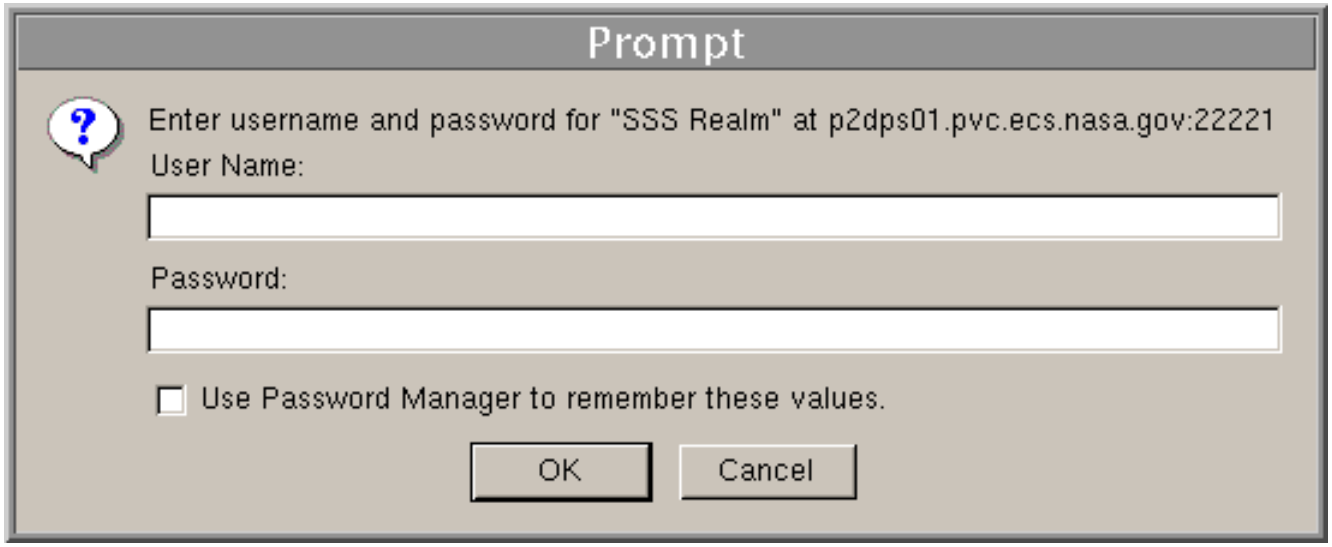
Using the Spatial Subscription Server GUI (Cont.)

- **This lesson provides instruction in the full-capability version of the Spatial Subscription Server GUI. In general, both full-capability operators and limited-capability operators can view the following items:**
  - **Subscribable events**
  - **Subscriptions**
  - **Bundling orders**
  - **Action queue**
  - **Statistics relating to Spatial Subscription Server performance**

Using the Spatial Subscription Server GUI (Cont.)

- **Full-capability operators only may perform the actions:**
  - **Add, update, or delete (cancel) a subscription**
  - **Configure defaults for a bundling order**
  - **Add, update, or cancel a bundling order**
- **The Spatial Subscription Server GUI is a web application certified for use with Mozilla Firefox**

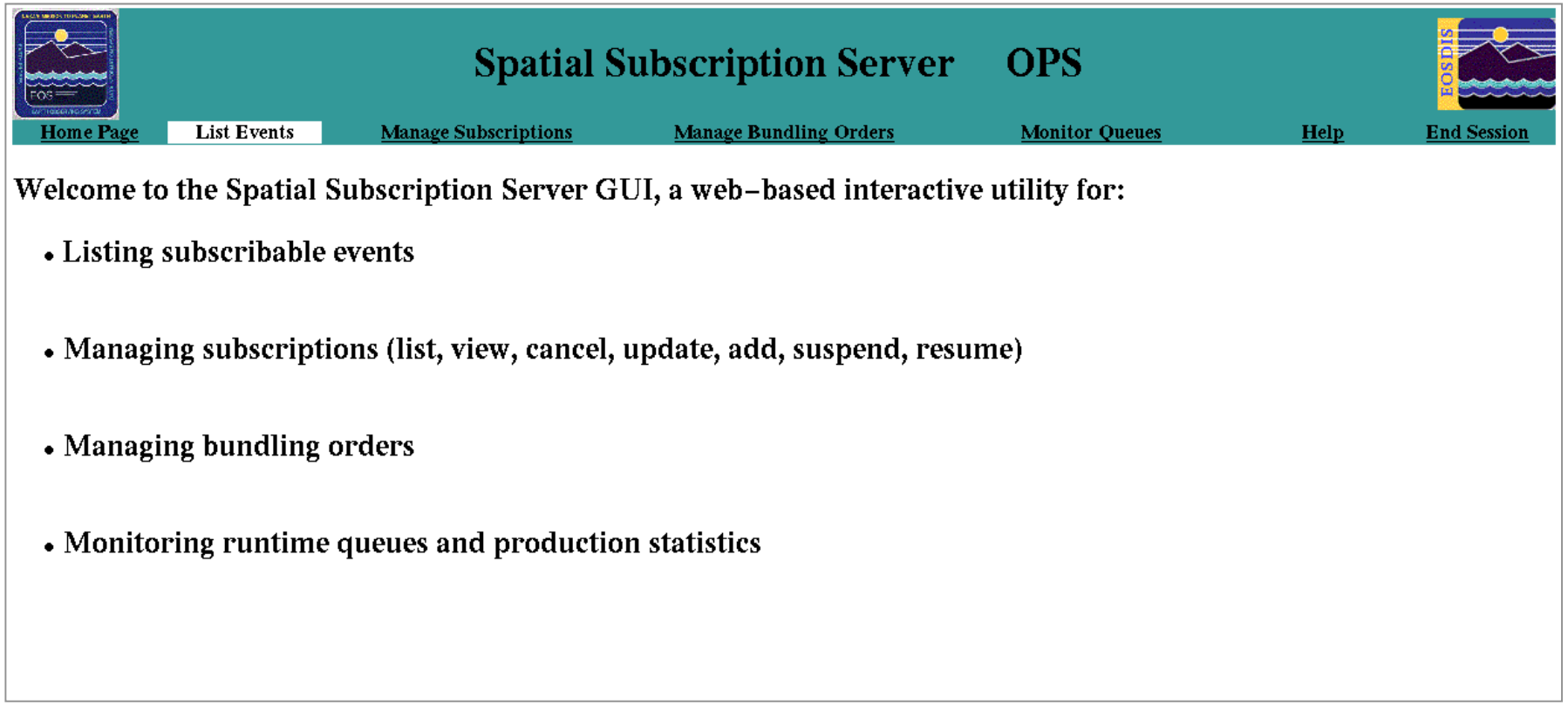
Security Login Prompt



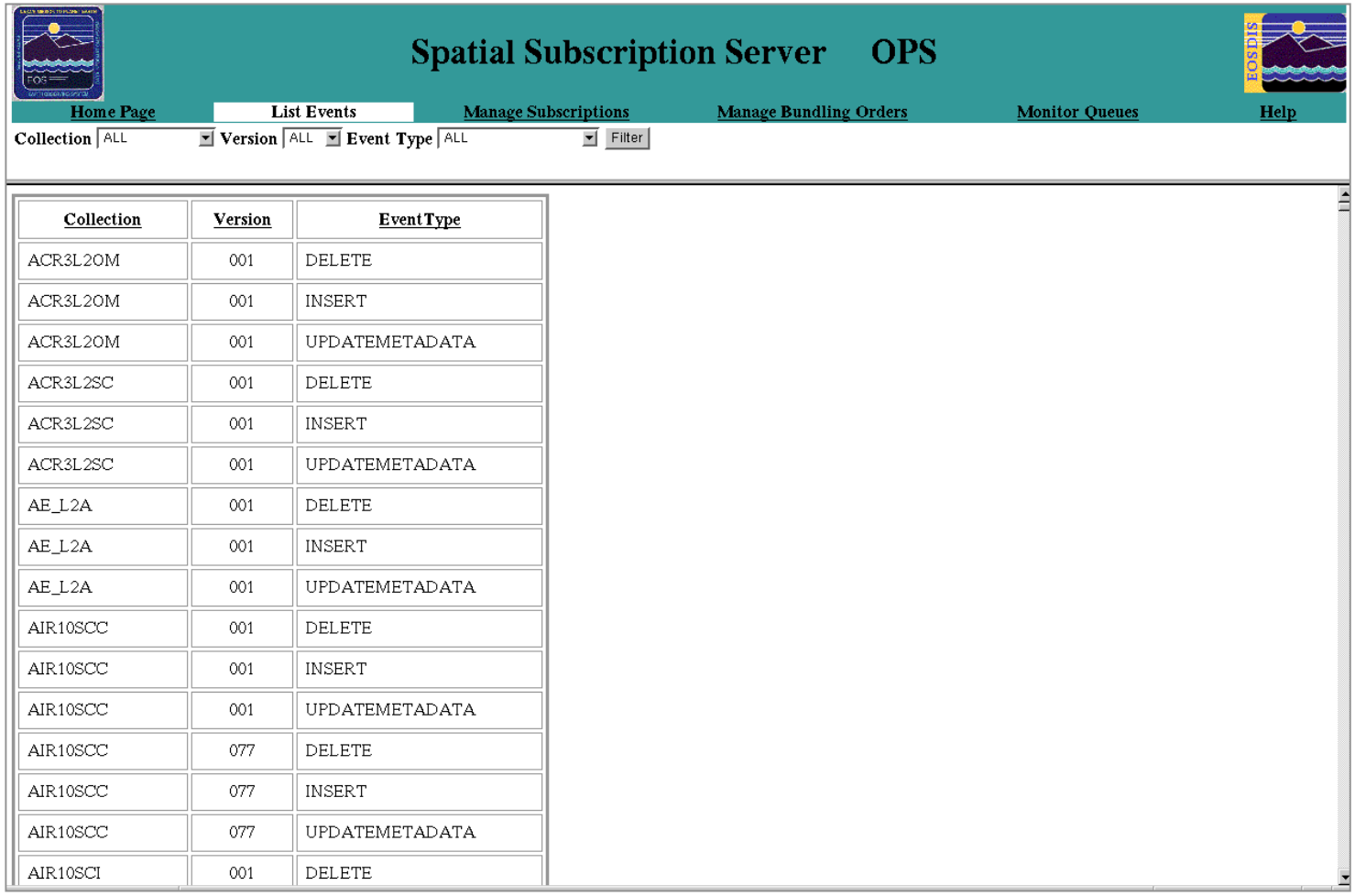
Using the Spatial Subscription Server GUI (Cont.)

