14. Archive Management/Data Pool Maintenance

14.1 Archive Management Overview

Archive processing is at the core of the ECS system. The Online Archive consists of the following components:

- Data Pool/Data Archive: a persistent data store for all science and ancillary data,
- Browse Archive: a persistent data store for all browse data files,
- Small File Archive: a persistent data store for all ESDT definition files, and ESDT specific XML schema files, and a backup copy of all Science Granule XML Metadata files.

The access to the Data Pool/Data Archive is controlled, but all publicly available data holdings are accessible and directly downloadable by the users through the public Data Pool. The product orders for the non-public data holdings are first retrieved from the hidden area of the Data Pool/Archive and placed into the staging area and distributed to the users.

The disk-based archive is augmented with a backup tape archive system primarily for disaster recovery purpose. The tape archive holds a copy of the data found in the disk archive. Since all data resides on the disk-base archive, there is a smaller probability of having to recall data from tape, so the number of tape devices has been reduced from the previous tape near-line archive configuration.

14.2 Archive Hardware

The Archive hardware can be broken down into four groups:

1. StorNext Storage Manager (SNSM) Metadata Controller Servers.
2. SAN Fabric.
3. Disk Based Archive.
4. Managed Storage.

SNSM Metadata Controller Servers (MDC) are two identical HP ProLiant ML570 servers configured in a highly available (HA) configuration. The MDCs are using the Linux Red Hat Linux 5 Update 2 operating system. These servers host the software that manages the storage connected to the fabric in the ECS system architecture. The MDC Failover allows a secondary MDC host to take over StorNext operations in the event a primary MDC host fails. Failover is supported for all StorNext management operations, including client I/O requests (File System) and data mover operations (Storage Manager). This significantly increases the uptime of the ECS archive at each DAAC. The metadata server is the traffic cop that tracks the shared file

system activity and maintains the synchronization of updates. The MDCs are connected to the fabric and the private network to automatically move data between disk and tape archives.

The **SAN Fabric** consists of two Brocade 4100 switches connecting to all hosts and storage arrays with a view into the Data Pool. The switches allow attached hosts access to the Data Pool through the fabric. A private gigabit ethernet network carries the metadata communications between the hosts and the metadata server, while the fabric carries the data holdings.

The **Disk Based Archive** is EMC CLARiiON CX series disk arrays. The Data Pool, Browse, Smallfiles Archives along with the StorNext Archive cache are all located on this hardware. The Data Pool is spread across all controllers primarily using 1 TB drives bound as RAID 6. The Browse and Smallfiles Archives are on fibre channel in most locations to take advantage of the higher performance required for small writes. These disks are bound as RAID 5 which also has less overhead then RAID 6. The cache is a group of spindles have been set aside for StorNext to stage and de-stage data from media. The disks arrays are connected to the SAN Fabric for data transfers. The private network is used to manage the arrays using Navisphere.

The **SNMS Managed Storage** is connected to a separate tape SAN. The SNSM metadata servers and the tape drives are connected to the Tape Fabric. This SAN is used to move data from the StorNext Archive cache to LTO tape. A Scalar i6000 or i500 library have been installed at each DAAC with 6 to 8 LTO 4 tape drives connected to a storage networking blade. Each LTO 4 tape can store 800GB of data native (up to 1600 GB compressed). Slots are available for up to 128 tapes in the NSIDC and EDF libraries, 300 tapes in the PVC library, and 700 tapes in the ASDC and LP DAAC libraries. Each LTO tape cartridge is identified by a colored bar code label that shows the media number. An archive catalog or database tracks the location of each cartridge within the library, based on information provided by the laser bar code reader. Offline data storage racks are provided to store LTO tapes outside of the library. See Figure 14.2-1.

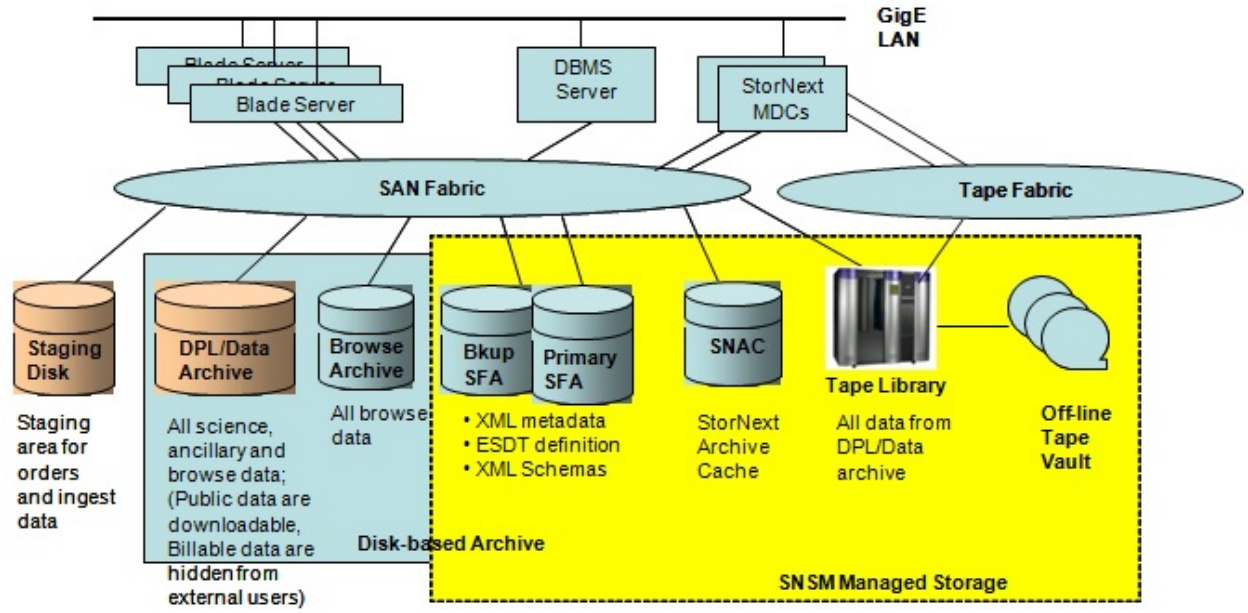

Figure 14.2-1. Online Archive Architecture

14.3 Archive Software

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 to control and monitor archive operations. The archive software is the Quantum's StorNext Storage Manager (SNSM) software.

The StorNext Product has two components:

1. StorNext File System (SNFS) – is a shared file system called CVFS.
2. StorNext Storage Manager (SNSM) – this manages the volumes (media), drives and jukeboxes.

Primary dependencies are on the 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.

14.4 Starting and Stopping StorNext

The ECS System contains both managed (Hierarchical Storage Manager) and unmanaged StorNext File Systems. In order for the ECS System to function properly you need to start/stop both. They can be started/stopped from the Linux command line or from the GUI provided by the vendor. Table 14.4-1 provides an Activity Checklist for Starting and Stopping StorNext.

Table 14.4-1. Starting and Stopping StorNext

Order	Role	Task	Section
1	System Administrator or Archive Manager	Start the StorNext Manager Server (from the command line prompt)	(P) 14.4.1.1
2	System Administrator or Archive Manager	Start the StorNext manager Server (from the GUI)	(P) 14.4.1.2
3	System Administrator or Archive Manager	Stop the StorNext Clients	(P) 14.4.2.1
4	System Administrator or Archive Manager	Disabling the Tape Archive System	(P) 14.4.2.2
5	System Administrator or Archive Manager	Rebooting the StorNext Metadata Servers	(P) 14.4.3.1
6	System Administrator or Archive Manager	Creating a Listing of StorNext Labels	(P) 14.4.4.1

14.4.1 Starting the StorNext Application

To start the StorNext System, both the server and its clients must be started.

14.4.1.1 Start the StorNext Manager Server (from the command line prompt)

1 Logon to the active metadata server (x4smvaa) as root or superuser. Using x4smvaa, log into the active (x4sml01 - primary or x4sml02 - failover/secondary).

 # service cvfs start

2 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).

3 Logon to each of the clients.

 # service cvfs start

4 Verify that the StorNext Manager Server is active with the command:

 # ps –ef | grep cvfs

The **StorNext Home** GUI is Web based, and can be accessed by any current Web enabled machines with the proper Java libraries.

Note: Persons with Administrators Accounts can only have full control of the archive.

14.4.1.2 Start the StorNext Manager Server (from the GUI)

1 Open a Web browser. Mozilla is the EED supported standard, however, other browsers such as Firefox, Netscape 7+, and others may be used.

2 **Enter the name of the active StorNext metadata server.**

Example: p4smvaa.pvc.ecs.nasa.gov:81

- **The** StorNext **login window will appear.**

3 Enter the **username** (admin) and **password** in the spaces provided. (Operators can create multiple accounts.)

- **The** StorNext **GUI Home page will be displayed (Figure 14.4-1).**

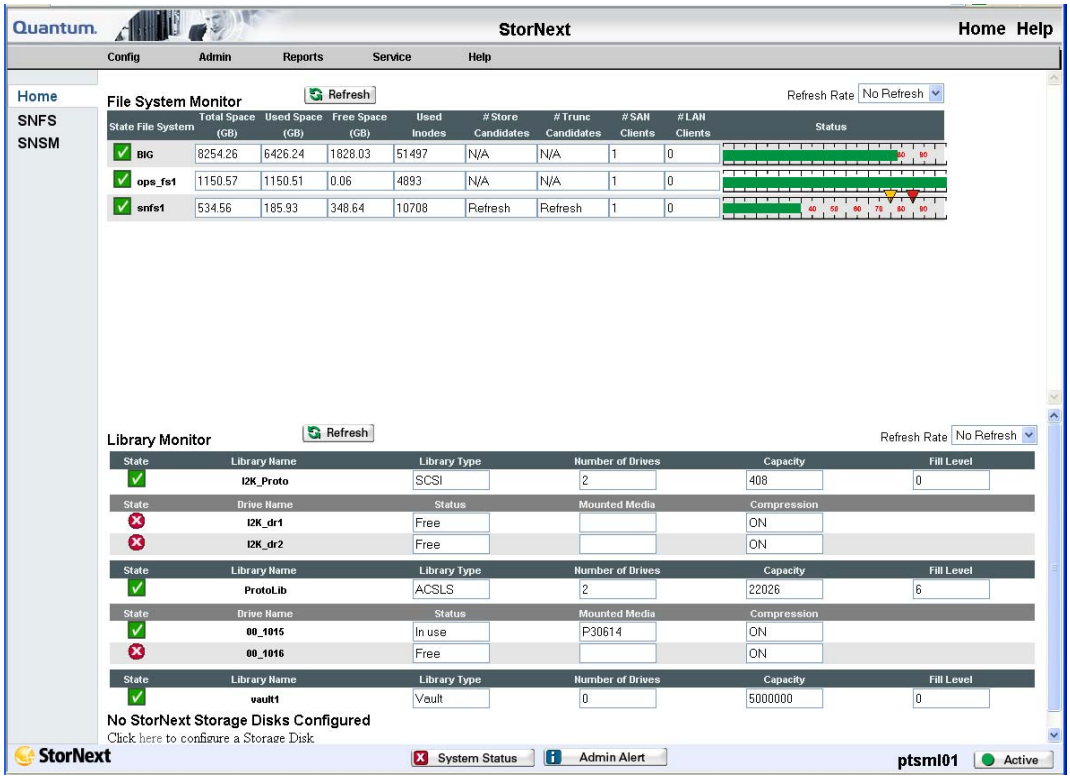

Figure 14.4-1. StorNext GUI Home Page

4 **Select** Admin **from the Home Page.**

- **The** Admin **pull-down menu will be displayed (Figure 14.4-2).**

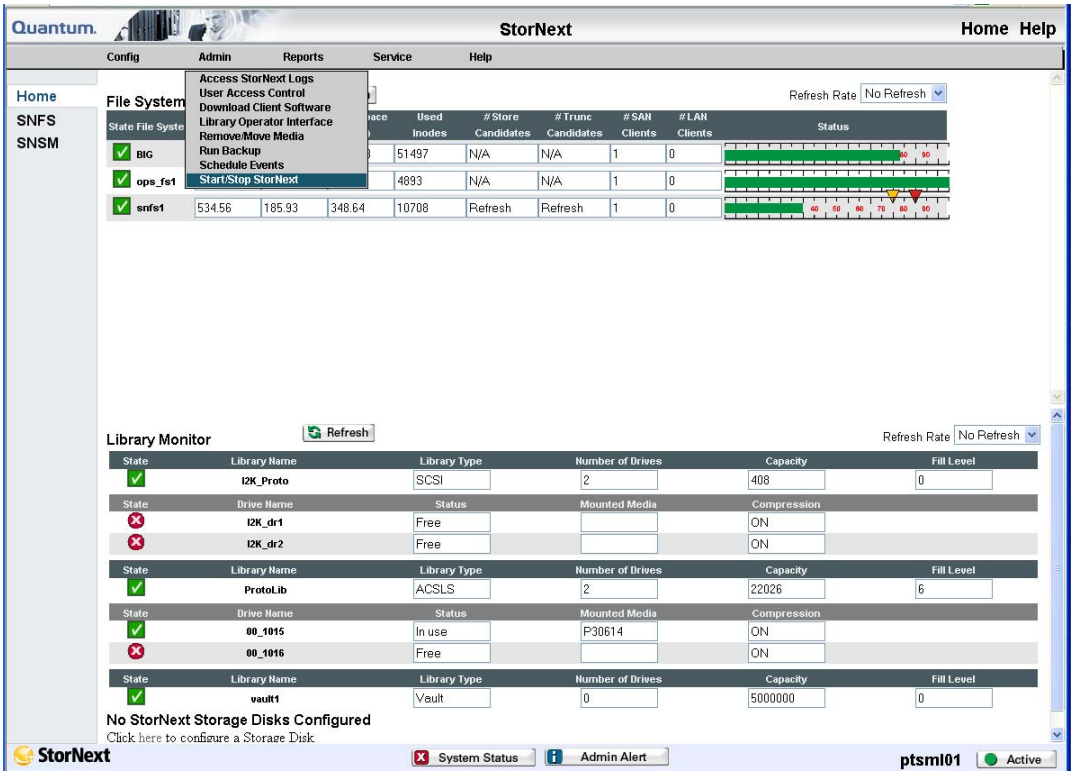

Figure 14.4-2. Admin Pull-Down Menu

5 Select **Start/Stop StorNext** from the **Admin** pull-down menu.

- The Start/Stop **StorNext** page will be displayed (Figure 14.4-3).

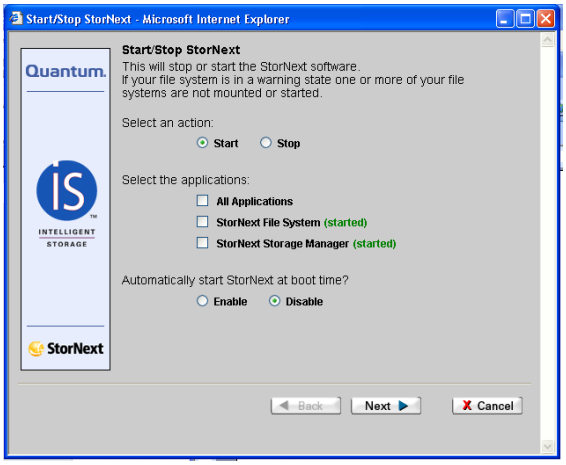

Figure 14.4-3. Start/Stop StorNext Page

6 Select the **Start** option under **Select an action.**

7 Select the **Disable** option to disable the feature that automatically starts SNFS upon reboot.

NOTE: NEVER Select Automatically Start StorNext Manager at boot time.