- **The Spatial Subscription Server GUI Home Page provides four links for access to pages supporting various tasks:**
  - **List Events: access to pages for listing subscribable events**
  - **Manage Subscriptions: access to pages for managing subscriptions**
  - **Manage Bundling Orders: access to pages for managing bundling orders**
  - **Monitor Queues: access to pages for monitoring the action queue and listing statistics**
- **There is also a Help link providing descriptions of the Spatial Subscription Server functions to provide the operator with assistance in navigating through the GUI**

Spatial Subscription Server GUI Home Page

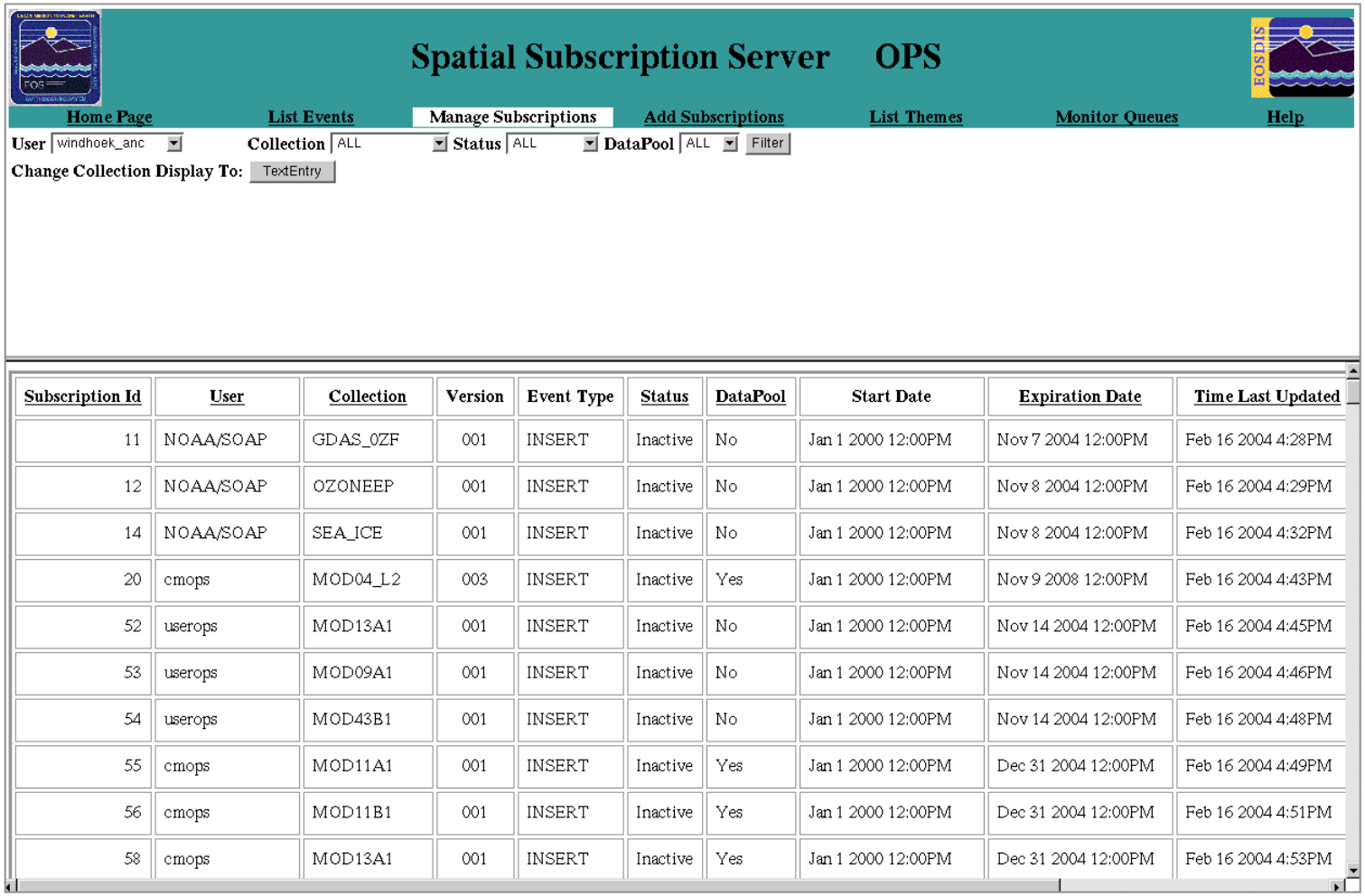


Spatial Subscription Server GUI List Events Page



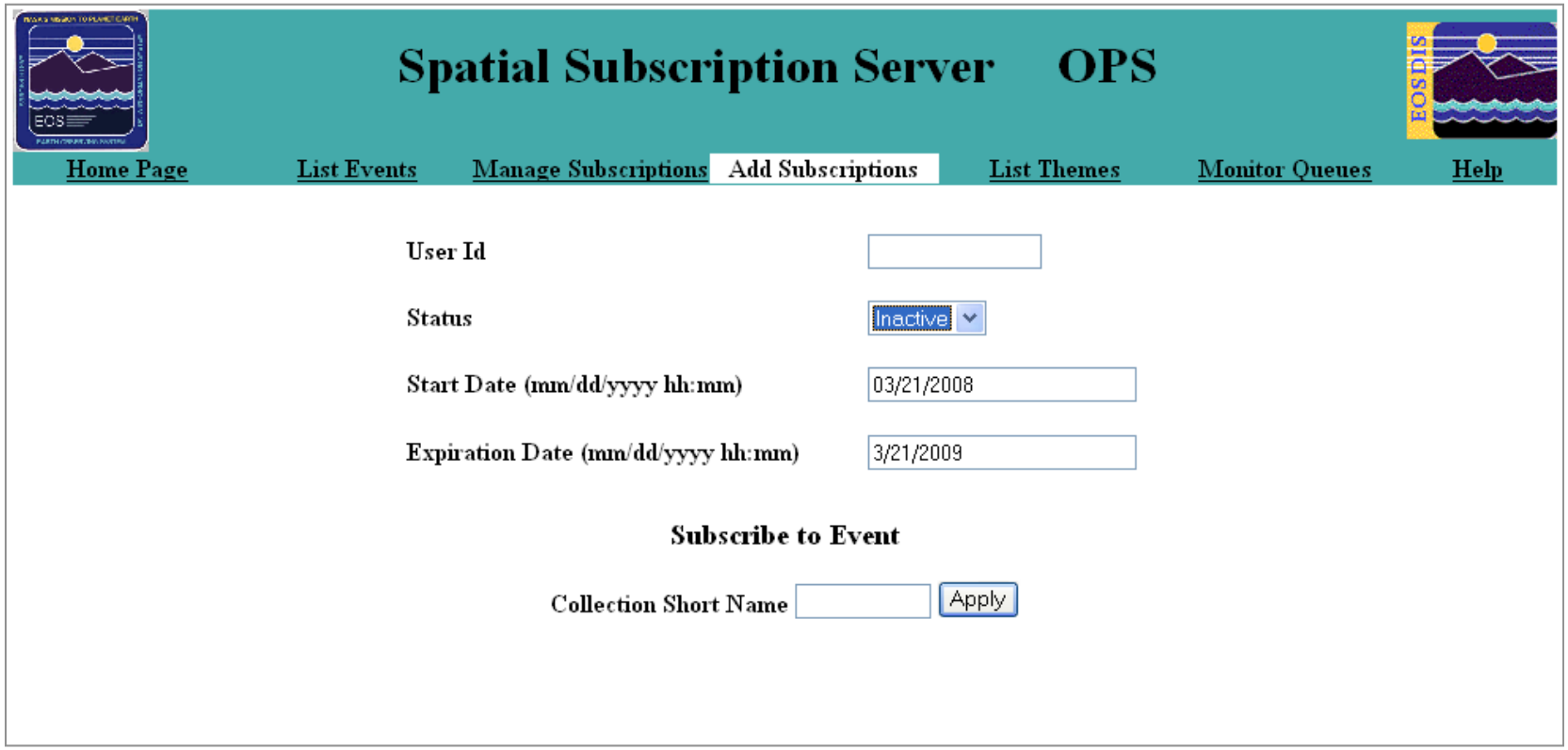
Collection	Version	EventType
ACR3L2OM	001	DELETE
ACR3L2OM	001	INSERT
ACR3L2OM	001	UPDATEMETADATA
ACR3L2SC	001	DELETE
ACR3L2SC	001	INSERT
ACR3L2SC	001	UPDATEMETADATA
AE_L2A	001	DELETE
AE_L2A	001	INSERT
AE_L2A	001	UPDATEMETADATA
AIR10SCC	001	DELETE
AIR10SCC	001	INSERT
AIR10SCC	001	UPDATEMETADATA
AIR10SCC	077	DELETE
AIR10SCC	077	INSERT
AIR10SCC	077	UPDATEMETADATA
AIR10SCI	001	DELETE

Spatial Subscription Server GUI Manage Subscriptions Page

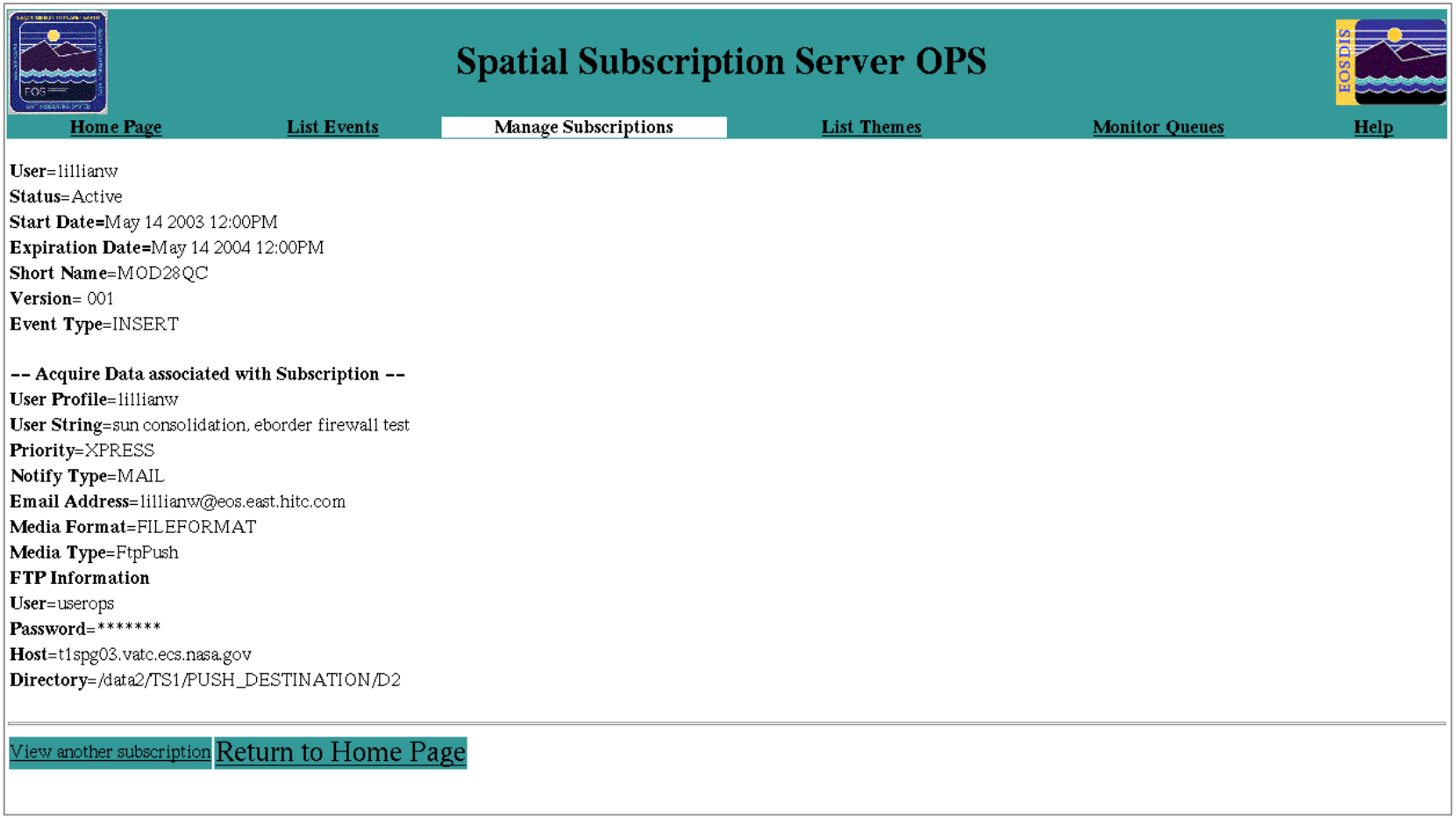


Subscription Id	User	Collection	Version	Event Type	Status	DataPool	Start Date	Expiration Date	Time Last Updated
11	NOAA/SOAP	GDAS_0ZF	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 7 2004 12:00PM	Feb 16 2004 4:28PM
12	NOAA/SOAP	OZONEEP	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 8 2004 12:00PM	Feb 16 2004 4:29PM
14	NOAA/SOAP	SEA_ICE	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 8 2004 12:00PM	Feb 16 2004 4:32PM
20	cmops	MOD04_L2	003	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Nov 9 2008 12:00PM	Feb 16 2004 4:43PM
52	userops	MOD13A1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:45PM
53	userops	MOD09A1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:46PM
54	userops	MOD43B1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:48PM
55	cmops	MOD11A1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:49PM
56	cmops	MOD11B1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:51PM
58	cmops	MOD13A1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:53PM

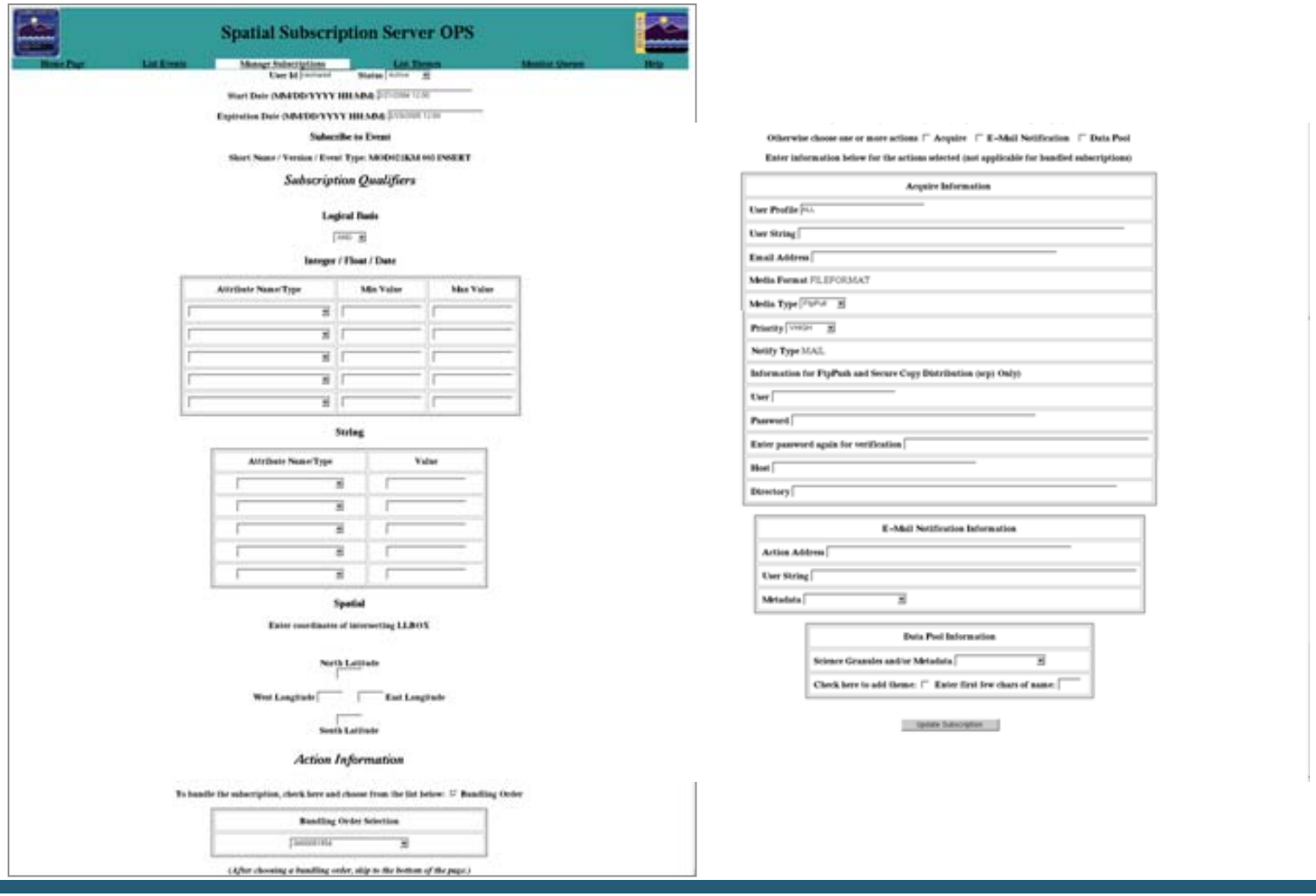
Spatial Subscription Server GUI Add Subscriptions Page