8 Select the **Next** button to save the changes and proceed.

9 Click **Close** button when the status window displays **Success**.

14.4.2 Stopping the StorNext Application

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

14.4.2.1 Stop the StorNext Clients

1 Log in as root into each **StorNext** client.

2 To stop the **StorNext** clients, type:

 # service cvfs stop

3 Check to ensure client has been stopped:

 # ps –ef | grep cvfs

NOTE: MAKE SURE THAT ALL CLIENTS ARE STOPPED**.**

4 To Stop the StorNext Metadata server, log in as root (system administrator) into the active **StorNext Metadata** server (x4smvaa)**.**

5 To stop **StorNext** server, type:

 # service cvfs stop

6 Check to ensure server has been stopped

 # ps –ef | grep cvfs

14.4.2.2 Disabling the Tape Archive System

1 From the **StorNext Home Page,** select **Stop/Start StorNext** from **Admin** pull down menu.

- **The** Start/Stop StorNext **page will be displayed (Figure 14.4-4).**

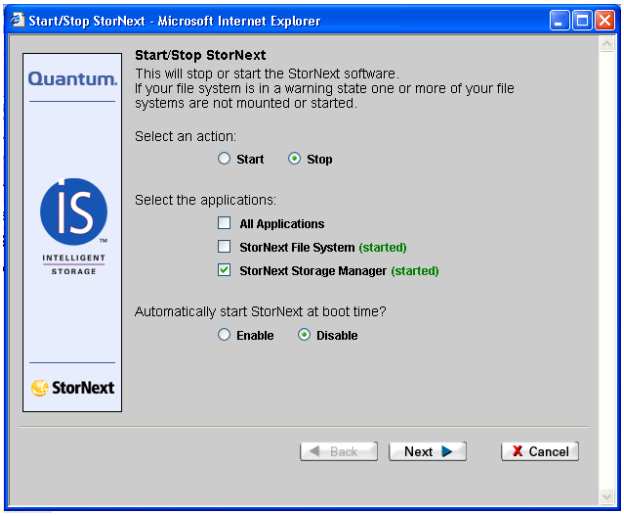

Figure 14.4-4. Stop StorNext Page

2 Select the **Stop** option from the **Select an Action** section.

3 Select **StorNext Storage Manger** checkbox from the **Select the components** section.

4 **Select the** Disable **option.**

NOTE**: NEVER select** Automatically start StorNext at boot time**? EED has provided a script in the init.d directory to perform this action.**

5 Select the **Next** button.

6 Click **Finish** when the screen displays **Success**.

14.4.3 Rebooting the StorNext Metadata Servers

The StorNext Metadata Servers (x4sml01, x4sml02) may need to be rebooted during certain anomalous conditions (e.g., system "hang," interruption of communication between StorNext and ACSLS, a required daemon is down).

In order to reboot StorNext Metadata Servers the operator must have root privileges. The following procedure demonstrates the steps to reboot StorNext Metadata Servers:

14.4.3.1 Rebooting the StorNext Metadata Servers

1 To reboot the **StorNext System**, you must stop both the Server and its Clients refer to Section 14.4.2 – **Stopping the StorNext Application**.

2 Perform Required Maintenance on StorNext Metadata Server.

3 Re-Start the StorNext Server and Clients (refer to Section 14.4.1 – Starting the StorNext Application).

14.4.4 Avoiding Loss of LUN Labels When Installing Red Hat

When installing Red Hat Enterprise Linux (RHEL) 5, the "Anaconda" installation program assumes that it owns any local or Storage Area Network (SAN) LUN (Logical Unit Number) that it can find and will **re-label** each LUN using Linux headers. If an installation is attempted while connected to the SAN, all of the StorNext LUN headers will be rewritten with Linux headers. StorNext or any other SAN filesystem that the fabric connection allows will cease functioning. Also, it is possible for Anaconda to target the incorrect disk and overwrite data on a SAN LUN. This will occur during a manual install via CD/DVD or an automated (kickstart) install. There is an undocumented option, **-ignore disks**, but it does not work when combined with any other kickstart options.

Warning: It is crucial that before installing Red Hat Linux (via CD, DVD, or kickstart) that any non-OS disks are removed from visibility of the server. For locally installed disks, disconnect or remove the drives. If the OS disk is on the SAN (diskless system), then any non-OS disks visible to the target host must be removed by one of the following methods:

- disconnecting the fiber cable,
- disabling the port on the fabric,
- using zoning,
- LUN masking,
- Navisphere or other storage management method.

When scanning devices on the target systems HBA, the only device that should be actively visible is the target OS disk. If installing Red Hat Linux on a local hard drive while attached to a FC SAN, simply disconnect the FC HBA connections to the SAN to easily protect the SAN. Additionally, a current list of StorNext Labels should be created and updated as required.

Do not grow the root device using logical volumes with in Linux. At the hardware level, these will be seen as two devices. During kickstart, only one will be visible. If for any reason the root disk must grow, and the root device is on the SAN, then grow the LUN at the hardware level. If the root device is local, then migrate the data to a larger drive.

14.4.4.1 Create a Listing of StorNext Labels

NOTE: Prior to installing Red Hat Enterprise Linux (RHEL) 5, create a file that contains the StorNext Labels (see the following procedure). Additionally, it is crucial that the Linux system's SAN fiber channel (FC) cables be physically disconnected before attempting an install.

1 Log on as root to a host (Linux or other) that has persistent binding of the SAN LUNs.

2 Make a listing of the StorNext labels currently configured by using this command example:
 # /usr/cvfs/bin/cvlabel –c > /labels

- **This will create a file called** labels **that contains the label, the device, size, VTOC label and comments.**

3 Edit the **labels** file and **REMOVE ENTRIES THAT ARE NOT STORNEXT**!

- **If non-StorNext entries are still in the file, they will be given StorNext headers and will no longer be able to do their normal function.**

  For example, the following line is the boot (local) disk and should be deleted:

  /dev/sda [MegaRAIDLD 0 RAID5 69G1.92] MBR Sectors: 0. SectorSize: 512

4 Copy the file to /usr/cvfs/config by using the following command:
 # cp /root/labels /usr/cvfs/config

5 Logoff from StorNext.

If the StorNext headers are lost, perform the following procedure:

1 As root, login to the host where the labels have been copied (in step 1 above).

2 Change directory to the cvfs configuration directory by entering the following:
 # cd /usr/cvfs/config

3 Copy the labels file to cvlabels by entering the following:
 # cp labels cvlabels

4 Run the cvlabel command by entering the following:
 # /usr/cvfs/bin/cvlabel

5 Check that the headers are correct using the following command:
 # /usr/cvfs/bin/cvlabel –l

6 Remove the cvlabels file using the command:
 # rm /usr/cvfs/config/cvlabels

14.5 Loading and Removing Archive Media from the Scalar library

The Scalar i6000 library is equipped with an import/export (I/E) station allowing cartridges to be inserted or removed from the library without interrupting operations. The I/E station is on the front of the control module. The I/E station has a capacity of 24 LTO cartridges located in four removable magazines.

The Scalar i500 library is equipped with an import/export (I/E) station. The I/E station is located on the front of the control module. In a 5U station, the I/E has a capacity of six cartridges within a removable magazine. The 9U has a capacity of 12 cartridges within two removable magazines.

Table 14.5-1 provides an Activity Checklist for Loading, and Removing Archive Media.

Table 14.5-1. Loading and Removing Archive Media -Activity Checklist

Order	Role	Task	Section	Complete?
1	Archive Manager	Loading Archive Media	(P) 14.5.1.1	
2	Archive Manager	Removing Archive Media	(P) 14.5.1.2	
3	Archive Manager	Recovering Files From 9940 Media Native StorNext Tapes	(P) 14.5.1.3	
4	Archive Manager	Recovering Files from LTO Tapes Media, Native StorNext Tapes	(P) 14.5.1.4	

14.5.1 Loading Archive Media

Loading of media is appropriate when there are relatively small numbers of media to be loaded. With automated loading, StorNext assigns each cartridge a unique volume number, then enters the volumes in its database and marks the volumes Online in the database.

14.5.1.1 Loading Archive Media

1 Log in as **root** at the active **StorNext Metadata** server (***x*4smvaa**). The ***x*** in the workstation name will be a letter designating your site: **m** = SMC, **l**=LaRC, **e**=LP DAAC, **n**=NSIDC (e.g., **n4smvaa** indicates a server at NSIDC).

2 Update the media file to add the appropriate volume information.

 # vi /usr/adic/MSM/internal/config/media_file_"library"

Format :

```
#   [s]       any character in the set s, where s is a sequence of
#               characters and/or a range of characters, for example, [c-c].
#
#   r*          zero or more successive occurrences of the regular expression
#               r.  The longest leftmost match is chosen.
#   Examples:
#
#   ESY...       All six character labels that begin with ESY.
#
#   [^0-9]..A*   All labels that do not begin with a digit, followed
#                by any 2 characters, followed by zero or more
#                occurrences of the character A.
#
#   "DG" EF"     DG followed by double quote followed by a space
#                followed by EF
#
#   Following is an example of what an entry in this file may look like:
#AML_1  ESY2..
#
S2_98 SE925[0-2]
```

3 Place the Media in the Library. Select Config-Add Media from the StorNext Home page. The Add Media – introduction screen will appear (Figure 14.5-1).

4 Select the appropriate library media, then select the Next button.

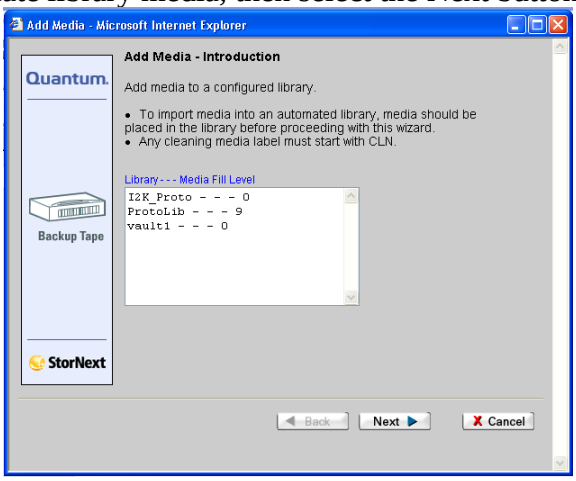

Figure 14.5-1. Add Media Page

5 Select the **Associated Library** (Figure 14.5-2), and press the **Next** button.

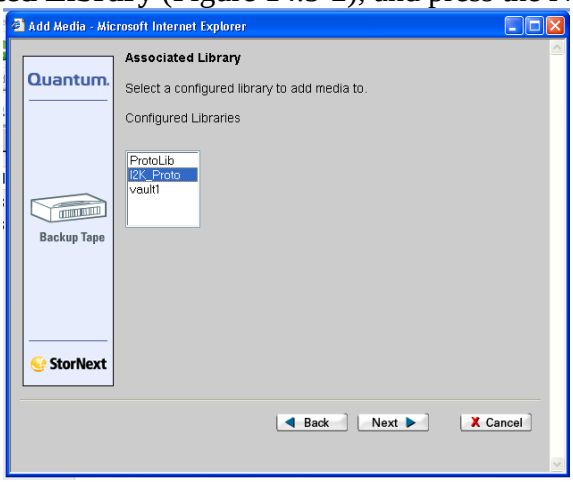

Figure 14.5-2. Associated Library Page

6 Select the **Bulk Load** button from the **Associated Library** page (Figure 14.5-3)**,** and press the **Next** button.

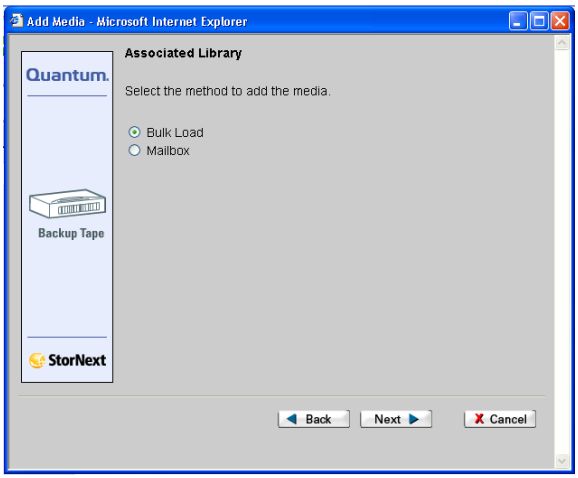

Figure 14.5-3. Associated Library Bulk Load Page

- **The** Complete Add Media Task **screen displays.**

7 Select **Next** from the **Complete Add Media Task** screen (Figure 14.5-4).

- **The system will then automatically add your media.**

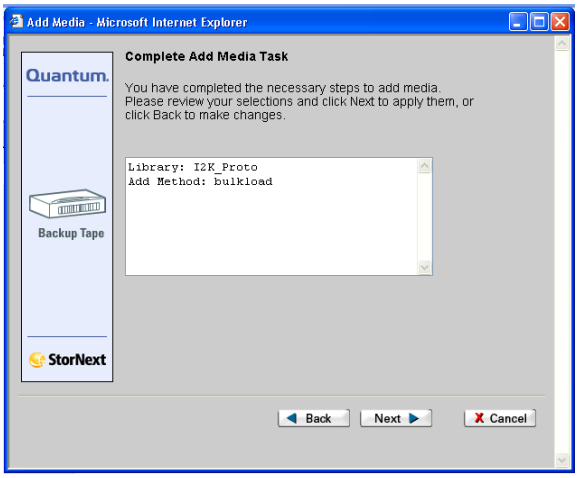

Figure 14.5-4. Complete Add Media Task Page

14.5.1.2 Removing Archive Media

1 From the **StorNext Home Page**, choose **Remove/Move Media** from the **Admin** pull down menu. (Figure 14.5-5)

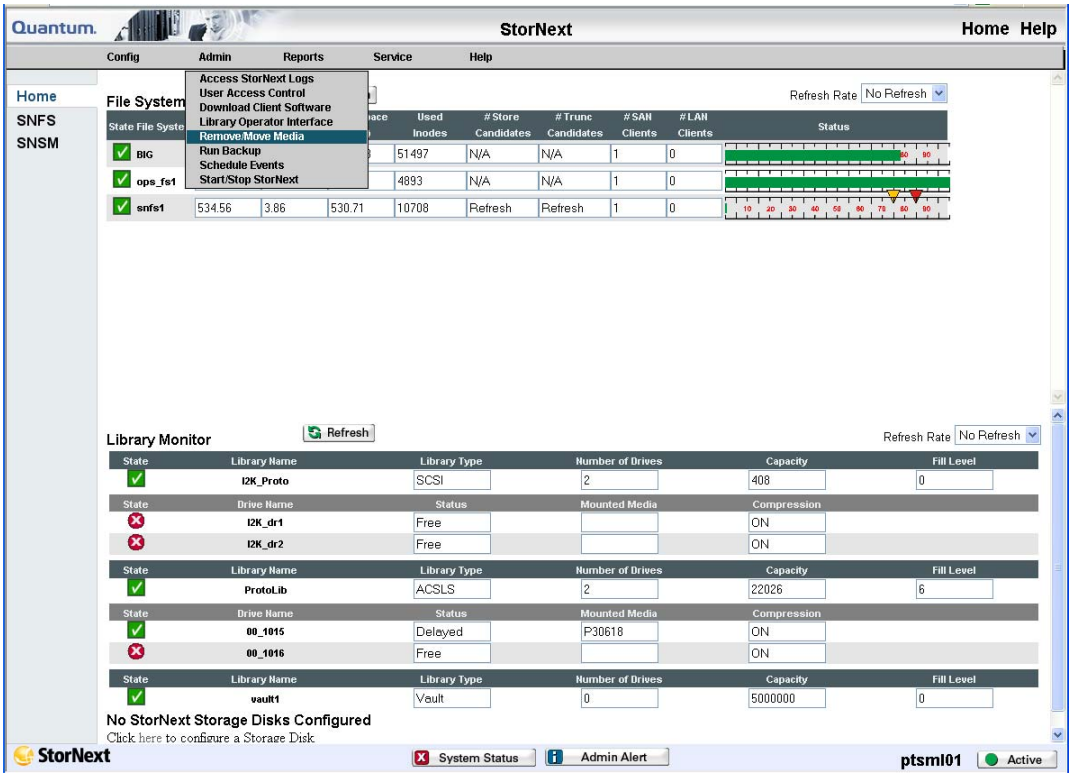

Figure 14.5-5. Remove/Move Media Pull Down Menu

2 **The** Remove Media or Move Media **screen will appear (Figure 14.5-6). Select the** Remove Media **button.**

3 **Select the appropriate** Library **and** Media Type**, then select the** Next **button.**

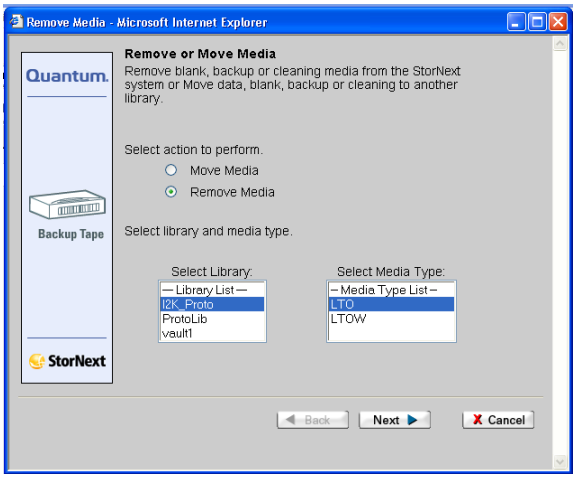

Figure 14.5-6. Remove or Move Media Page

4 Select the **Media** to be removed (Figure 14.5-7), then select the **Next** button.

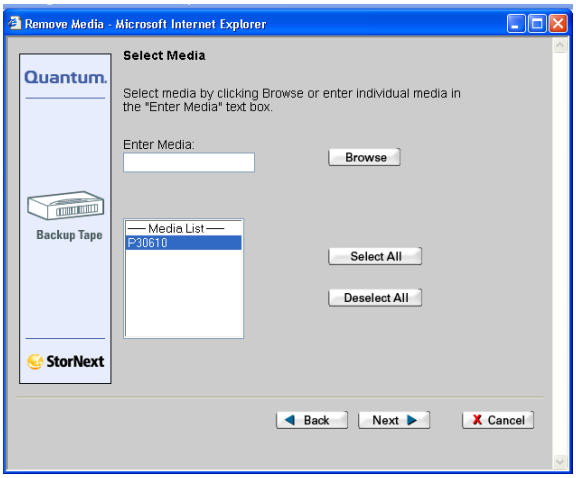

Figure 14.5-7. Select Media Screen

5 The **Completed Remove/Media Task** will appear (Figure 14.5-8).

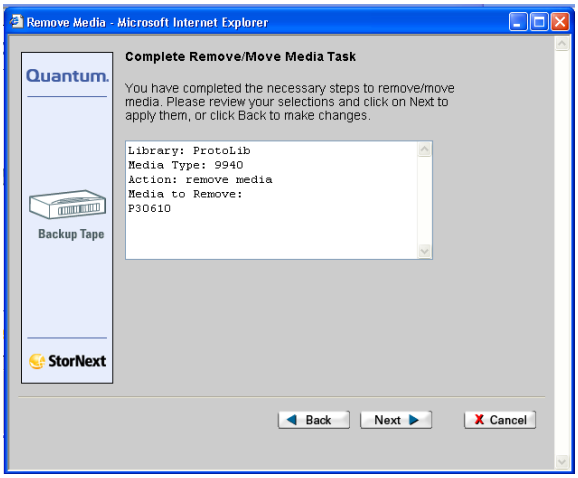

Figure 14.5-8. Complete/Remove Media Task Page

6 When the status screen indicates that the media has been removed, select **Finish.** The **Library Operator Interface (LOI)** page will appear.