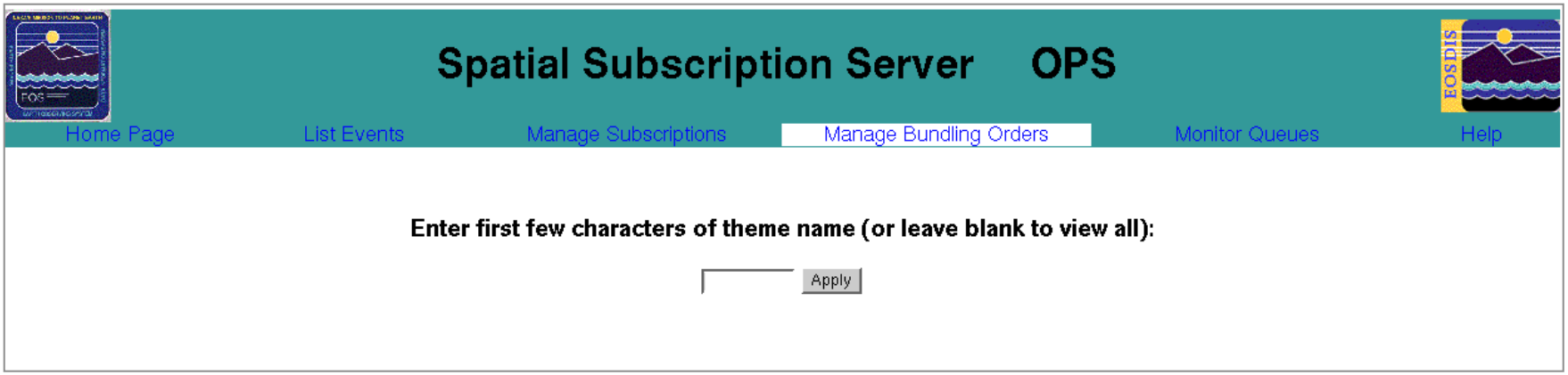
Spatial Subscription Server GUI View Subscriptions Page



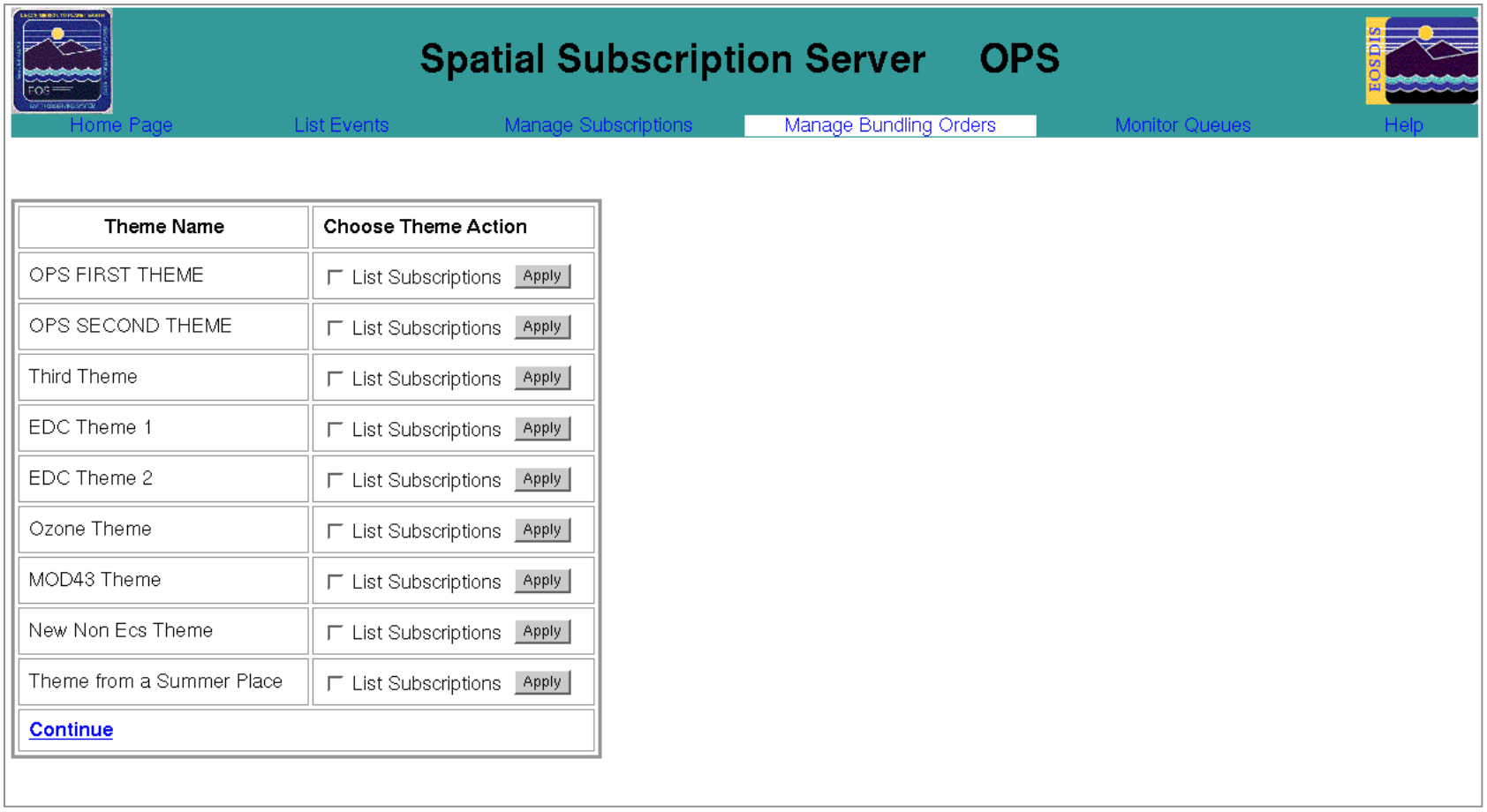
Spatial Subscription Server GUI Update Subscriptions Page



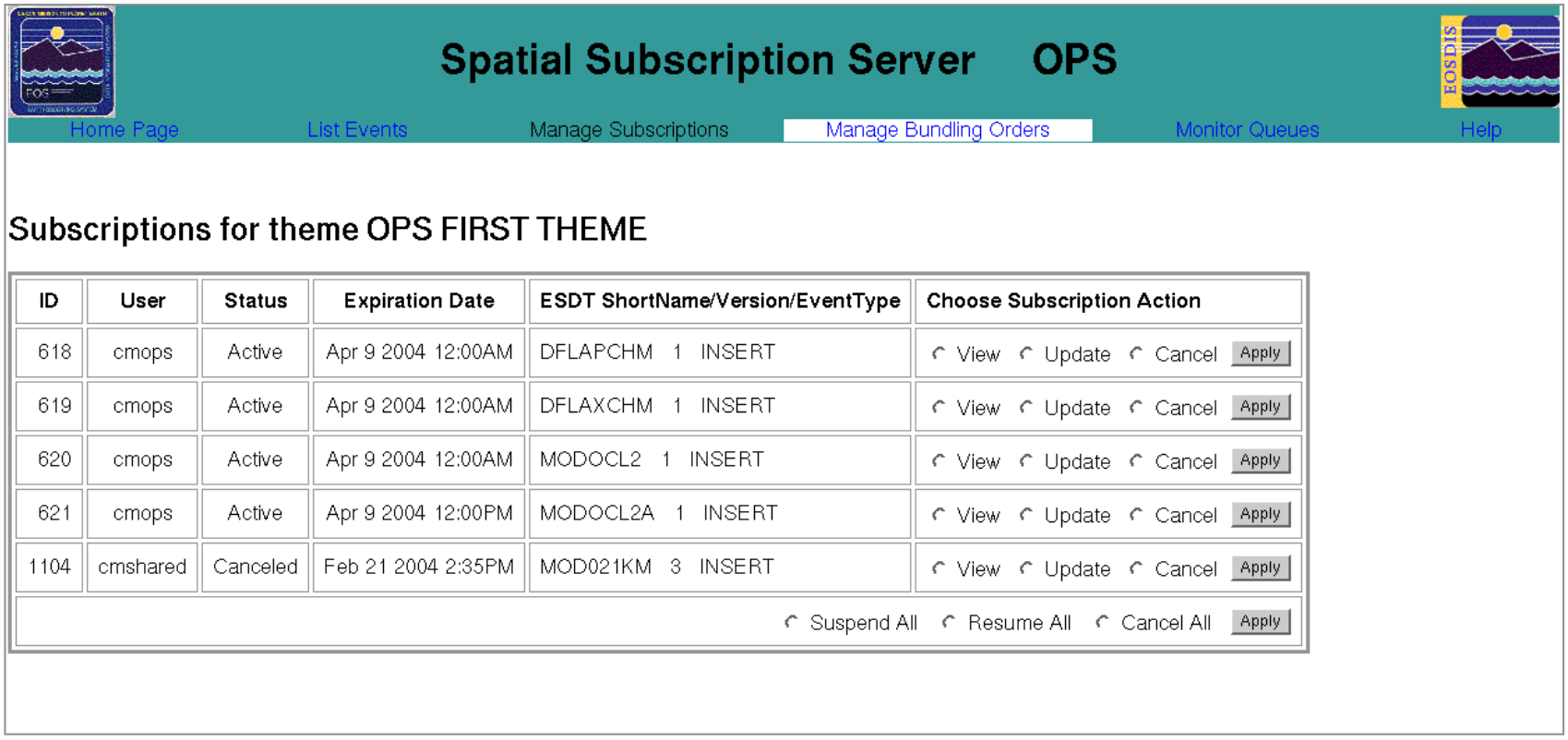
Spatial Subscription Server GUI
List Themes Request Page