7 Open the recessed latch on the **Cartridge Access Port (CAP)** door and remove the tape(s).

8 Update the media file to add the appropriate volume information. Type in:

 # vi /usr/adic/MSM/internal/config/media_file_"library"

Format :

```
# [s]       any character in the set s, where s is a sequence of
#           characters and/or a range of characters, for example, [c-c].
#   r*        zero or more successive occurrences of the regular expression
#           r.  The longest leftmost match is chosen.
# Examples:
#   ESY...     All six character labels that begin with ESY.
#  [^0-9]..A*  All labels that do not begin with a digit, followed
#              by any 2 characters, followed by zero or more
#              occurrences of the character A.
#   "DG" EF"   DG followed by double quote followed by a space
#              followed by EF
#   Following is an example of what an entry in this file may look like:
#AML_1   ESY2.
#S2_98 SE925[0-2]
```

14.5.1.3 Recovering Files From LTO Media, Native StorNext Tapes

1 Log onto the ***x*4smvaa** machine as root.

2 If the media to be removed is still available to StorNext, make the tape unavailable by entering the following command:

 # fschmedstate <mediaID>–s unavail

3 Follow the steps in Section 14.4.2.1 to shutdown the StorNext servers and clients

4 Connect to the Scalar library, using the approved web browser.

http://192.168.xxx.xxx

5 Take the partition offline:

Click **View-> Views,** the **Manage Views** dialog box appears.

Click the button to the right of the partition, toggles online to offline.

6 Eject the target media from the tape library to the I/E Station:

From the Scalar GUI **View** menu**,** click the name of the partition:

Click **Operations -> Export**.

7 The **Export Media** dialog box appears with the list of cartridges in the partition. Select the corresponding check box in the leftmost column for each cartridge that is to be exported (up to the number of I/E slots).

Click **OK**.

8 Retrieve the tape from the I/E Station.

7 Bring the partition online:

Click **View-> Views,** the **Manage Views** dialog box appears.

Click the button to the right of the partition, toggles offline to online.

Disconnect from the Scalar GUI.

10 Follow the steps in 14.4.1.1 to start the StorNext servers and clients.

The site maintenance coordinator will open a Quantum Service Request, and return the tape to quantum for analysis.

14.6 Backing Up the StorNext Application

StorNext provides the capability to perform both full and partial backups of metadata and database information. Full backups create backups of the full database dumps, snapshots of the file system metadata, and software configuration information. Partial backups create backups of the database journal files, metadata journal files, and software configuration information. Backups in SNSM version 2.8 are now written to a managed file system and stored off to media. When the data is stored to tape, the files are truncated to save room on disk. This is different than

earlier releases where backup data was saved to a local disk before being written to tape. Backups are run in several different ways:

- **Automatically**
  - Nightly as configured through the Scheduler
- **Manually**:
  - From the command line by running snbackup
  - From the GUI

The ***snbackup*** command-line utility is used to create the backups. The usage of snbackup can be found in the man page, and the utility also incorporates a -h option which can be used to display usage. This utility when first run will identify available system resources (a managed file system) to use for temporary storage of backup files. The largest capacity managed file system will be used for this temporary storage area. The selected file system will be stored in the ***/usr/adic/TSM/config/fs_sysparm*** file.

This setting will be used in subsequent backups. Once all backup files have been created, the files are stored to media. The files are immediately truncated upon a successful store of all copies. This frees up the disk space that was borrowed from the managed file system. The number of copies, type of storage, and other attributes can be modified from the StorNext Home page and clicking **Admin > Backups** tab.

A complete set of backups is comprised of a full and all the subsequent partial backups. A set is identified by a unique identifier. This unique number is used during restores to tie all the backup elements together. Backups can be manually executed (command line or GUI) or they can be scheduled.

NOTE: By default, full backups are scheduled on Sundays. Partial backups are scheduled every day of the week except Sunday. When a backup completes, an e-mail notification is sent. The e-mail sent contains information about the backup. This backup information must be retained in order to successfully do a restore of the system in case of failure. If storage disks are used, the path of the storage disk media is shown.

IMPORTANT

DO NOT ATTEMPT RESTORE FROM THIS TAPE, OR ANY BACKUP UNLESS AUTHORIZED BY A CERTIFIED QUANTUM STORNEXT SUPPORT ENGINEER. EED SUSTAINING ENGINEERING DOES NOT SUPPORT ANY SYSTEM RESTORATION THAT HAS NOT BEEN APPROVED, OR PERFORMED SOLELY BY A QUANTUM CUSTOMER SUPPORT ENGINEER.

The following procedures describe how to run a manual backup. These backups are scheduled by default to run once a day. If a full backup already exists, you have the option to run either a full or partial backup.

By default, a full backup is run once a week. Weekly backups should include:

- The StorNext database.
- Configuration files.
- File system metadata dump file (after journal files are applied).

A partial backup runs on all other days of the week (that the full backup is not run). On other days backup should include:

- StorNext database journals.
- Configuration files.
- File system journal files.

Table 14.6-1 provides an Activity Checklist for StorNext Backup procedures addressed in this section.

Table 14.6-1. StorNext Backup Procedures - Activity Checklist

Order	Role	Task	Section	Complete?
1	Archive Manager	Executing a StorNext Backup	(P) 14.6.1	
2	Archive Manager	Scheduling a StorNext Backup	(P) 14.6.2	

14.6.1 Executing a StorNext Backup

1 Connect to the StorNext web page using Firefox or Internet Explorer.

2 From the StorNext home page click Admin > Run Backup.

- The options for the Admin drop-down menu (Figure 14.6-1) enable you to control day-to-day operations of StorNext. The Admin menu contains these options:

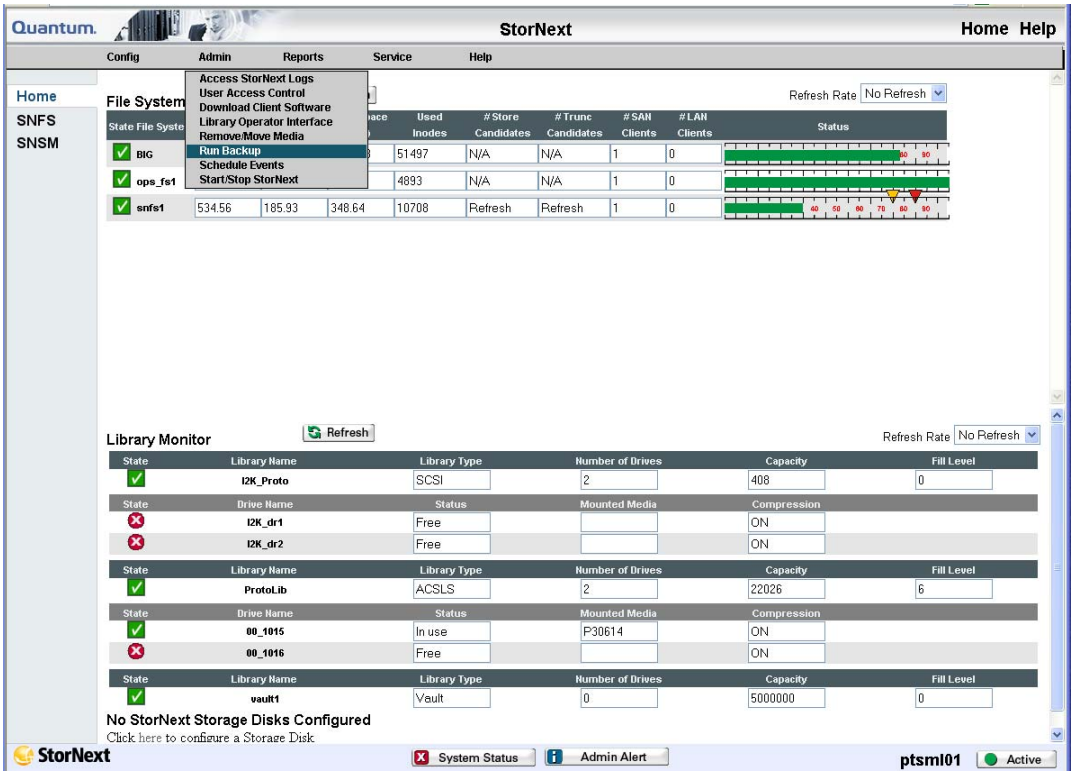

Figure 14.6-1. StorNext Admin Pull- Down Screen

- **Access StorNext Logs:** Access logs of StorNext operations
- **User Access Control**: Control user access to StorNext tasks
- **Download Client Software**: Download SNFS client software
- **Library Operator Interface**: Enter or eject media from the Library Operator Interface
- **Remove/Move Media**: Remove media from a library or move media from one library to another
- **Run Backup**: Run a backup of StorNext software
- **Schedule Events**: Schedule file system events including Clean Info, Clean Versions, Full Backup, Partial Backup, and Rebuild Policy
- **Start/Stop StorNext**: Start or stop the StorNext components

3 Select Run Backup. The Backup StorNext screen appears (Figure 14.6-2).

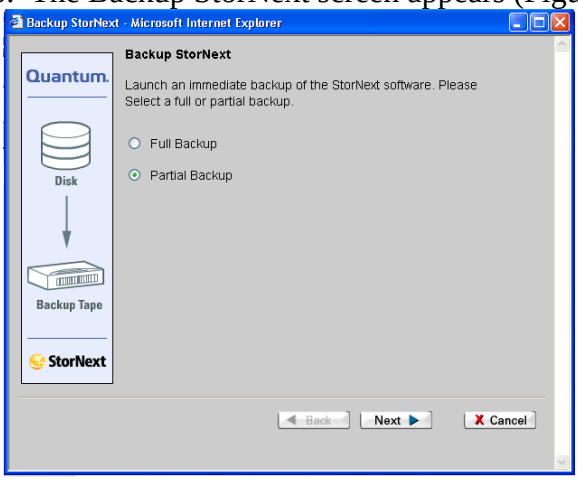

Figure 14.6-2. Backup StorNext Screen

4 Select the type of backup you want run, Full or Partial, then click Next. The **Complete Backup Task** screen appears (Figure 14.6-3).

NOTE: These backups DO NOT backup user data.

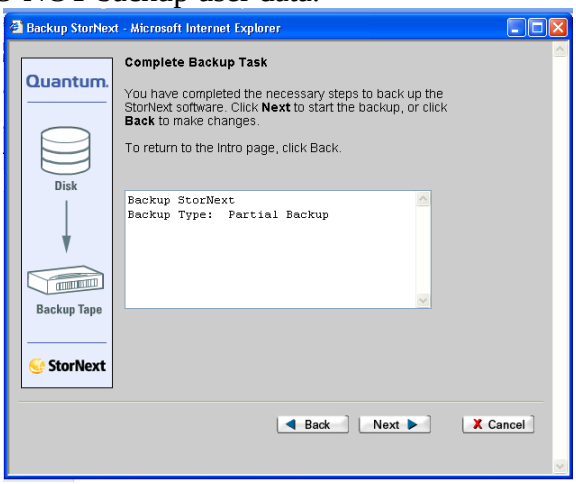

Figure 14.6-3. Complete Backup Screen

5 Click Next to start the backup.

6 Click Finish when the Status screen displays success.

As stated previously, by default the StorNext Full Backup is set to execute once a week, and Partial Backups are performed on each day of the week that the full backups does not run on. To schedule a backup outside of the default setting, use the Scheduling StorNext Events screen.

You can use this screen to schedule all StorNext events. The following is an explanation of how to schedule a new event, such as backups.

Events that can be scheduled are:

- **Clean Info:** Scheduled background operation for removing knowledge of media from StorNext.
- **Clean Versions**: Clean old inactive versions of files.
- **Full Backup:** By default, a full backup is run once a week to back up the entire database, configuration files, and the file system metadata dump file.
- **Partial Backup**: By default, a partial backup is run on all other days of the week (that the full backup is not run). This backup includes database journals; configuration files, and file system journal files.
- **Rebuild Policy: Rebuild** the internal candidate lists (for storing, truncation, and relocation) by scanning the file system for files that need to be stored.

NOTE: The **Scheduler** does not dynamically update when dates and times are changed greatly from the current setting. You must reboot the system to pick up the change.

Each of these events have a default schedules set, these procedures allow you to reconfigure the schedules to suit your system needs.

14.6.2 Scheduling a StorNext Backup

1 From the **StorNext Home Page**, click **Admin > Schedule Events**.

- The **Feature Schedules** screen appears (Figure 14.6-4).

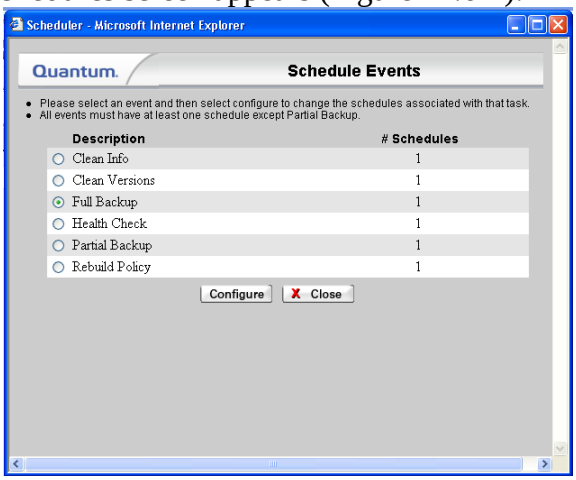

Figure 14.6-4. Feature Schedules Screen

2 Select a feature to schedule and click **Configure**.

- The Feature Schedules screen displays the selected Feature and its current schedule (Figure 14.6-5).

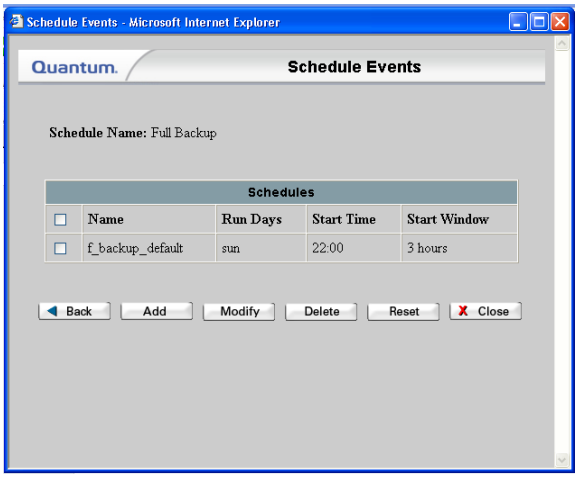

Figure 14.6-5. Selected Feature Schedules Screen

Select a **schedule**, then click one of the following:

- **Back**: Go back to the previous screen.
- **Add**: Add a new schedule.
- **Modify**: Change an existing schedule.
- **Delete**: Delete an existing schedule.
- **Reset**: Reset the schedule to the default settings.
- **Close**: Close the window.