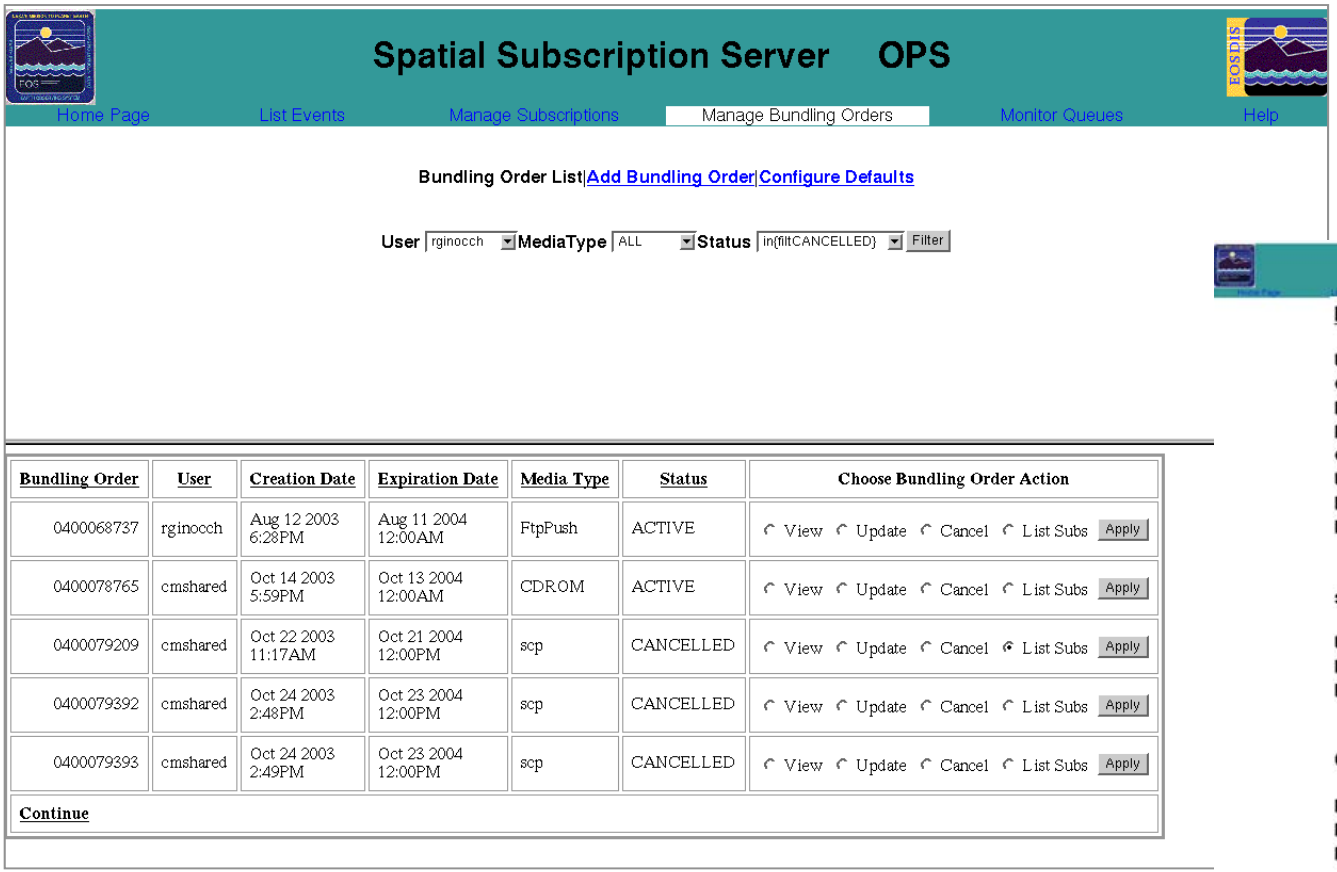
Spatial Subscription Server GUI Theme List Page