14.7 Scalar Library

14.7.1 Scalar I500 library

The operator panel is the touch screen display device located on the access door of the control module. The library operations and service functions are performed from this screen and from a remote web client. Both are required, since not all functionality is available through both. (Figures 14-7.1 and 14-7.2) The user interface has the following areas:

Header Bar – appears on every screen with the home, help and logout buttons.

Title Bar – is on the operator panel and gives library and partition panels.

Menu Bar – lists the menu choices on the web client only.

Main – Body of the screen.

Health/Navigation - Displays the status of the Library, Dives, and Media.

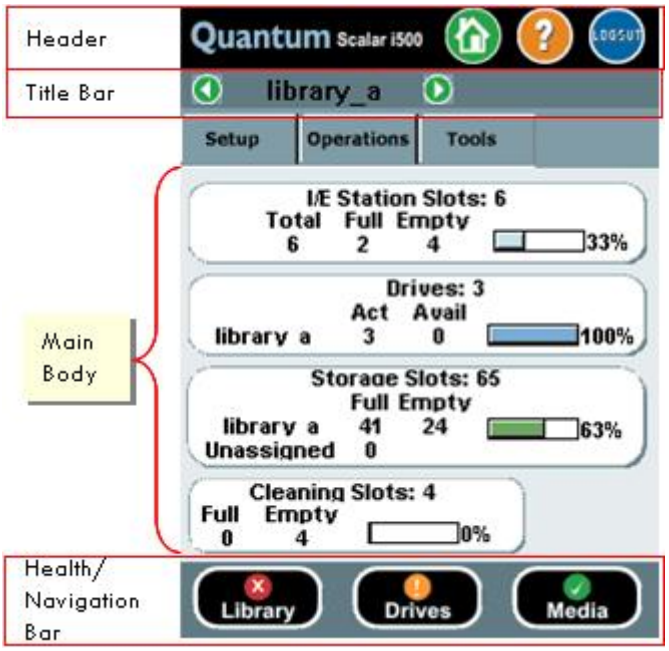

Figure 14.7-1. Scalar i500 Operator Panel User Interface

The buttons in the Health/Navigation Bar provide quick access to the information about the library. The buttons show RAS tickets that are reported by the library. Green state means that no tickets exist, yellow means there are open and unopened low and high tickets, red shows open and unopened urgent tickets.

The Capacity View is the default and shows the partitions, slots and drives in the main body of the screen.

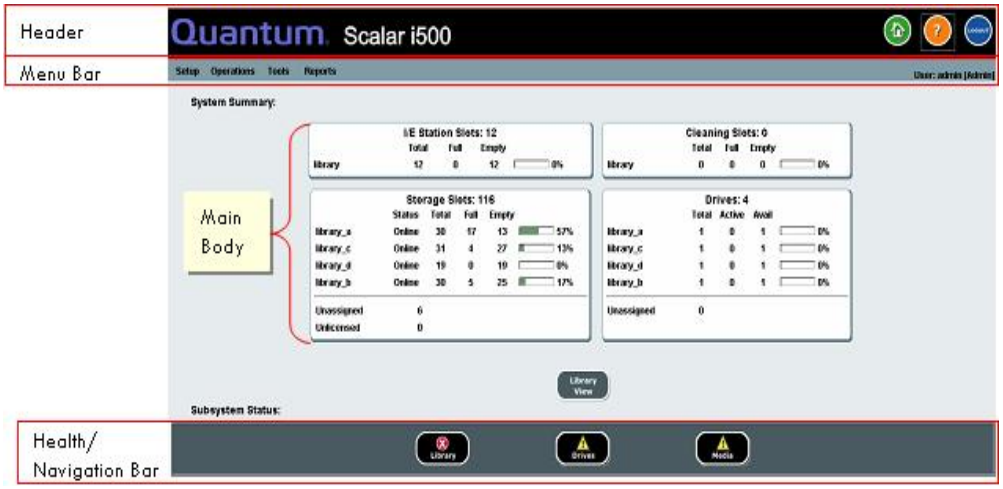

Figure 14.7-2. Scalar i500 Web Client User Interface

Table 14.7-1. StorNext Backup Procedures - Activity Checklist

Order	Role	Task	Section	Complete?
1	Archive Manager	Scalar i500 Common Library Functions	(P) 14.7.1.1	
2	Archive Manager	Importing and Exporting Media	(P) 14.7.1.2	

14.7.1.1 Scalar i500 Common Library Functions

All users must login to the library to perform library functions or view the library operations, either trough the operator panel or through the web browser.

1 Enter the **Username** and **Password** in the text boxes. (Figure 14.7-3) After initial setup the password is no longer the default, and must be obtained from the site administrator before continuing.

Note: To replace or reset your password, contact Quantum for technical support.

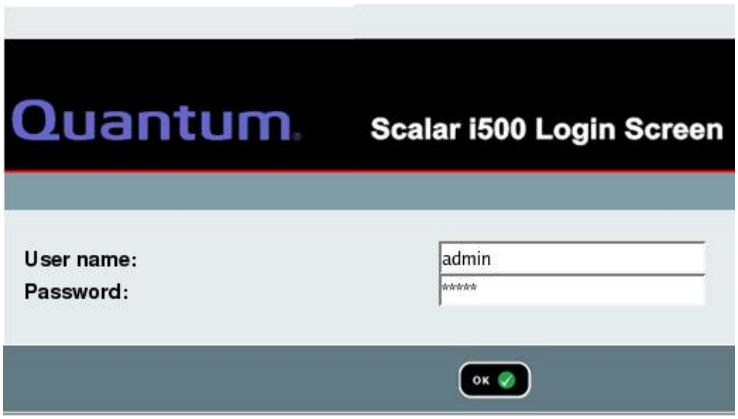

Figure 14.7-3. Scalar i500 Login Screen

2 Remember to always log out when library access is complete. With the web browser click the **Logout** button, or with the operator panel select **Operations > Logout**.

14.7.1.2 Importing and Exporting Media

WARNING: If the selected partition is online, it must be taken offline before the import or export operation is performed. This WILL impact operation.

The Import Export (IE) slots allow media to be imported and exported from the library. During import, the library's scanner automatically reads the barcode on new cartridges in the IE slots. Before importing cartridges, verify that all tape drives are unloaded and all cartridges are in the appropriate storage slot locations.

1 From the front of the library, insert cartridges into the IE station door. Once the door is closed the **Assign IE** screen appears on the operator panel. Select the partition and the slot to assign the cartridges. Select **Apply**.

2 Use the Import Media screens: **Operations> Media >Import** on either the operator panel or the web client to import the tapes into the partition. The partition will be taken off line and brought back online, so make sure StorNext is down on the server.

Note: The media must be configured into StorNext before it can be used. The instructions are found in Section 14.5.1.1 to of this document.

3 The Export media operation enables data cartridges to be exported from storage slots to the empty IE slots for removal from the library. From the menu select **Operations>Media>Export**. Provide the Partition and the tape cartridge that is to be removed. The partition will be taken offline and will be return online when export is complete.

14.7.2 Scalar I6000 library

The operator panel on the i6000 library is located on the front of the control module. It includes an indicator panel for the Robotics, Status and Power and a touch screen. The touch screen is the library navigation point and provides access to the Library Management Console (LMC). (Figure 14.7-4)

The LMC consists of five primary areas:

Title Bar – contains the library name

Menu Bar – provides menu access to all LMC commands

Tool Bar – quick access to most commonly executed functions

Library information panel – real-time library information

Overall System Status - gives real-time status information for the six subsystems of the physical library.

Table 14.7-2. StorNext Backup Procedures - Activity Checklist

Order	Role	Task	Section	Complete?
1	Archive Manager	Scalar i2000 Common Library Functions	(P) 14.7.2.1	
2	Archive Manager	Importing and Exporting Media	(P) 14.7.2.2	

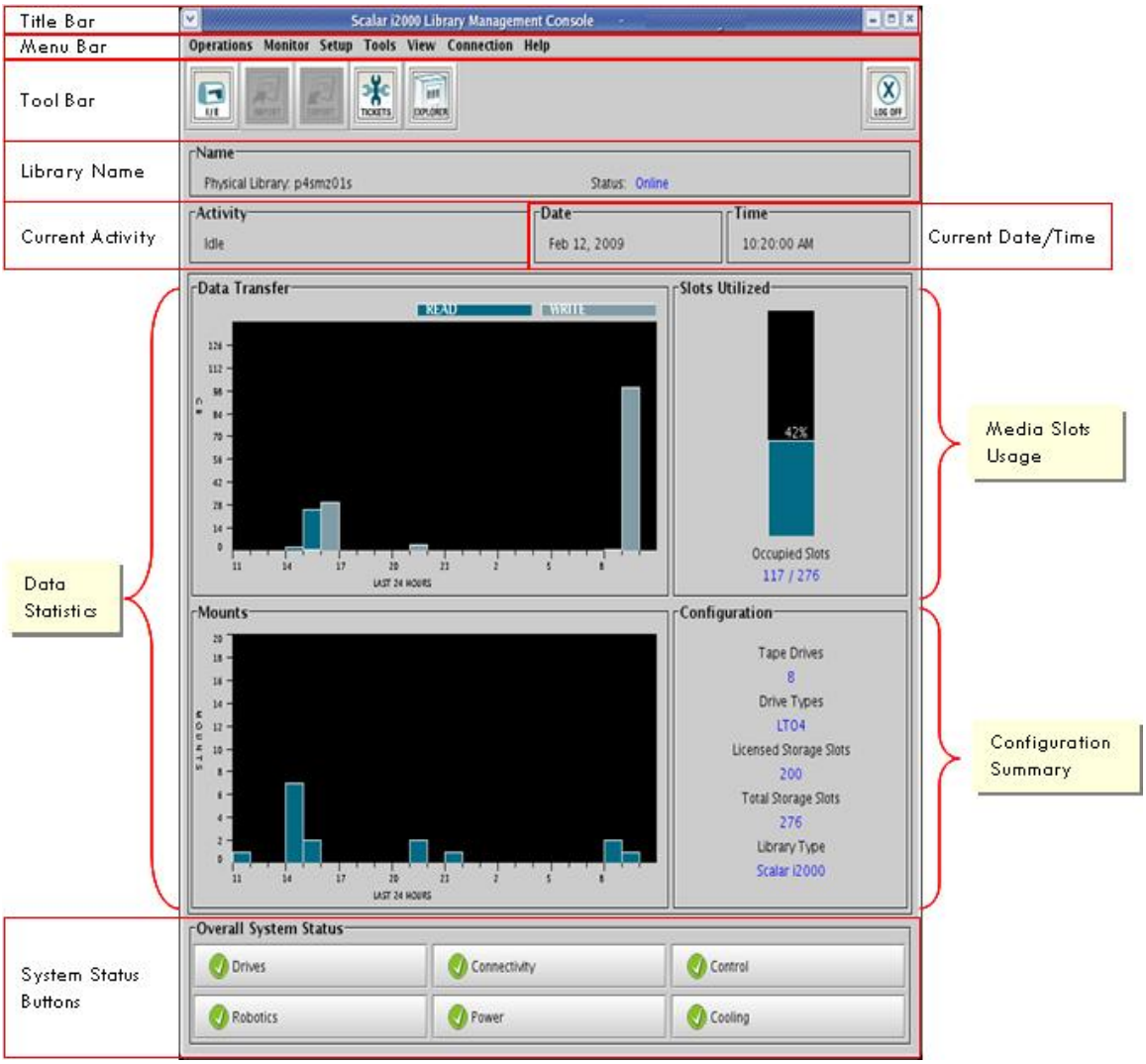

Figure 14.7-4. Scalar i6000 Library Management Console

14.7.2.1 Scalar i6000 Common Library Functions

1 From the **Tools** drop down menu, click **Library Explorer.** The Library Explorer dialog box appears.

- You can use the Library Explorer feature (Figure 14.7-5) to view a graphical presentation of all the drives, cartridges, and slots in the library. The Library Explorer can display all library elements according to physical location in any configuration.
- The Library Explorer features are available to administrator and service users, along with non-administrative users who have limited access to library functions. Users who do not have administrative privileges can perform all Operations options available to non-administrative users directly from the Library Explorer dialog boxes.

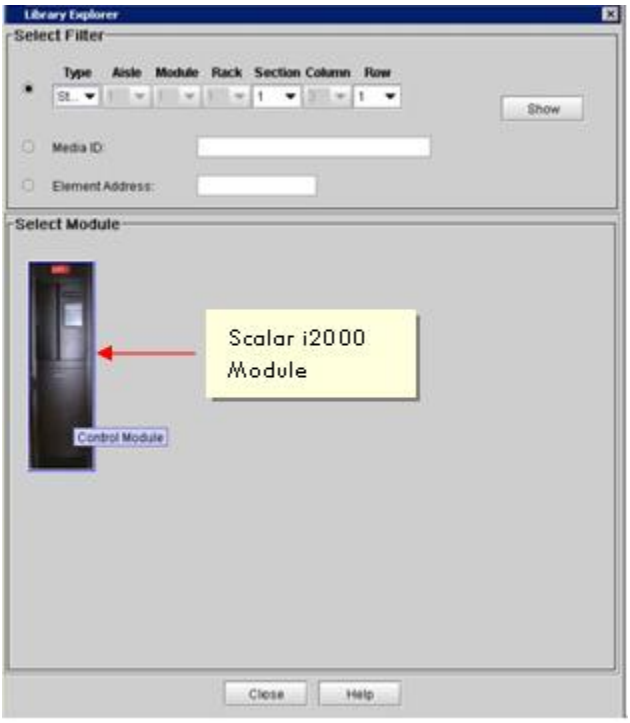

Figure 14.7-5. Scalar i6000 Library Explorer Screen

2 You can display library data using either the **Select Filter** options or clicking on a particular module in the **Select Module** area.

- In the **Select Filter** area, search for and display specific criteria by device type and location coordinates, (or by Media ID.)
- Select the **Device Type** filter, then from the **Type** drop-down list, click the appropriate device type: IE (I/E Station), Storage, or Drive. Click **Show**. The Module dialog box displays a graphical view of the library elements according to your Type filter choices.
- To search for a specific cartridge according to the cartridge's barcode, select the **Media ID** filter, type the barcode in the **Media ID** field, then click **Show**. The Module dialog box displays the specific cartridge highlighted in red within the module where it is located.

- In the **Select Module** area, you can select a **specific module** in your library to view. On a multi-module library, all modules are represented.
- In the **Select Module** area, click the **module** to view. The Module dialog box displays the current configuration of Rack one and Rack two according to the module you chose.

3 If you choose to search for an element by its address or choose to locate a cartridge by its media barcode, your search result appears in red in the Library Explorer Module dialog box.

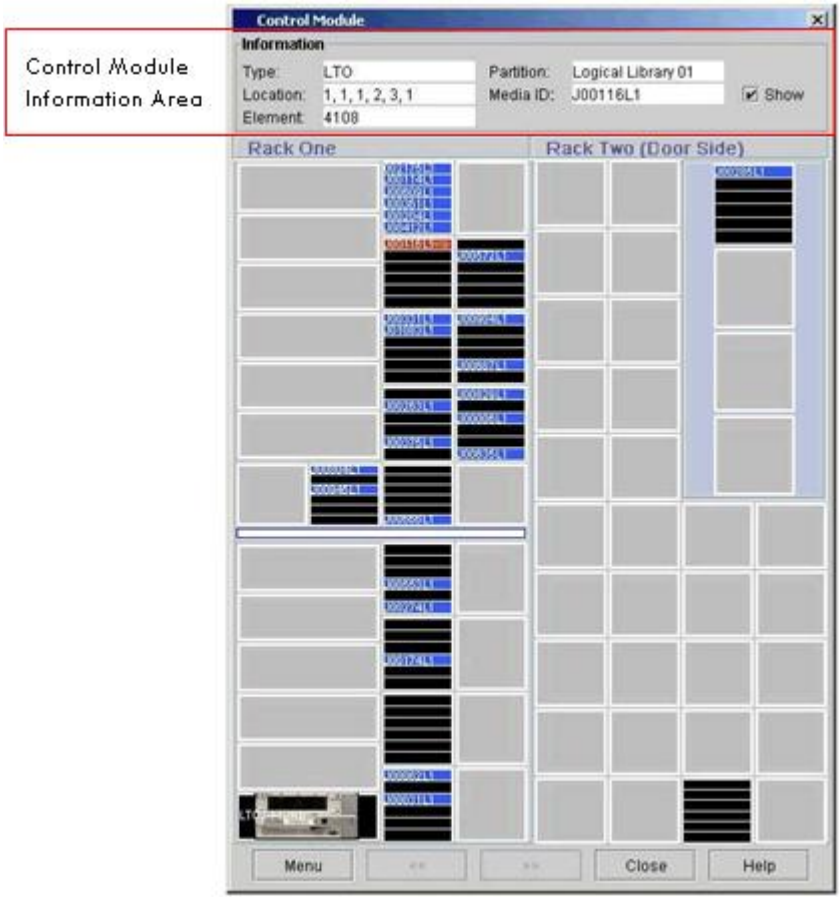

Figure 14.7-6. Scalar i6000 Control Module Information Screen

4 You can access Library Explorer Module from both the physical and partition views, but the functionality in the physical view is limited. If you are in a partition view, you can view slots and drives pertaining to that particular partition.

- The **Control Module** (Figure 14.7-6) dialog box displays the current configuration of the Rack.

- Slots containing cartridges are blue. Empty slots are black. Your search result appears in red.
- Details concerning the particular cartridge, drive, or slot appear in the **Information area**.
- Barcode numbers appear on slots containing cartridges.
- If you click on a specific slot or drive, that slot or drive is highlighted in red, and details about the slot or drive appear in the Information area.
- If you move the mouse over a specific segment in the module, a tool tip displays the coordinates of that particular segment.
- To move from one module to another, click on the arrows at the bottom of the dialog box.

5 You can access Library Explorer Module from both the physical and partition views, but the functionality in the physical view is limited. If you are in a partition view, you can view slots and drives pertaining to that particular partition.

- The **Control Module** dialog box displays the current configuration of the Rack.
- Slots containing cartridges are blue. Empty slots are black. Your search result appears in red.
- Details concerning the particular cartridge, drive, or slot appear in the Information area.

14.7.2.2 Importing and Exporting Media

When you first start using your library, open the door and manually insert, directly into storage slots. The cartridges will not go back all the way if they are inserted incorrectly.

WARNING – StorNext must be shutdown to add media to the library, since this will take the partition offline.

The **Import Media** dialog box is used to add cartridges without interrupting library operations. Place cartridges in the I/E station. The scanner automatically reads the barcodes on new cartridges.

1 Make sure that you are viewing the partition into which you want to import a data cartridge. From the **View menu**, click the name of the appropriate partition.

2 Insert a **data cartridge** into an appropriate I/E station. You can insert multiple cartridges up to the maximum number of slots in your I/E station.
To see which I/E stations are associated with a particular partition, click **Monitor, IE Station.**

3 Click **Operations, Import** (or click the Import toolbar button).

WARNING – If the partition is not offline, you receive a message that asks you whether you want to take it offline. Click Yes.

The **Import Media** dialog box (Figure 14.7-7) appears with a list of cartridges in the I/E station displayed.

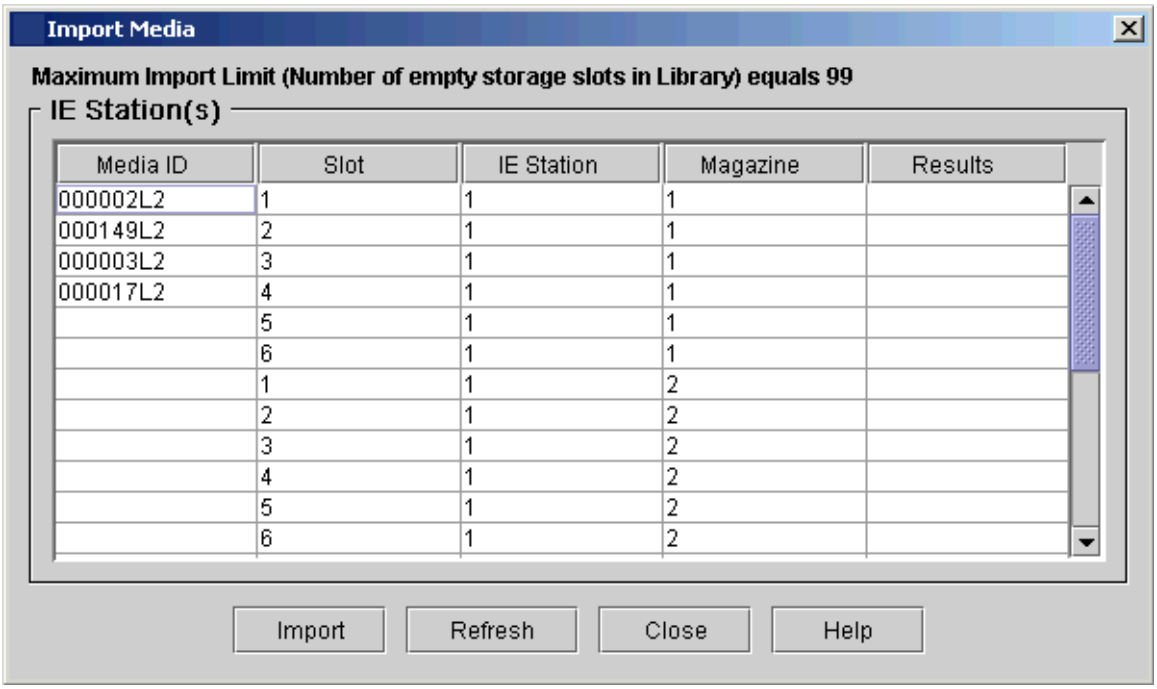

Figure 14.7-7. Scalar i6000 Import Media Screen

4 Select a cartridge (to highlight it), then click **Import**.

The picker automatically moves the cartridge from the I/E station to the first available empty slot in that partition. You cannot manually specify the slot.

Exporting Cartridges

1 Select the partition from which you want to export a data cartridge. From the **View menu**, click the **name of the appropriate partition**.

2 Click **Operations, Export** (or click the **Export** toolbar button.)

- The **Export Media** dialog box (Figure 14.7-8) appears with a list of cartridges in the partition displayed.

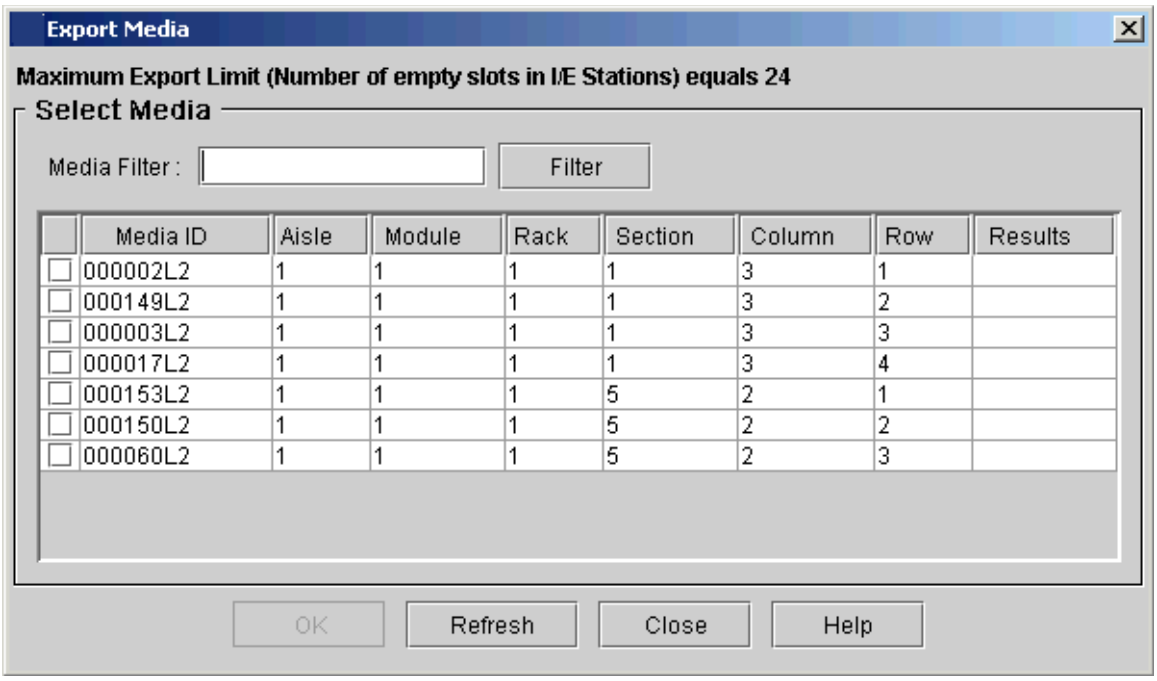

Figure 14.7-8. Scalar i2000 Export Media Screen

3 To display one or more media IDs that match a particular pattern, type a media filter in the **Media Filter** text box, then click **Filter**.
Filter performs a search for media IDs that match a particular pattern. In the example, the media filter has been set to capture media IDs beginning with the string "J00".

4 Select the corresponding **check box** in the leftmost column for each cartridge that you want to export.
The maximum number of slots that are available in the I/E station partition appears at the top of the table.

5 Click **OK**.

- All designated cartridges are exported to the I/E station slots that are associated with the partition. After the operation completes, the library automatically refreshes information in the table.

14.8 LTO Tape Drives

The next section provides the procedures for cleaning LTO tape drives. Table 14.8-1 provides the activity checklist for cleaning LTO tape drives.

Table 14.8-1. Table Cleaning Procedure - Activity Checklist

Order	Role	Task	Section	Complete?
1	Archive Manager	Cleaning LTO Tape Drives	(P) 14.8.1	

14.8.1 Cleaning LTO tape drives

Note: To perform this procedure, you must have a least one cleaning tape in the library.

1 From the SNMS home page, choose **Drive, Clean Drive** from the **Admin** menu. The **Clean Drive** screen appears (Figure 14.8-1).

Figure 14.8-1. Clean Drive Screen

2 Select from the **Select Drive List** the drive to clean, then click **Apply**. The **Clean Drive** status screen appears.

3 After the Status screen notifies you that the drive has been cleaned successfully, click **Close.**

14.9 Archive Maintenance Tasks - Deleting Granules

The Granule Deletion Utilities are a set of command line utilities:

- EcDsBulkSearch
- EcDsBulkDelete
- EcDsBulkUndelete
- EcDsDeletionCleanup

They will provide the EED Operations Staff with the ability to search granules for deletion, logically delete granules (marked granule for deletion), undelete logically deleted granules and physically clean up deleted granules, by using a set of command line interfaces.

The deletion process can involve deleting the specified granules along with associated granules, as long as no other granules reference the associated granules (e.g., browse, PH, QA). The deletion process can also involve deleting the specified granules even if they are inputs to other granules.

There are two phases to the granule deletion process:

- **Phase 1, Logical Deletion:** Logical deletion [marking or flagging granules as "deleted" or as DFA (Delete From Archive) only in the AIM database]. 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 (AIM database) those granules that meet the criteria. The granules are marked as "deleted" and can no longer be accessed, but their inventory entries are not removed yet. The logical "deletion" may specify the flagging of granule files to be deleted from the archive (*Delete From Archive*, or DFA) only, leaving the inventory record intact, or it may specify *Physical Deletion*, which entails removal of the inventory record from the database as well as removal of the files from the archive. For each granule to be physically deleted an entry is made in the DsMdDeletedGranules table of the Inventory Database with a time stamp recording the logical deletion time. If applicable, the DFAFlag is set for the granule's entry in the DsMdDeletedGranules table. Flagging DFA granules involves changing the value of the DeleteFromArchive entry in the DsMdGranules table from **N** to **Y**.

- **Phase 2, Physical Deletion:** Physical deletion involves the actual deletion of marked/flagged granules from the inventory database with removal of XML metadata files from the Small File Archive and the Science Granules from the Online and Tape File Archives. The second phase is actual deletion from the inventory of the granules marked for physical deletion (not DFA only). Physical deletion occurs when the operations staff runs the Deletion Cleanup utility (EcDsDeletionCleanup.pl). The Deletion Cleanup utility removes all Inventory entries for that granule from the AIM db, the XML file for the granule is removed from the XML archive, and all data files for the granule are removed from the Online and Tape File Archives. Please note, Granule Deletion Phase II will skip granules which are in public Data Pool or on order. So, before the operator executes Phase II script, he/she should run Data Pool Unpublish Utility with –aim option to unpublish granules which are marked for deletion in the Inventory database.

Periodically, as sufficient data removal from the archive makes it appropriate, Operations may elect to reclaim the tape space and recycle archive tapes. StorNext software commands (e.g., *volcomp*, *volclean*, *volformat*, and *volstat*) are used for that purpose.

Table 14.9-1 provides an Activity Checklist for Deleting Granules from the Archive.

Table 14.9-1. Deleting Granules - Activity Checklist

Order	Role	Task	Section
1	Archive Manager/Database Administrator	Generating a GeoID File	(P) 14.9.1.1
2	Archive Manager/Database Administrator	Mark Granules for Deletion (Logical)	(P) 14.9.2.1
3	Archive Manager/Database Administrator	Undelete Marked Granules for Deletion (Logical)	(P) 14.9.3.1
4	Archive Manager/Database Administrator	Running the Data Pool Unpublish Utility with –aim option	(P) 14.11.13.1
5	Archive Manager/Database Administrator	Deleting Granules, Phase 2: Running the Deletion Cleanup Utility	(P) 14.9.4.1
6	Archive Manager/Database Administrator	Deleting Granules, Phase 2: Rerun unfinished Physical Cleanup	(P) 14.9.4.2

14.9.1 Generating a GeoID File

A GeoID is the granule identification portion of a Universal Reference (UR); it contains the BaseType, SubType (ESDT ShortName and VersionID) and databaseID. For example, the GeoID SC:AST_L1BT.001:5850 indicates BaseType SC (science granule), ShortName AST_L1BT (ASTER Level 1B thermal infrared data) VersionID 001, and databaseID 5850. The GeoID is different for each granule in the system.

GeoID files are input files for scripts used in deleting (or "undeleting") ECS granules from the inventory, archive, or Data Pool. A GeoID file consists of a list of GeoIDs for granules that are to be deleted (or "undeleted"). One way to generate a file of granule GeoIDs is to use the Bulk Search utility (EcDsBulkSearch.pl), which allows the operator to specify criteria for selecting granules on the basis of certain characteristics (e.g., ESDT, version, and date inserted in the archive). Subsequently, the GeoID file can be used as input to the Bulk Delete utility, the Bulk Undelete utility, or the Data Pool Cleanup Utility. Table 14.9-2 provides a description of the parameters used in executing the Bulk Search utility.

Table 14.9-2. Command Line Parameters of the EcDsBulkSearch.pl (1 of 2)

Parameter Name	Mandatory	Description
name	No	ESDT Short Name of the granules to delete.
version	No	ESDT Version ID of the granules to delete.
begindate	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules whose BeginningDateTime is greater than or equal to the specified date and time.

Table 14.9-2. Command Line Parameters of the EcDsBulkSearch.pl (2 of 2)

Parameter Name	Mandatory	Description
enddate	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules who's EndingDateTime is less than or equal to the specified date and time.
acquirebegin	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules whose BeginningDateTime is greater than or equal to the specified date and time. This option is the same as '- begindate', except that it can be combined with 'acquireend' and used in a 'BETWEEN' clause.
acquireend	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules who's BeginningDateTime is less than or equal to the specified date and time. This option is usually used in conjunction with 'acquirebegin'.
insertbegin	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules who's insertTime is greater than or equal to the specified date and time
insertend	No	<mm/dd/yyyy> <hh:mm:ss> Search only for granules who's insertTime is less than or equal to the specified data and time
localgranulefile	No	The name of a file containing Local Granule IDs to be converted into Geoids
geoidfile	Yes	Name of file containing geoids of the granules to delete.
physical	No	Search only for deleted granules.
dfa	No	Search only for DFA'd granules
mode	Yes	The ECS mode in which the program is to operate, this parameter can be omitted if the environment variable MODE is set.
limit	No	Search will return top of <n> granules specified by limit
password	No	The name of the database login password, the utility will prompt user to enter the password if it is not specified in the command line (for security reason, not recommend to specify password in the command line)

Generic Bulk Search format:

EcDsBulkSearch.pl -name <*shortname*> -version <*version ID*> -begindate <*mm/dd/yyyy*> <*hh:mm:ss*> -enddate <*mm/dd/yyyy*> <*hh:mm:ss*> -insertbegin <*mm/dd/yyyy*> <*hh:mm:ss*> -insertend <*mm/dd/yyyy*> <*hh:mm:ss*> -acquirebegin <*mm/dd/yyyy*> <*hh:mm:ss*> -acquireend <*mm/dd/yyyy*> <*hh:mm:ss*> -DFA -physical -localgranulefile <*path/filename*> -geoidfile <*geoid file*> -limit <*granule limit*> -mode <*ECS mode*> -password <*database login password*>

14.9.1.1 Generating a GeoID File

1 Log in at the x4dpl01 host, where the Bulk Search utility is installed.

2 To change to the directory for starting the Bulk Search utility at the UNIX prompt enter:

cd /usr/ecs/<*MODE*>/CUSTOM/utilities

- The working directory is changed to /usr/ecs/<MODE>/CUSTOM/utilities.