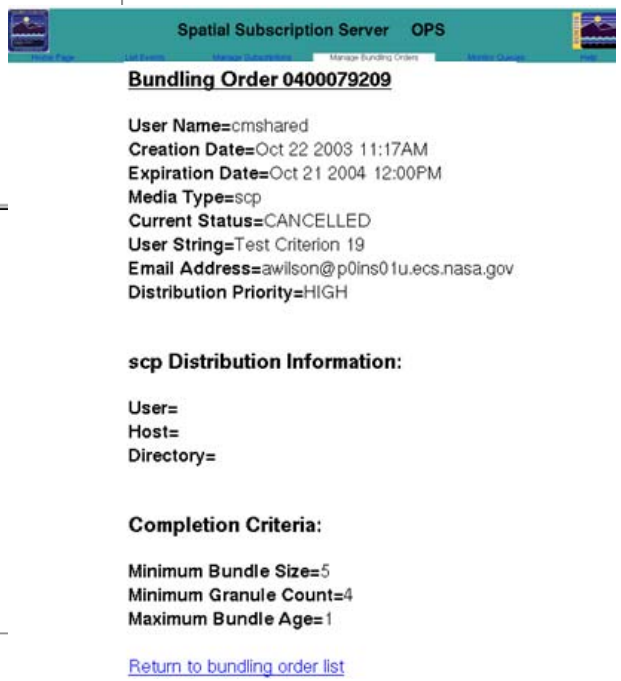


Spatial Subscription Server GUI List Subscriptions for Theme Page

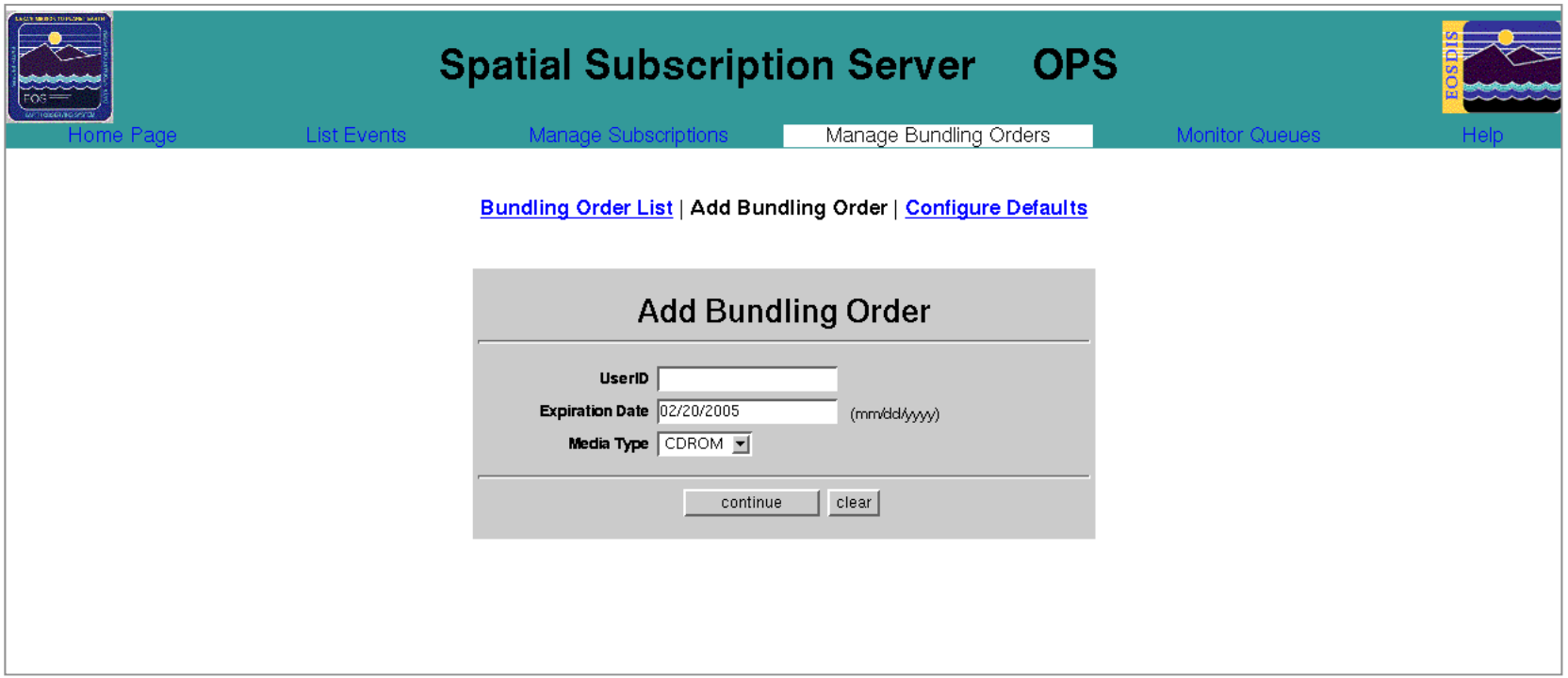


Spatial Subscription Server GUI Manage Bundling Orders Page





Spatial Subscription Server GUI
Add Bundling Order Page



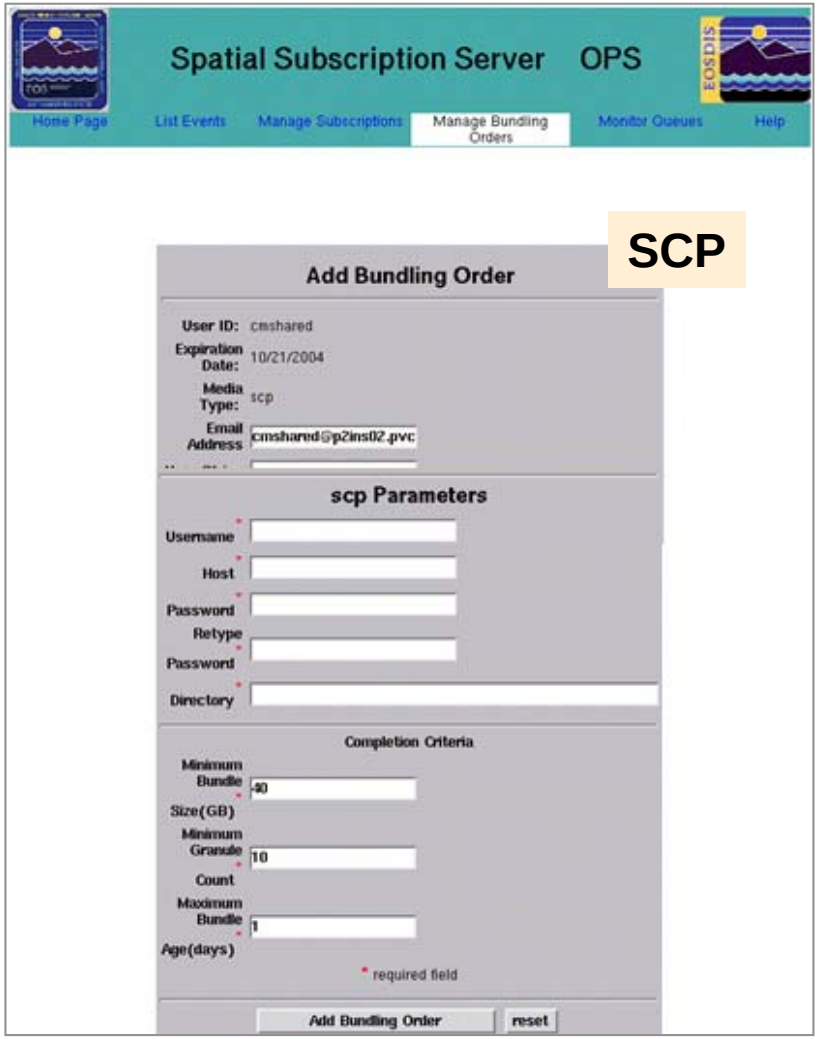
Spatial Subscription Server GUI
Add Bundling Order: Data Pages