3 To set up relevant environment the following commands would allow the Bulk Search utility to run using the OPS mode Inventory database at the DAAC:

setenv MODE OPS

- The <ECS mode> value specified for the MODE parameter indicates the ECS mode (e.g., OPS, TS1, or TS2) to be searched.
  - If this environment variable is set, the **-mode** command line argument does not need to be given when starting the Bulk Search utility.

4 Example 1:

- Generate a file of GeoIDs deletion by shortname, versionid and inclusive temporal range:
  EcDsBulksearch.pl –geoidfile <*/path/geofilename*> -name <*ESDT ShortName*> -version <*ESDT versionId*> -begindate <*mm/dd/yyyy*>

5 Example 2:

- Generate a file of GeoIDs for all MYD09GQ.001 granules marked “DFA” in the OPS mode.

  EcDsBulkSearch.pl -DFA -name MYD09GQ -version 001 -password *password* -geoidfile *MYD09GQ_Dec23.geoid*

6 Example 3:

- Generate a file of GeoIDs for all deleted (“physical” deletion) MYD09GQ_100 granules in the OPS mode at the DAAC.

  EcDsBulkSearch.pl -physical -name MYD09GQ -version 100 -password <password> -geoidfile MYD09GQ_Dec23.geoid

7 When the Bulk Search utility has completed its run and the GeoID output file is available, at the UNIX prompt enter:

vi <*geoid file*>

- ***<geoid file>*** refers to the GeoID file to be reviewed
- Although this procedure has been written for the **vi** editor, any UNIX editor can be used to edit the file.

8 Review the file entries to identify any problems that have occurred.

- The GeoID file must contain GeoIDs in the format ***<BaseType>:<ESDT_ShortName.VersionID>:<databaseID>***.
- For example:
  SC:PM1ATTNR.077:2013496393
  - The GeoID in the example indicates BaseType SC (science granule), ShortName PM1ATTNR (AQUA attitude data in native format) VersionID 077, and databaseID 2013496393.
- There may be no spaces or blank lines in the file.

9 Use UNIX editor commands to fix problems detected in the file.

- The following vi editor commands are useful:
  - **h** (move cursor left).
  - **j** (move cursor down).
  - **k** (move cursor up).
  - **l** (move cursor right).
  - **a** (append text).
  - **i** (insert text).
  - **r** (replace single character).
  - **x** (delete a character).
  - **dw** (delete a word).
  - **dd** (delete a line).
  - ***n*dd** (delete *n* lines).
  - **u** (undo previous change).
  - **Esc** (switch to command mode).

10 Press the **Esc** key.

11 At the **vi** prompt enter:

ZZ

- **vi** exits and the edited file is saved.
  - To exit **vi** without saving the new entries in the file type **:q!** then press **Return/Enter**.
- UNIX command line prompt is displayed.

14.9.2 Deleting Granules, Phase 1: Mark Granules for Deletion (Logical)

Once granules have been identified/selected for deletion, the operator runs the Bulk Delete utility, a Perl script, **EcDsBulkDelete.pl**. There are two types of runs that can be performed with the Bulk Delete utility:

1 Physical.
2 DFA.

A "physical" deletion run results in marking granules in the geoidfile as logically deleted. Specifying "DFA" (not able to combine with physical) will mark the granules in the geoidfile as DFAed, meaning the metadata will be kept but the granule files will be removed from the archive.

As previously mentioned the Bulk Delete utility responds to operator-specified criteria for the deletion of granules by "logically" deleting from the Inventory Database those granules that meet the criteria. The granules are marked as "deleted" and can no longer be accessed, but their inventory entries are not removed yet. The logical "deletion" may specify the flagging of granule files to be deleted from the archive (*Delete From Archive*, or DFA) only, leaving the Inventory Database record intact, or it may specify *Physical Deletion*, which entails removal of the Inventory Database record from the database as well as removal of the files from the archive.

For each granule to be physically deleted an entry is made in the DsMdDeletedGranules table of the Inventory Database with a time stamp recording the logical deletion time. If applicable, the DFAFlag is set for the granule's entry in the DsMdDeletedGranules table. Flagging DFA granules involves changing the value of the DeleteFromArchive entry in the DsMdGranules table from **N** to **Y**. Table 14.9-3 provides a description of the parameters used in executing the Bulk Delete utility.

Table 14.9-3. Command Line Parameters for EcDsBulkDelete.pl

Parameter Name	Mandatory	Description
geoidfile	Yes	Name of file containing geoids of the granules for deletion.
physical	Yes if not **dfa**	Specifying this parameter will mark granules in the geoidfile logically deleted.
DFA	Yes if not **physical**	Specifying this parameter (not able to combine with physical) will mark the granules in the geoidfile as DFAed, meaning the metadata will be kept but the granule files will be removed from the archive.
delref	No	Optional. When given, indicates that non SC/LM granule should be deleted even if it is associated to undeleted SC/LM granules Note: This option has no effect on deleting SC/LM granules. They are always deleted regardless of being referenced or not.
noassoc	No	Optional. When given, indicates that associated granules (Browse granules etc.,) will not be deleted.
mode	Yes	The ECS mode in which the program is to operate, this parameter can be omitted if the environment variable MODE is set.
password	No	The name of the database login password, the utility will prompt user to enter the password if it is not specified in the command line (for security reason, not recommend to specify password in the command line)
log	No	The name of the log file to which a deletion report will be written. If this is not provided, it will default to /usr/ecs/<MODE>/CUSTOM/logs/

NOTE: A prerequisite to deleting granules is having a file of GeoIDs (corresponding to granules) for use as input to the Bulk Delete utility. Although it is possible to manually create a file of GeoIDs, an easier way is to use the Bulk Search utility to generate a list of GeoIDs based on criteria specified when running the Bulk Search utility (refer to the procedure for running the Bulk Search utility.)

Generic Bulk Delete format:

EcDsBulkDelete.pl -physical | -DFA -delref –noassoc -user <db_user> -password <passwd>-geoidfile <path/filename>–mode <MODE> -log <log_file_name>

14.9.2.1 Mark Granules for Deletion (Logical)

1 Log in at the x4dpl01 host, where the Bulk Delete utility is installed.

2 To change to the directory for starting the Bulk Search utility at the UNIX prompt enter:

cd /usr/ecs/<*MODE*>/CUSTOM/utilities

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 To set up relevant environment the following commands would allow the Bulk Search utility to run using the OPS mode Inventory database at the DAAC:

setenv MODE OPS

NOTE: There are two types of runs that can be performed with the Bulk Delete utility; i.e., "physical," or "DFA." A "physical" deletion run results in marking each specified granule and metadata as deleted from both inventory and archive. A "DFA" run involves deletion from the archive only.

4 To mark granules for logical "physical" deletion (i.e., granules plus associated granules such as Browse, QA and PH), at the UNIX prompt enter:

EcDsBulkDelete.pl -physical -delref -noassoc -geoidfile <*path/geoid_name*>

- The -delref option (i.e., delete granules that are referenced by other granules) indicates that a non-science/limited (non-SC/LM) granule should be deleted even if it is associated with "undeleted" SC/LM granules.
- The -delref option has no effect on deleting SC/LM granules. They are always deleted regardless of whether or not they are referenced.

5 To mark granules for logical "DFA" deletion (i.e., meaning the metadata will be kept but the granule files will be removed from the archive), at the UNIX prompt enter:

EcDsBulkDelete.pl -DFA -geoidfile <*path/geoid_name*> -log <*log_file_name.log*>

- The -DFA option indicates that the granules listed in the GeoID file are to be marked as "Delete From Archive" only (does not involve a "physical" deletion).
- The Bulk Delete utility records information about utility events in the log file.

6 When the Bulk Delete utility has completed its run and the log file is available, at the UNIX prompt enter:

more <*log filename*>

- The contents of the log file is displayed.

14.9.3 "Undeleting" Granules from the Archive and Inventory

Logically deleted or DFAed granule(s) can be undeleted by EcDsBulkUndelete utility.

The **BulkUndelete** utility requires a **geoid** file, in which all granules intended to be undeleted are properly listed (i.e., "physical" or –DFA).

The following command line format is used to **undelete** granules which have been marked for "physical" deletion or DFA deletion.

EcDsBulkUndelete.pl -physical | -DFA –noassoc -user <db_user>**-password** <passwd>**-geoidfile** <path/filename>–**mode** <MODE> **-log** <log_file_name>

Table 14.9-4 provides a description of the parameters used in the Bulk Undelete utility.

Table 14.9-4. Command Line Parameters for EcDsBulkUndelete.pl

Parameter Name	Mandatory	Description
Geoidfile	Yes	Name of file containing geoids of the granules for deletion.
Physical	Yes	Specify this parameter will undelete granules specified in the geoid file which have been previously logically deleted.
DFA	Yes	Specify this parameter (not able to combine with physical) will un-DFA granules specified in the geoid file which have been previously marked as DFA.
Noassoc	No	Optional. When given, indicates that associated granules (Browse granules etc.,) will not be undeleted.
Mode	Yes	The ECS mode in which the program is to operate, this parameter can be omitted if the environment variable MODE is set.
Password	No	The name of the database login password, the utility will prompt user to enter the password if it is not specified in the command line (for security reason, not recommend to specify password in the command line)
Log	No	The name of the log file to which an undeletion report will be written. If this is not provided, it will default to /usr/ecs/<MODE>/CUSTOM/logs/

NOTE: A prerequisite to "undeleting" is having a file of GeoIDs (corresponding to granules) for use as input to the Bulk Undelete utility. Although it is possible to manually create a file of GeoIDs, an easier way is to use the Bulk Search utility to generate a list of "deleted" GeoIDs based on criteria specified when running the Bulk Search utility (refer to the procedure for running the Bulk Search utility).

14.9.3.1 Undelete Marked Granules for Deletion (Logical)

1 Log in at the x4dpl01 host, where the Bulk Undelete utility is installed.

2 To change to the directory for starting the Bulk Search utility at the UNIX prompt enter:

cd /usr/ecs/<*MODE*>/CUSTOM/utilities

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 To set up relevant environment the following commands would allow the Bulk Search utility to run using the OPS mode Inventory database at the DAAC:

setenv MODE OPS

NOTE: There are two types of runs that can be performed with the Bulk Undelete utility; i.e., "physical," or "DFA." A "physical undeletion" run results in removing "deleted" markings for the granules/metadata in both inventory and archive. A

"DFA undeletion" run involves removing "deleted" markings for the granules in the archive only.

4 To perform a "Physical" undeletion, at the UNIX prompt enter the following:

EcDsBulkUndelete.pl -physical -noassoc -geoidfile <*path/geoid_name*> -log <*log_file_name.log*>

- The Bulk Undelete utility runs and removes "deleted" markings for the granules specified in the GeoID file in the archive.
- The Bulk Undelete utility records information about utility events in the log file.

5 To perform a "DFA undeletion," at the UNIX prompt enter the following:

EcDsBulkUndelete.pl -DFA -geoidfile <*geoid file*> -log <*log filename*>

- The -DFA option indicates that "deleted" markings are to be removed for the granules in the archive only.
- The Bulk Undelete utility records information about utility events in the log file.

14.9.4 Deleting Granules, Phase 2: Running the Deletion Cleanup Utility

Once granules have been marked/flagged for deletion, the operator runs the Deletion Cleanup utility, **EcDsDeletionCleanup.pl**. As previously mentioned the Deletion Cleanup utility removes all inventory rows (in the Inventory Database) for "physically deleted" granules that were marked as "deleted," including rows referencing related information (e.g., BR, PH, and QA). The database records for the granule(s) are removed from all appropriate Inventory database tables.

When the utility is executed, the utility checks for any unfinished work from a previous run(s). If found, the user will be prompted the following options:

- Rerun unfinished run only
- Start a new run which includes unfinished run(s)
- Quit

The EcDsDeletionCleanup requires user's interactions during execution.

EcDsDeletionCleanup.pl –mode <MODE> **-batch** <number> **-grbatch** <number> **-phbatch** <number> **-log** <log_file_name>

There are various command line parameters that are used in combination with each other. Table 14.9-5 provides a description of the parameters.

The operations staff can control the lag time between logical deletion and physical deletion. The lag time is entered into the Deletion Cleanup utility, which deletes inventory entries only for granules that have been logically deleted prior to that time period.

Table 14.9-5. Command Line Parameters for EcDsDeletionCleanup

Parameter Name	Mandatory	Description
mode	Yes	The ECS mode in which the program is to operate, this parameter can be omitted if the environment variable MODE is set.
Log	No	The name of the log file to which an undeletion report will be written. If this is not provided, it will default to /usr/ecs/<MODE>/CUSTOM/logs/
batch	No	The batch size for populating DsStPendingDelete table in batch. This parameter can be omitted if the environment variable BATCH_SIZE_GRANULE is set. If the environment variable BATCH_SIZE_GRANULE is set, -**batch** <number> is also specified, the value from command line parameter –**batch** will be used. If neither the environment variable BATCH_SIZE_GRANULE is set nor –**batch** is specified, the user will be prompted to enter in runtime.
grbatch	No	The batch size used for physical granule file cleanup. If it is not provided in the command line, the user will be prompted to enter in runtime.
phbatch	No	The **phbatch** size for PH granule deletion. Because PH granule deletion could be time consuming, set a high batch size for PH granule deletion could lock the database too long, so this parameter can be specified separately and keep a small value such as 5. This parameter can be omitted if the environment variable BATCH_SIZE_PH is set. If the environment variable BATCH_SIZE_PH is set, -**phbatch** <number> is also specified, the value from command line parameter –**phbatch** will be taken. If neither the environment variable BATCH_SIZE_PH is set nor –**phbatch** is specified, the user will be prompted to enter in runtime.

14.9.4.1 Deleting Granules, Phase 2: Running the Deletion Cleanup Utility

1 Log in at the x4dpl01 host, where the Deletion Cleanup utility is installed.

2 To change to the directory for starting the Deletion Cleanup utility at the UNIX prompt enter:

cd /usr/ecs/<*MODE*>/CUSTOM/utilities

- The working directory is changed to /usr/ecs/<MODE>/CUSTOM/utilities.

3 To set up relevant environment variables (if desired) at the UNIX prompt enter:

setenv MODE <*ECS mode*>

4 To execute the Deletion Cleanup utility at the UNIX prompt enter:

EcDsDeletionCleanup.pl -user <*db_user*>**-batch** <*number*> **-grbatch** <*number*> **-phbatch** <*number*> **-log** <*log_file_name*>

NOTE: Take care when increasing the BATCH_SIZE_GRANULE and BATCH_SIZE_PH values beyond the recommended default values. If the values are set too high, the database tables will be locked and all available database locks will be used up.

- <batch size granule> represents the number of granules that will be deleted simultaneously from granule tables during granule cleanup. The default value is 50, which is accepted by pressing Return/Enter at the prompt without entering a value first.

5 Deletion Cleanup prepares to connect to the database and displays the following message is displayed:

Ready to get into inventory database...

6 After the Deletion Cleanup script connects to the database and checks for leftover granules that need to be processed. The following message is displayed:

Previous run was not completed, you can choose to:

1. Rerun unfinished run only

2. Start a new run which include unfinished run(s)

3. Quit

Select 1, 2 or 3:

7 Enter the appropriate number:
<number>

8 If there are granules marked as deletion or DFAed, the following message will be displayed for user selection:

==== Menu for Lag Time ====

1. Select granules for a specific day (lag<n> or date <mm/dd/yyyy> format)

2. Select all granules older than a specific day (lag<n> or date <mm/dd/yyyy> format)

3. Quit

Select 1, 2 or 3:

9 Enter the appropriate number:

<number>

- Entering 1 will cleanup granules whose deletion date fall into a single day specified by lag time. The user will be prompted to enter a lag time in number (***integer***) of days or a date <**mm/dd/yyyy**>.
- Entering 2 will cleanup all granules whose effective deletion date is older than the date specified by lag time. The user will be prompted to enter a lag time in number (***integer***) of days or a date <**mm/dd/yyyy**>.
- Entering 3 will cause the script to exit (i.e., nothing is cleaned up).

10 After the lag time is confirmed, the utility will display the following menu for user selection:

==== Menu for Data Type ====

1. Specify datatype(s) and version for deletion by an input file

The file format: one ESDT.Version <AST_L1BT.001 or AST_L1B*.001> per line

2. Select all datatypes for deletion

3. Quit

Select 1, 2 or 3: _

11 Enter 1, 2 or 3 as appropriate:

- Entering 1 will cause a subset of the listed ESDT.Version will be cleaned up by manual preparing an input file. Listing the selected ESDT.version in the file, one ESDT.version per line. A wildcard * can be used for the ESDT only.
- Entering 2 will cleanup all ESDT.version.
- Entering 3 will cause the script to exit (i.e., nothing is cleaned up).
- The progress and failure information will be logged in the log file.