Hard Media

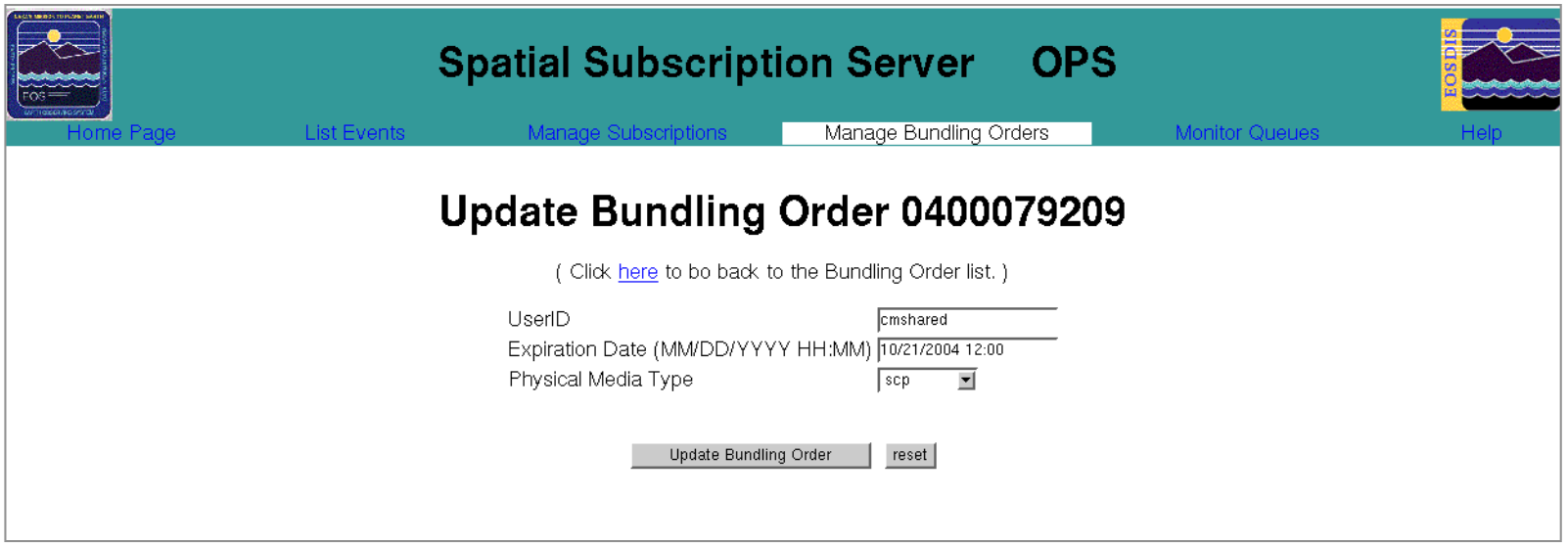
FTP Push

FTP Pull

Spatial Subscription Server GUI
Add Bundling Order: Data Pages

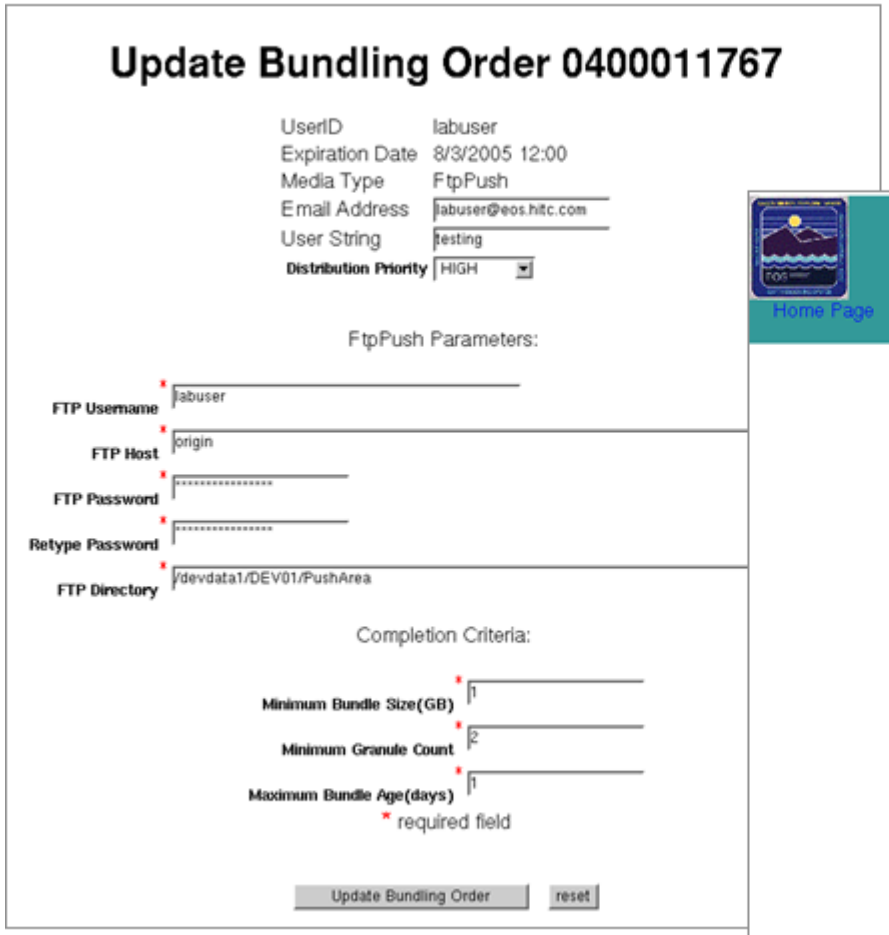


Spatial Subscription Server GUI Update Bundling Order Page

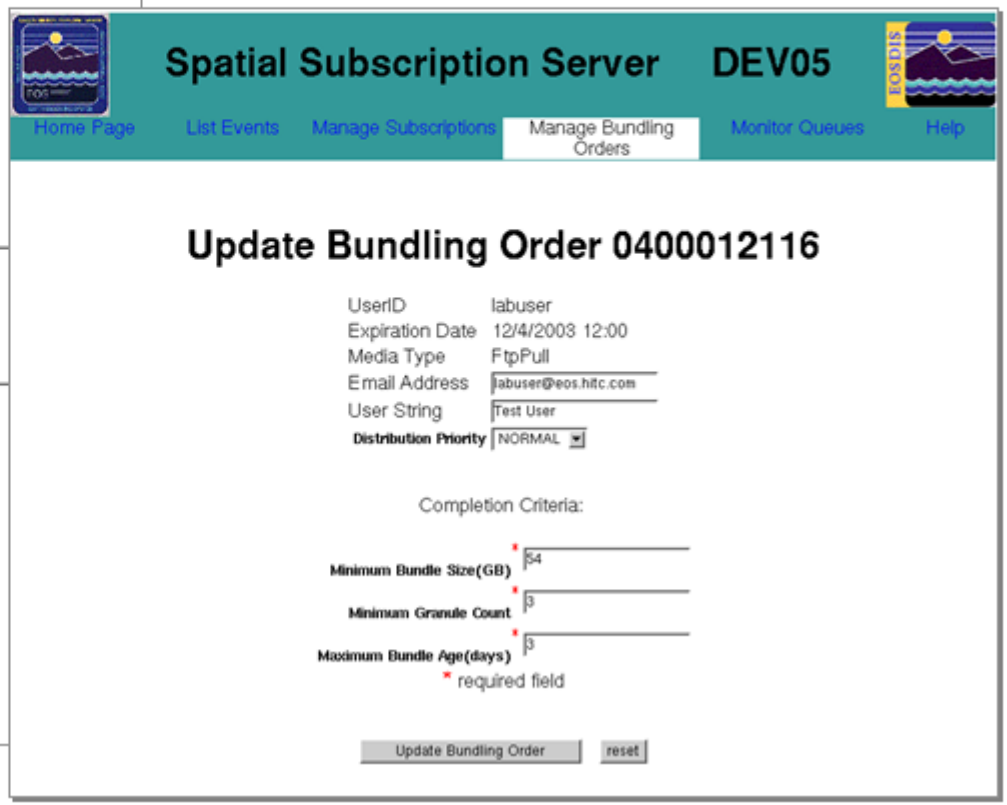


Spatial Subscription Server GUI Update Bundling Order: Data Pages

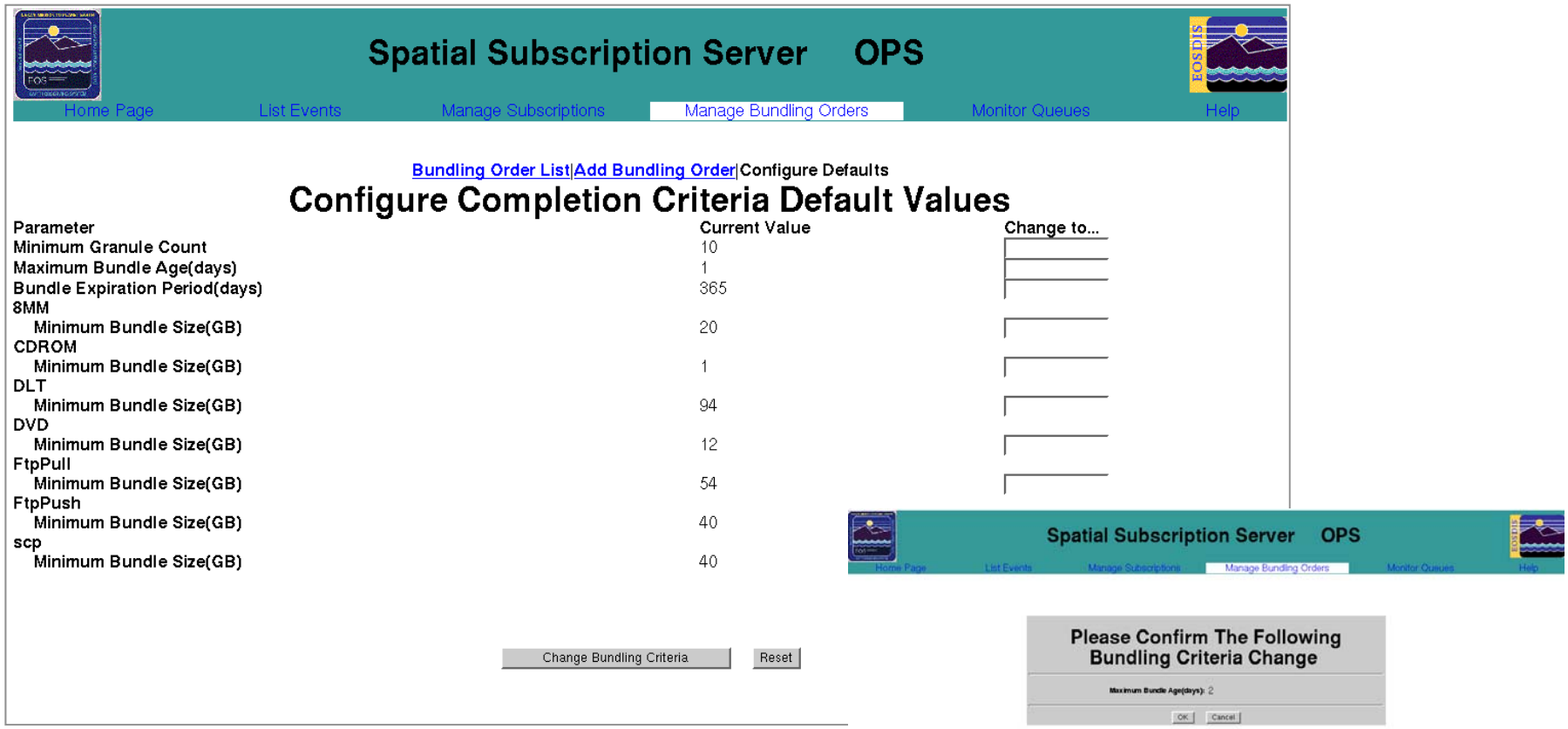
FTP Push



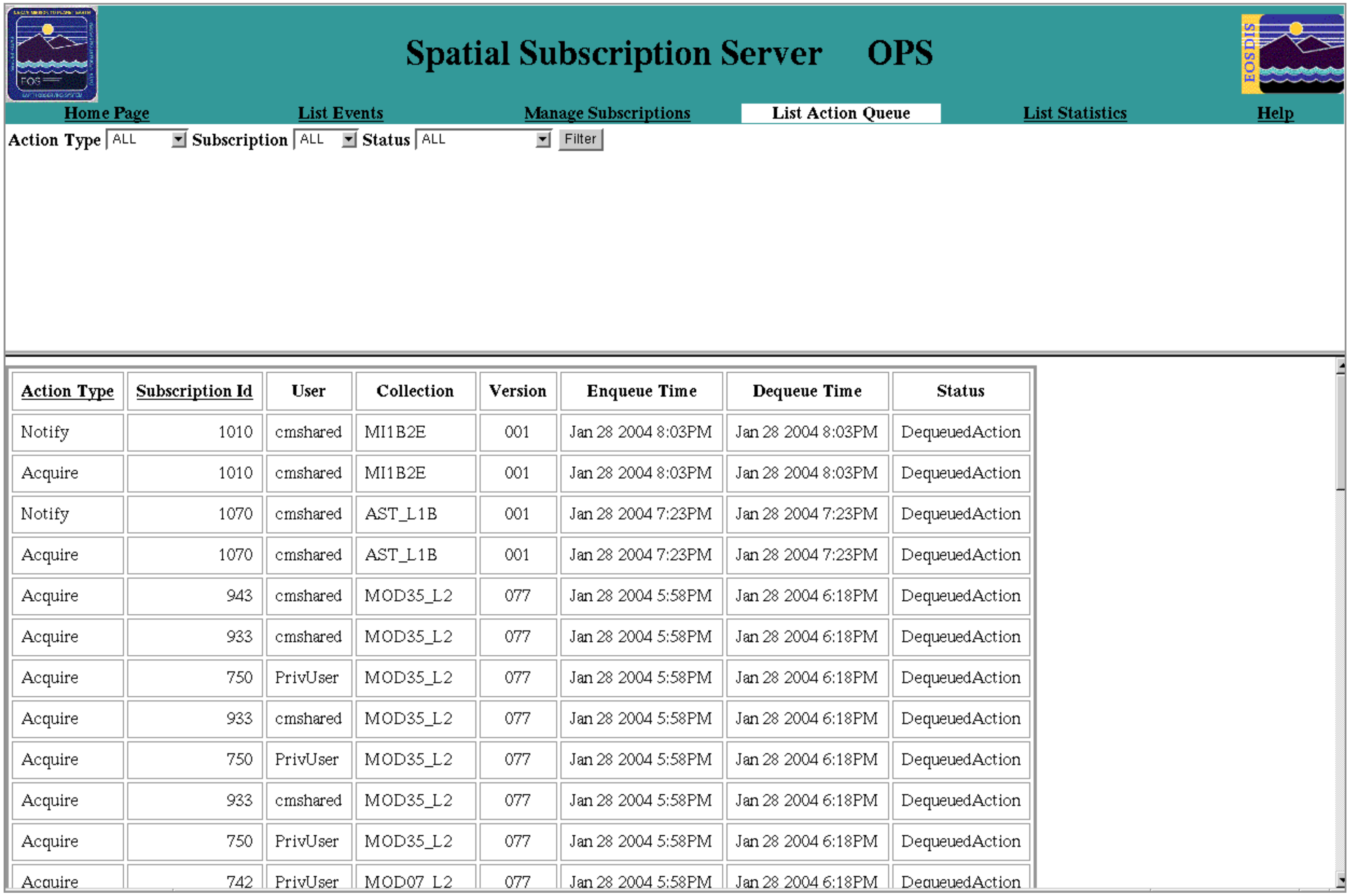
FTP Pull



SSS GUI: Configure Bundling Order Completion Criteria Defaults

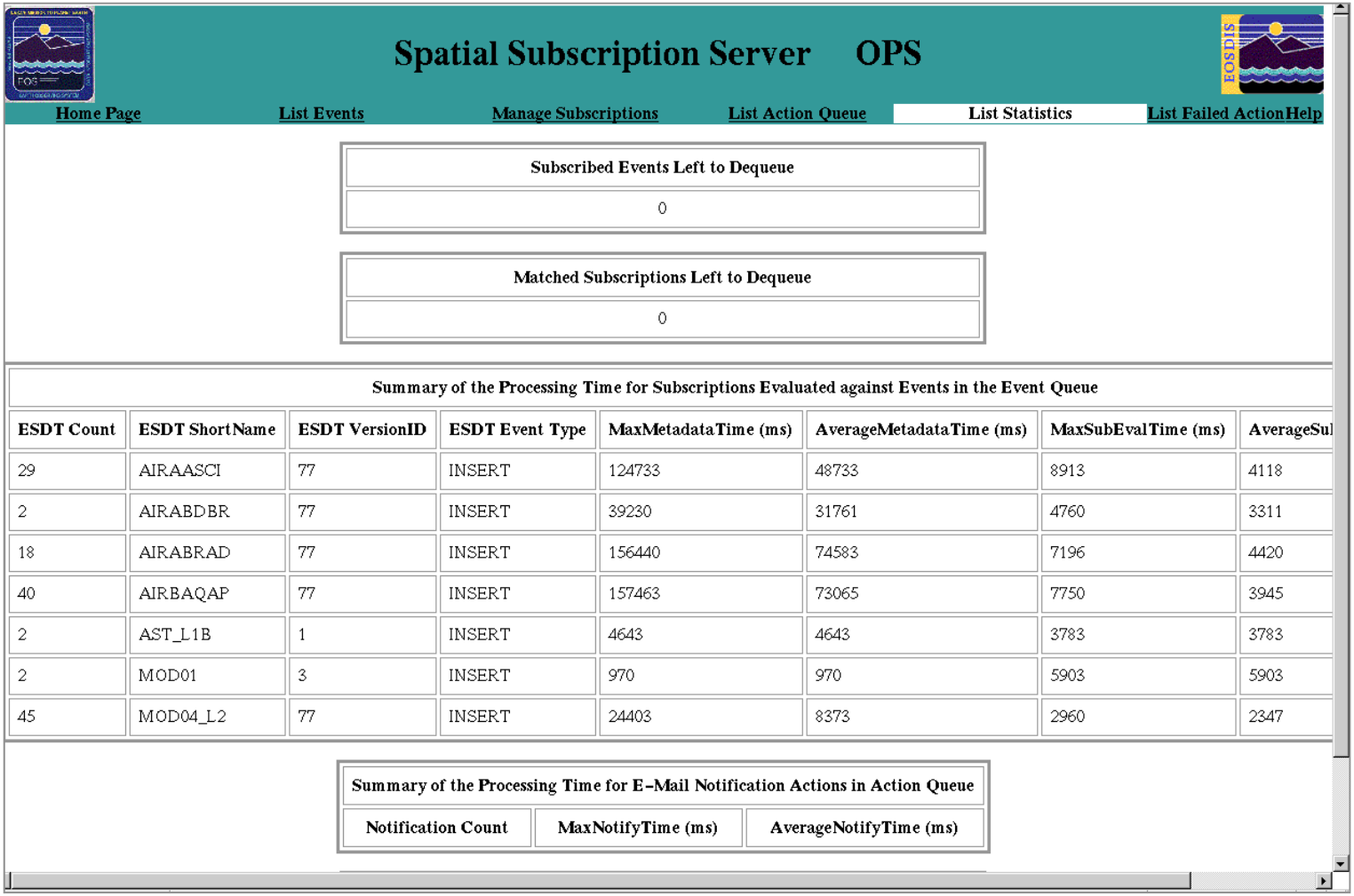


Spatial Subscription Server GUI List Action Queue Page



Action Type	Subscription Id	User	Collection	Version	Enqueue Time	Dequeue Time	Status
Notify	1010	cmshared	MI1B2E	001	Jan 28 2004 8:03PM	Jan 28 2004 8:03PM	DequeuedAction
Acquire	1010	cmshared	MI1B2E	001	Jan 28 2004 8:03PM	Jan 28 2004 8:03PM	DequeuedAction
Notify	1070	cmshared	AST_L1B	001	Jan 28 2004 7:23PM	Jan 28 2004 7:23PM	DequeuedAction
Acquire	1070	cmshared	AST_L1B	001	Jan 28 2004 7:23PM	Jan 28 2004 7:23PM	DequeuedAction
Acquire	943	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	742	PrivUser	MOD07_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction

Spatial Subscription Server GUI List Statistics Page



Spatial Subscription Server OPS

Home Page | List Events | Manage Subscriptions | List Action Queue | List Statistics | List Failed Action | Help

Subscribed Events Left to Dequeue
0

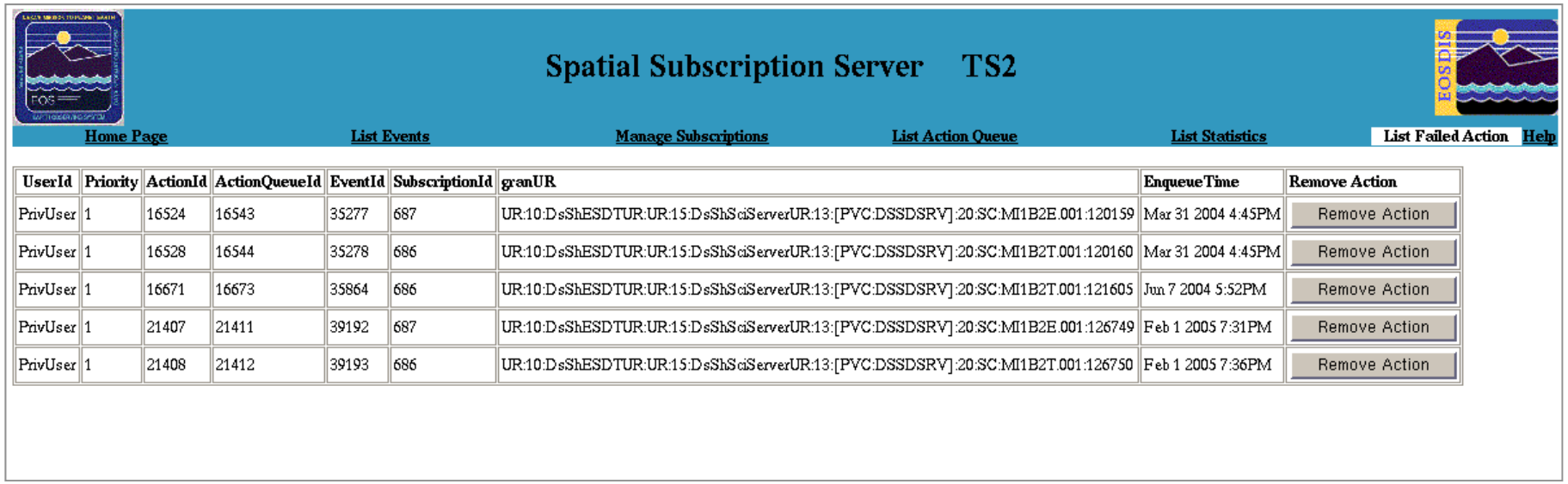
Matched Subscriptions Left to Dequeue
0

Summary of the Processing Time for Subscriptions Evaluated against Events in the Event Queue