14.9.4.2 Deleting Granules, Phase 2: Rerun unfinished Physical Cleanup

The command for rerunning uncompleted run(s) is similar to starting a new run:

➤**EcDsDeletionCleanup.pl** **-user** <db_user>

[**-batch** <number>]

[**-grbatch** <number>]

[**-phbatch** <number>]

[**-log** <log_file_name>]

The utility always checks if there were any granule(s) left over from a previous unfinished run(s). If so, leftover information will be displayed and logged, a menu will be displayed for the user to select how to run the cleanup:

Previous run was not completed, you can choose to:

1. Rerun unfinished run only

2. Start a new run which includes unfinished run(s)

3. Quit

Select 1, 2 or 3:

Select 1 to rerun unfinished run(s) will start to cleanup from the interrupted point, for instance, start to cleanup leftover XML files which had not been cleaned up in previous run(s).

Select 2 is the same as 14.6.4.1 but the cleanup will also include all leftovers in unfinished run(s).

14.10 Data Pool Maintenance Tasks

14.10.1 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 and Insert Actions.
- Managing Data Pool File Systems.
- Managing Cloud Cover Information.
- Checking the Status of Batch Inserts.
- Checking the Data Pool Insert Queue.
- Managing Data Pool Configuration Parameters and Data Pool Tuning.
- Managing Data Pool Collection Groups.
- Managing Data Pool Collections within Collection Groups.
- Managing Themes.

Other tasks are supported by scripts or utilities. For example, a Data Pool Update Expiration Script (Update Granule Utility) is available for extending the period of retention for selected science granules already in the Data Pool. There is a Data Pool cleanup utility that is typically run manually since on-line archive is deployed, but may be invoked through cron. Similarly, a utility for accumulating Data Pool access statistics is usually run in a cron job but may be invoked manually. There is a command line utility that permits operators to execute batch inserts of data from the archive into the Data Pool.

Distribution of data from the Data Pool is supported by the **HDF-EOS to GeoTIFF Conversion Tool** (**HEG**). There are two versions of HEG:

- Data Pool HEG.
- Standalone HEG.

The Standalone HEG is a tool that an end user downloads and runs on his/her own workstation to convert EOS data products on the workstation from one format to another. The Data Pool HEG, which is accessed through the DAAC **Data Pool Web Access GUI** interface, is used to convert EOS data products before they are downloaded or shipped from the DAAC.

Finally, the **Spatial Subscription Server GUI** is a major Data Pool management tool. Although used primarily by User Services or science personnel, Archive or engineering support personnel may use it to extend the period of retention in a Data Pool insert subscription, and to view statistics on the processing of events and actions by the Spatial Subscription Server.

Both the **DPM GUI** and the **Spatial Subscription Server GUI** are web applications, accessed through the Mozilla Firefox 2.0 standard web browser.

Table 14.10-1 provides an Activity Checklist for Data Pool Maintenance Tasks addressed in this section.

Table 14.10-1. Data Pool Maintenance Tasks - Activity Checklist (1 of 2)

Order	Role	Task	Section	Complete?
1	Archive Technician	Launch the DPM GUI	(P) 14.10.1.1	
2	Archive Technician	Shut Down the DPM GUI	(P) 14.10.1.2	
3	Archive Technician	Monitor Data Pool Active Insert Processes	(P) 14.10.1.3	
4	Archive Technician	View a List of Data Pool File Systems	(P) 14.10.2.1	
5	Archive Technician	Add a Data Pool File System	(P) 14.10.2.2	
6	Archive Technician	Modify a Data Pool File System	(P) 14.10.2.3	
7	Archive Technician	View cloud Cover Information	(P) 14.10.3.1	
8	Archive Technician	Add New Cloud Cover Information	(P) 14.10.3.2	
9	Archive Technician	Modify Cloud Cover Information	(P) 14.10.3.3	
10	Archive Technician	Delete Cloud Cover Information	(P) 14.10.3.4	
11	Archive Technician	Check the Status of Batch Inserts	(P) 14.10.4.1	
12	Archive Technician	Check the Data Pool Insert Queue and Cancel a Data Pool Insert Action	(P) 14.10.5.1	
13	Archive Technician	View DPM Configuration Parameter Values	(P) 14.10.6.1	
14	Archive Technician	Modify DPM Configuration Parameter Values	(P) 14.10.6.2	
15	Archive Technician	View DPM Aging Parameter Values	(P) 14.10.7.1	
16	Archive Technician	Modify DPM Aging Parameter Values	(P) 14.10.7.2	
17	Archive Technician	View Collection Groups	(P) 14.10.8.1	
18	Archive Technician	Modify Collection Groups	(P) 14.10.8.2	
19	Archive Technician	Add a Collection Group	(P) 14.10.8.3	
20	Archive Technician	Delete a Collection Group	(P) 14.10.8.4	
20	Archive Technician	Add an ECS Collection to a Collection Group	(P) 14.10.8.5	
21	Archive Technician	Modify an ECS Collection	(P) 14.10.8.6	
22	Archive Technician	View a List of Themes	(P) 14.10.9.1	
23	Archive Technician	Filter a List of Themes	(P) 14.10.9.2	

Table 14.10-1. Data Pool Maintenance Tasks - Activity Checklist (2 of 2)

Order	Role	Task	Section	Complete?
24	Archive Technician	Modify a Theme	(P) 14.10.9.3	
25	Archive Technician	Add a Theme	(P) 14.10.9.4	
26	Archive Technician	Delete a Theme	(P) 14.10.9.5	

Let's examine how the **DPM GUI** is used for Data Pool maintenance tasks. Of course, the first thing to do is launch the GUI. The procedure for launching the GUI is provided separately here and is referenced in other procedures. It applies to both full-capability and limited-capability operators. An operator's level of permission is determined when the operator logs in to the GUI using the security login prompt (Figure 14.10-1).

Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the GUIs. 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.

This lesson provides instruction in the full-capability version of the GUIs. 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.

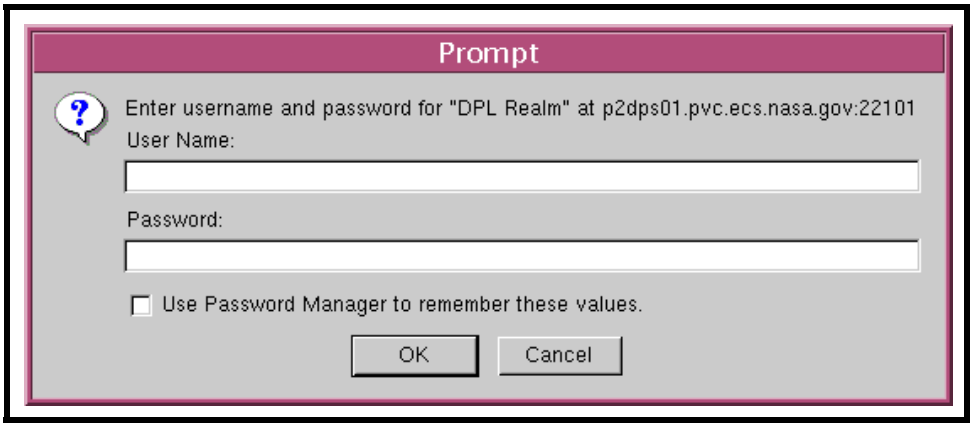

Figure 14.10-1. Security Login Prompt

Figure 14.10-2 illustrates the **DPM GUI Home Page**, from which the operator can perform some monitoring and maintenance tasks and from which there is access to other pages supporting other tasks.

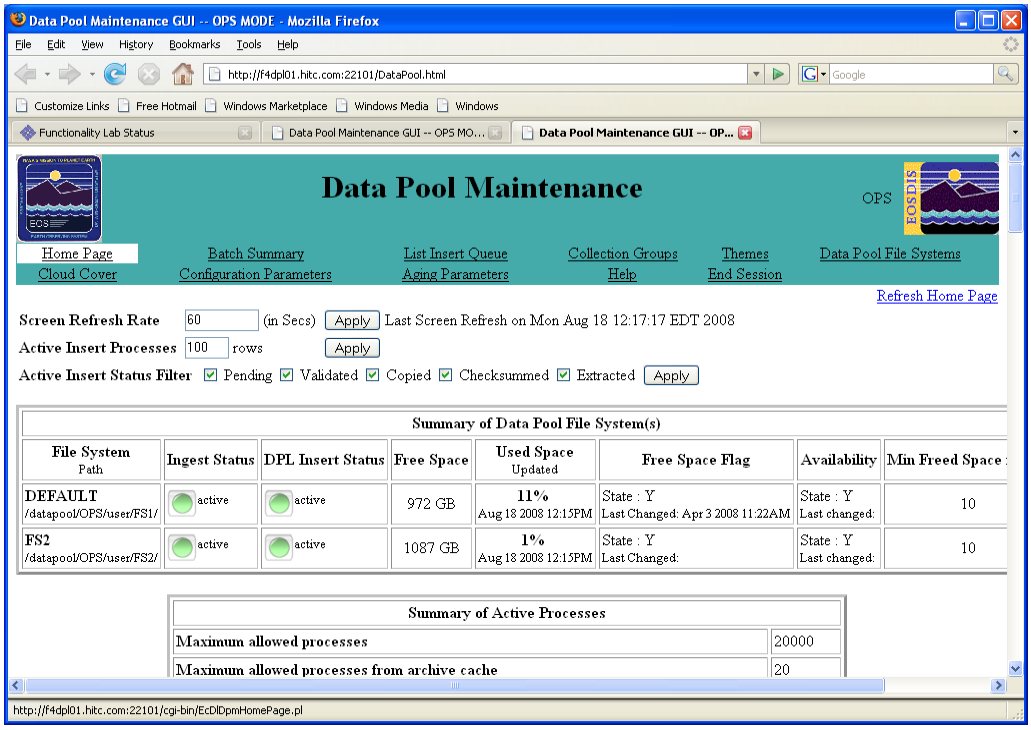

Figure 14.10-2. DPM GUI Home Page

The **DPM GUI Home Page** (Figure 14.10-2) displays the state of several parameters and allows an operator to make changes. It also lists active insert processes. Near the top of the **Home Page** are links allowing an operator to access other functions including the following items:

- **Data Pool File Systems**
- **Cloud Cover**
- **List Insert Queue**
- **Batch Summary**
- **Collection Groups**
- **Themes**
- **Configuration Parameters**
- **Aging Parameters**

There is also a **Help** page for assistance in navigation of the GUI and an **End Session** link for logging out of the GUI.

14.10.1.1 Launch the DPM GUI

1 At the UNIX command shell prompt, type **setenv DISPLAY *clientname*:0.0** and then press the **Return/Enter** key.

- For ***clientname***, use either the local terminal/workstation IP address or its machine name.

2 Start the log-in to a Firefox host by typing **/tools/bin/ssh *hostname*** (*x*4dpl01) at the UNIX command shell prompt, and press the **Return/Enter** key.

- If you receive the message, **Host key not found from the list of known hosts. Are you sure you want to continue connecting (yes/no)?** type **yes** ("**y**" alone does not work).

- If you have previously set up a secure shell passphrase and executed **sshremote**, a prompt to **Enter passphrase for RSA key '<*user@localhost*>'** appears; continue with Step 3.

- If you have not previously set up a secure shell passphrase, go to Step 4.

3 If a prompt to **Enter passphrase for RSA key '<*user@localhost*>'** appears, type your ***Passphrase*** and then press the **Return/Enter** key. Go to Step 5.

4 At the **<*user@remotehost*>'s password:** prompt, type your ***Password*** and then press the **Return/Enter** key.

- You are logged in and a UNIX command shell prompt is displayed.

5 Type **Firefox &** then press **Return/Enter**.

- It may be necessary to type the path as well as the Firefox command (e.g., **/tools/bin/Firefox &**).

- It may be necessary to respond to dialogue boxes, especially if the browser is already being used by someone else who has logged in with the same user ID.

- The Firefox web browser is displayed.

6 If a bookmark has been created for the DPM GUI, select the appropriate bookmark from those listed on the browser.

- The security login **Prompt** is displayed.

7 If no bookmark has been created for the **DPM GUI**, type **http://*host*:*port*/*path*** in the browser's **Location (Go To)** field then press **Return/Enter**.

- For example: **http://x4dpl01.daac.ecs.nasa.gov:54321/DataPool.html**

- The security login **Prompt** is displayed.

8 Type the appropriate user name in the **User Name** box of the security login **Prompt**.

9 Type the appropriate password in the **Password** box of the security login **Prompt**.

NOTE: If the security login prompt reappears after the first time the user name and password have been entered (and the **OK** button has been clicked), it may not be due to a data entry problem. Try again to log in using the same user name and password. Sometimes it is necessary to enter the user name and password for the GUI more than once.

10 Click on the appropriate button from the following selections:

- **OK** - to complete the log-in and dismiss the dialogue box.
  - The dialogue box is dismissed.
  - The **DPM GUI Home Page** is displayed (see Figure 14.10-3).

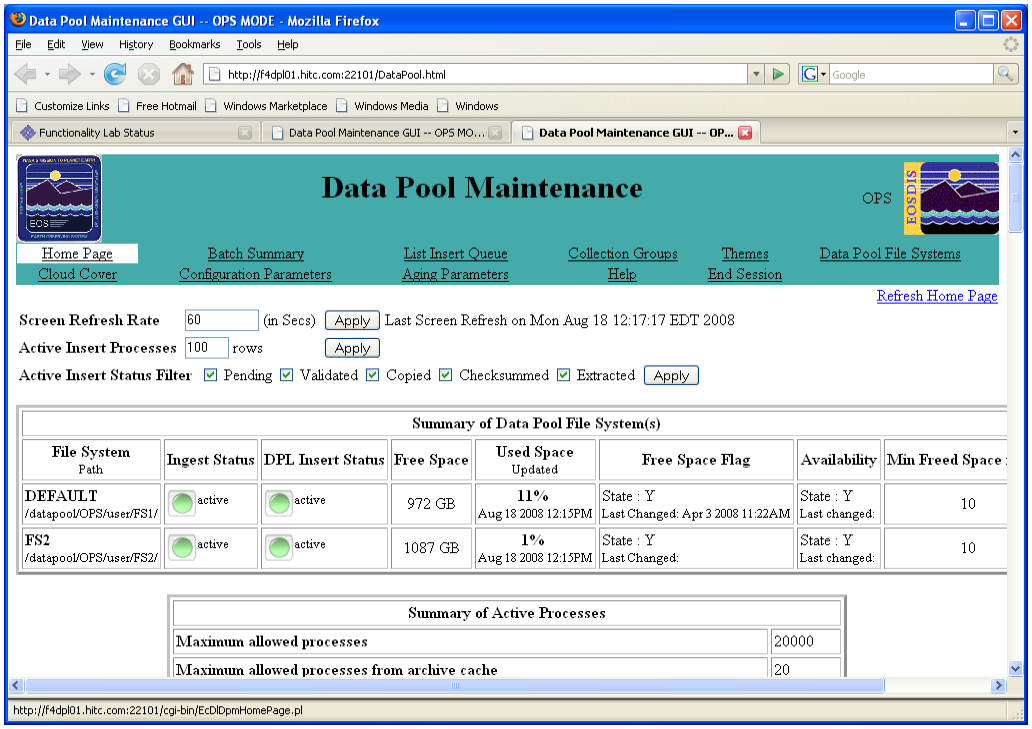

Figure 14.10-3. DPM GUI Home Page

- **Cancel** - to dismiss the dialogue box without logging in.
  - The dialogue box is dismissed.
  - The Firefox web browser is displayed.

At some point it becomes necessary to shut down the **DPM GUI** (end a **DPM GUI** session). The procedure that follows is recommended and is applicable to both full-capability and limited-capability operators.

14.10.1.2 Shut Down the DPM GUI (End a DPM GUI Session)

---

1 Click on the **Home Page** link at the top of the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **End Session** link at the top of the **Home Page**.

- A log-out page containing the following message is displayed.

"Click on Button Below to End Session:

THIS WOULD ALSO SHUT DOWN THE BROWSER:"

NOTE: To abort the log-out and return to the **Home Page**, click on the browser **Back** button.

3 Click on the **ShutDown** button.

- The Firefox browser is dismissed.

You may wish to keep an instance of the **DPM GUI** displayed to monitor Data Pool Active Insert Processes. The procedure for using the **DPM GUI** to monitor Data Pool active insert processes is applicable to both full-capability and limited-capability operators.

14.10.1.3 Monitor Data Pool Active Insert Processes

1 Launch the **DPM GUI**.

- The **Home Page** is displayed.