ESDT Count	ESDT ShortName	ESDT VersionID	ESDT Event Type	MaxMetadataTime (ms)	AverageMetadataTime (ms)	MaxSubEvalTime (ms)	AverageSul
29	AIRAASCI	77	INSERT	124733	48733	8913	4118
2	AIRABDBR	77	INSERT	39230	31761	4760	3311
18	AIRABRAD	77	INSERT	156440	74583	7196	4420
40	AIRBAQAP	77	INSERT	157463	73065	7750	3945
2	AST_L1B	1	INSERT	4643	4643	3783	3783
2	MOD01	3	INSERT	970	970	5903	5903
45	MOD04_L2	77	INSERT	24403	8373	2960	2347

Summary of the Processing Time for E-Mail Notification Actions in Action Queue		
Notification Count	MaxNotifyTime (ms)	AverageNotifyTime (ms)

Spatial Subscription Server GUI List Failed Action Page



Spatial Subscription Server TS2

Home Page | List Events | Manage Subscriptions | List Action Queue | List Statistics | List Failed Action | Help

UserId	Priority	ActionId	ActionQueueId	EventId	SubscriptionId	granUR	EnqueueTime	Remove Action
PrivUser	1	16524	16543	35277	687	UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[PVC:DSSDSRV]:20:SC:MI1B2E.001:120159	Mar 31 2004 4:45PM	Remove Action
PrivUser	1	16528	16544	35278	686	UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[PVC:DSSDSRV]:20:SC:MI1B2T.001:120160	Mar 31 2004 4:45PM	Remove Action
PrivUser	1	16671	16673	35864	686	UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[PVC:DSSDSRV]:20:SC:MI1B2T.001:121605	Jun 7 2004 5:52PM	Remove Action
PrivUser	1	21407	21411	39192	687	UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[PVC:DSSDSRV]:20:SC:MI1B2E.001:126749	Feb 1 2005 7:31PM	Remove Action
PrivUser	1	21408	21412	39193	686	UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[PVC:DSSDSRV]:20:SC:MI1B2T.001:126750	Feb 1 2005 7:36PM	Remove Action