2 Observe information displayed on the **DPM GUI Home Page**.

- The **Home Page** has the following links for access to Data Pool maintenance function pages:
  - **Data Pool File Systems**
  - **Cloud Cover**
  - **List Insert Queue**
  - **Batch Summary**
  - **Collection Groups**
  - **Themes**
  - **Configuration Parameters**
  - **Aging Parameters**
  - **End Session**
- The **Home Page** has a **Summary of Data Pool File Systems** with the following columns:
  - **File System** (representing an existing Data Pool file system).
  - **Ingest Status**
  - **DPL Insert Status**

  - **Free Space**
  - **Used Space**
  - **Free Space Flag** (if set to "Y," free space is available for inserts; "N" means free space is not available).
  - **Availability** (if set to "Y," the file system is currently available for Data Pool insert; "N" means the file system is not available for Data Pool insert).
  - **Min Freed Space in MB** (value that represents the minimum amount of freed space in the file system in megabytes; it is an amount of space must remain free in order to make the file system available for insert).
- The **Home Page** has a **Summary of Active Processes** with the following rows:
  - **Maximum allowed processes**
  - **Maximum allowed processes from archive cache**
  - **Maximum allowed processes from archive tape**
  - **Total number of active insert processes running**
  - **Total number of validated active insert processes running**
  - **Total number of pending active insert processes running**
  - **Number of active insert processes using archive cache**
  - **Number of active insert processes using archive tape**
- The **Home Page** has a table of **List of Active Insert Processes (Rows X)** showing the following columns of detailed information for each process:
  - **Unix ProcessId** (UNIX process identifier).
  - **EcsID** (ECS identifier or Granule ID for the granule being processed).
  - **Collection** (to which the granule belongs).
  - **Version** (for the collection to which the granule belongs).
  - **StartTime** (time at which the insert processing started).
  - **StatusTime** (time at which the status listed in the Status column was achieved).
  - **Status** (current state of the insert process).
  - **Archive Cache** [availability (Y or N) of the granule being processed].
  - **Retries** [number of attempts by the process to recover from retryable errors (e.g., Data Pool disk temporarily unavailable, Data Pool directory does not exist, or database temporarily unavailable)].

NOTE: The system is designed for rapid insertion of data into the Data Pool by quickly processing data that are available in cache, such as data that are staged for archiving. If the insert processing is delayed and the data are removed from cache, the Data Pool insert is likely to fail.

3 To obtain an immediate screen refresh, click on the **Refresh Home Page** link near the upper right corner of the display.

- The displayed data are updated.

NOTE: The screen refreshes automatically at intervals determined by the number of seconds specified in the **Screen Refresh Rate** field.

4 To change the automatic screen refresh rate first type the desired number of seconds between refreshes in the **Screen Refresh Rate** text entry box.

5 To complete changing the automatic screen refresh rate click on the **Apply** button adjacent to the **Screen Refresh Rate** text entry box.

- The **Screen Refresh Rate** is changed to the new value.

6 To change the number of active insert processes displayed at a time in the **List of Active Insert Processes** table on the **Home Page** first type the desired number of rows to be displayed in the **Active Insert Processes** text entry box.

7 To complete changing the number of active insert processes displayed at a time in the **List of Active Insert Processes** table on the **Home Page** click on the **Apply** button adjacent to the **Active Insert Processes** text entry box.

- The number of active insert processes displayed at a time in the **List of Active Insert Processes** table is changed to the new value.

8 To filter the list of Active Insert processes in the **List of Active Insert Processes table** on the **Home Page** based on the Active Insert's status. Click the checkbox for any combination of the five possible filters.

9 To complete filter(s) selection click on the **Apply** button adjacent to the **Active Insert Status Filter** checkboxes.

14.10.2 Data Pool File Systems

Figure 14.10-4 illustrates the Data Pool **File System Information** page that allows both full-capability and limited-capability operators to view a list of Data Pool file systems and obtain information on **Free Space Flag**, **Availability** for insert, and **Minimum Freed Space**. From this page, the full-capability operator is able to configure a new file system or modify an existing file system (which may include assigning Availability and/or No Free Space status).

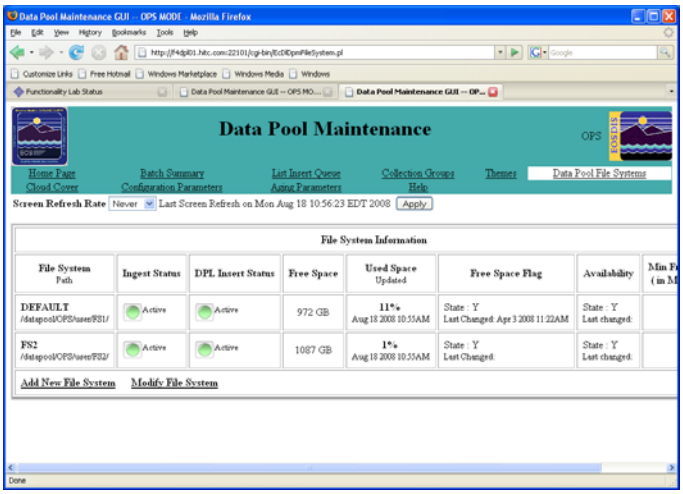

Figure 14.10-4. Data Pool File System Page

14.10.2.1 View a List of Data Pool File Systems

1 Launch the **DPM GUI**.

- The **DPM GUI Home page** is displayed.

2 Click on the **Data Pool File Systems** link.

- The **File System Information** page is displayed (see Figure 14.10-4).

3 Observe data displayed on the **File System Information** page.

- The table on the File System Information page has columns containing the following types of Data Pool file system information:
  - **File System Path**
  - **Ingest Status**
  - **DPL Insert Status**
  - **Free Space**
  - **Used Space Updated**
  - **Free Space Flag**
  - **Availability**
  - **Min Freed Space (in Megabytes)**
- The following links are available on the **File System Information** page:
  - **Add New File System**
  - **Modify File System**

4 Clicking on the **Add New File System** link takes the full-capability operator to the **Add New File System** page shown in Figure 14.10-5. The operator needs to add data in the following five fields:

- [File System] **Label**: a label representing an existing Data Pool file system;
- **Absolute Path**: the path to the directory where the file system is located (the basic ftp root path is provided and the operator completes the path name if necessary);
- **Free Space Flag**: a value that needs to be set to either "ON" or "OFF" (ON means free space is available for inserts; OFF means free space is not available);
- **Availability**: a value that needs to be set to either "YES" or "NO" (YES means the file system is currently available for Data Pool insert; NO means the file system is not available for Data Pool insert);
- **Min Freed Space (in Megabytes)**: an integer value that represents the minimum amount of freed space in the file system in megabytes; it is an amount of space must remain free in order to make the file system available for insert.

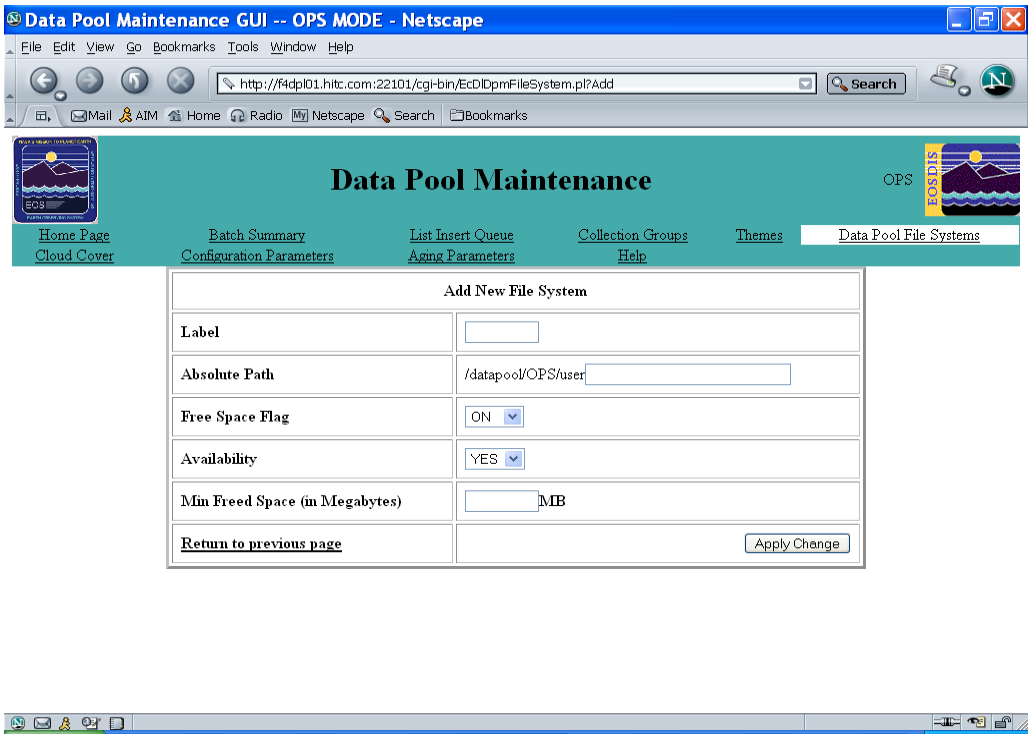

Figure 14.10-5. Add New File System Page

14.10.2.2 Add a Data Pool File System

1 Launch the **DPM GUI**.

- The **DPM GUI Home page** is displayed.

2 Click on the **Data Pool File Systems** link.

- The **File System Information** page is displayed.

3 Click on the **Add New File System** link at the bottom of the list of file systems (scrolling down if necessary).

- The **Add New File System** page is displayed (see Figure 14.10-5).

4 Type the desired file system label in the **Label** field.

- Enter a unique name with no more than 25 characters.

5 Type the desired path in the **Absolute Path** field.

- The basic ftp root directory path is shown adjacent to the text entry box; data entered in the box will be appended to the base path shown.

6 To display free space flag options click on the **Free Space Flag** option button.

- **Free Space Flag** options are displayed (i.e., **ON** and **OFF**).

7 To display availability options click on the **Availability** option button.

- **Availability** options are displayed (i.e., **YES** and **NO**).

8 To select an availability option click on the appropriate choice from the option list.

- YES should be selected if the file system is currently available for inserts.
- **NO** should be selected if the file system is not currently available for inserts.

9 Type the desired value for minimum freed space (in megabytes) in the Min Freed Space (in Megabytes) field.

- **Min Freed Space** indicates how much space needs to be available to keep the file system available for insert.

10 Click on the **Apply Change** button.

- The file system information is entered in the ECS database aim schema.
- The **File System Information** page is displayed with the new file system information.

The **DPM GUI** may be used to modify a Data Pool file system. This is useful if the Absolute Path, Free Space Flag, Availability (for Insert), and/or Min. Freed Space for a particular Data Pool file system need to be corrected or updated. Selecting the **Modify File System** link takes the full-capability operator to the **Modify File System Information** page shown in Figure 14.10-6. The operator can change the Absolute Path, Free Space Flag, Availability flag, or the Min Freed Space on this page. There are check boxes associated with each file system. The operator can change multiple file systems at one time by checking the desired file systems' checkboxes and clicking on the **Apply Change** button.

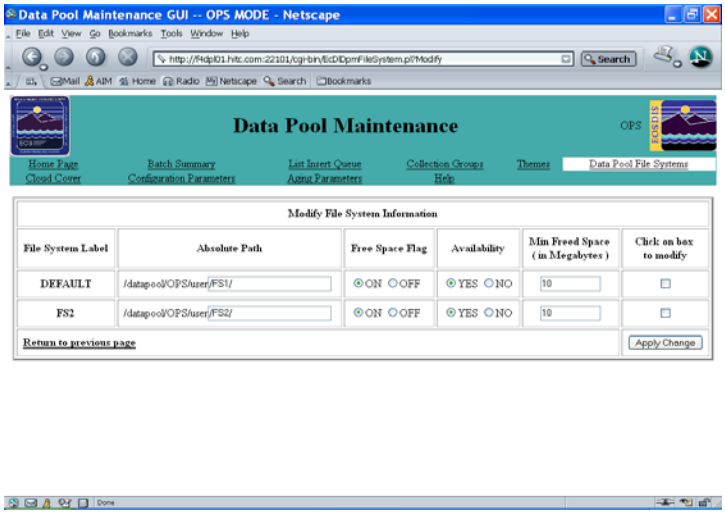

Figure 14.10-6. Modify File System Information Page

14.10.2.3 Modify a Data Pool File System

1 Launch the **DPM GUI**.

- For detailed instructions refer to the Launch the DPM GUI procedure (previous section of this lesson).
- The **DPM GUI Home page** is displayed.

2 Click on the **Data Pool File Systems** link.

- The **File System Information** page is displayed.

3 Click on the **Modify File System** link at the bottom of the list of file systems (scrolling down if necessary).

- The **Modify File System Information** page is displayed (see Figure 14.10-6).

4 To change the absolute path for a file system type the desired path in the **Absolute Path** field for the file system.

- The basic ftp root directory path is shown above the text entry box; data entered in the box will be appended to the base path shown.

5 To change a file system's free space flag setting click on the appropriate button in the **Free Space Flag** column.

- The following choices are available:
  - **ON**
  - **OFF**

6 To change the setting for a file system's availability for data insert click on the appropriate button in the **Availability** column.

- The following choices are available:
  - YES
  - NO

7 To change the minimum freed space for a file system type the desired value (in megabytes) in the appropriate **Min Free Space (in Megabytes)** field.

8 Click in the check box at the end of the row containing file system information to be modified.

- The selected file system information is marked for subsequent modification.

9 Repeat Steps 4 through 8 for any additional file systems to be modified.

10 Click on the **Apply Change** button.

- The revised file system information is entered in the ECS database aim schema.
- The **File System Information** page is displayed with the modified file system information.

14.10.3 Cloud Cover

Both full-capability and limited-capability operators can view existing cloud cover information in the ECS database aim schema by clicking on the **Cloud Cover** link shown in Figure 14.10-2. The link takes the operator to the **Cloud Cover Information** page shown in Figure 14.10-7. The page displays the information concerning the sources of cloud cover; i.e., the **Source Type**, **Source Name**, and **Source Description**.

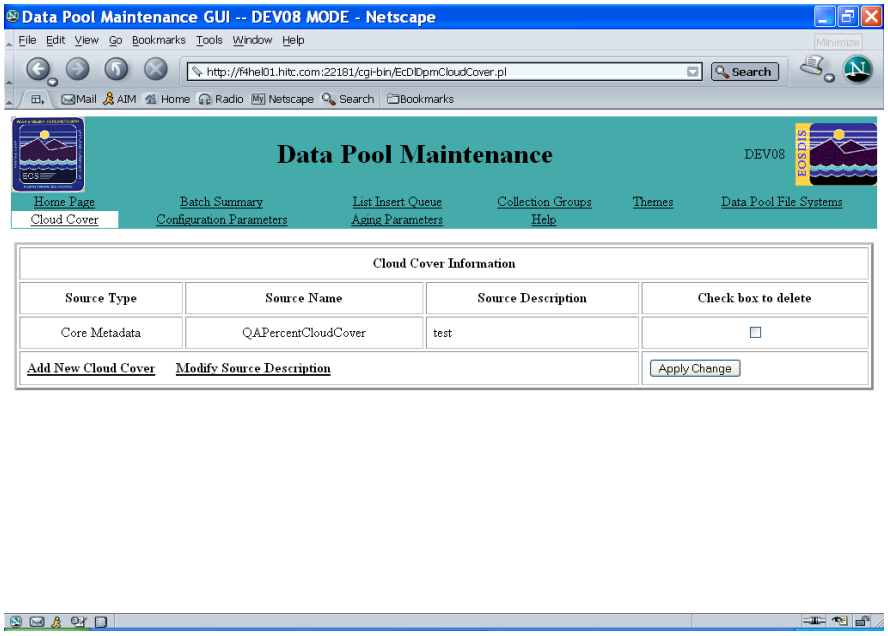

Figure 14.10-7. Cloud Cover Information Page

14.10.3.1 View Cloud Cover Information

1 Launch the **DPM GUI**.

- The **DPM GUI Home page** is displayed.

2 Click on the **Cloud Cover** link.

- The **Cloud Cover Information** page is displayed (see Figure 14.10-7).

3 Observe data displayed on the **Cloud Cover Information** page.

- The table on the **Cloud Cover Information** page has columns containing the following types of cloud cover information:
  - **Source Type**
  - **Source Name**
  - **Source Description**
  - **Check box to delete**
- The following links are available on the **Cloud Cover Information** page:
  - **Add New Cloud Cover**
  - **Modify Source Description**
- An **Apply Change** button is available for deleting cloud cover information from the ECS database aim schema.

The full-capability operator can add a new cloud cover source by clicking on the **Add New Cloud Cover** link shown in Figure 14.10-7. The link takes the operator to the **Add New Cloud Cover Information** page shown in Figure 14.10-8. After selecting the Source Type from an option list and entering the Source Name and Source Description, the operator clicks on the **Apply Change** button. All Source Names are validated against the Inventory database. The new cloud cover source is added to the ECS database aim schema and the **Cloud Cover Information** page is refreshed.

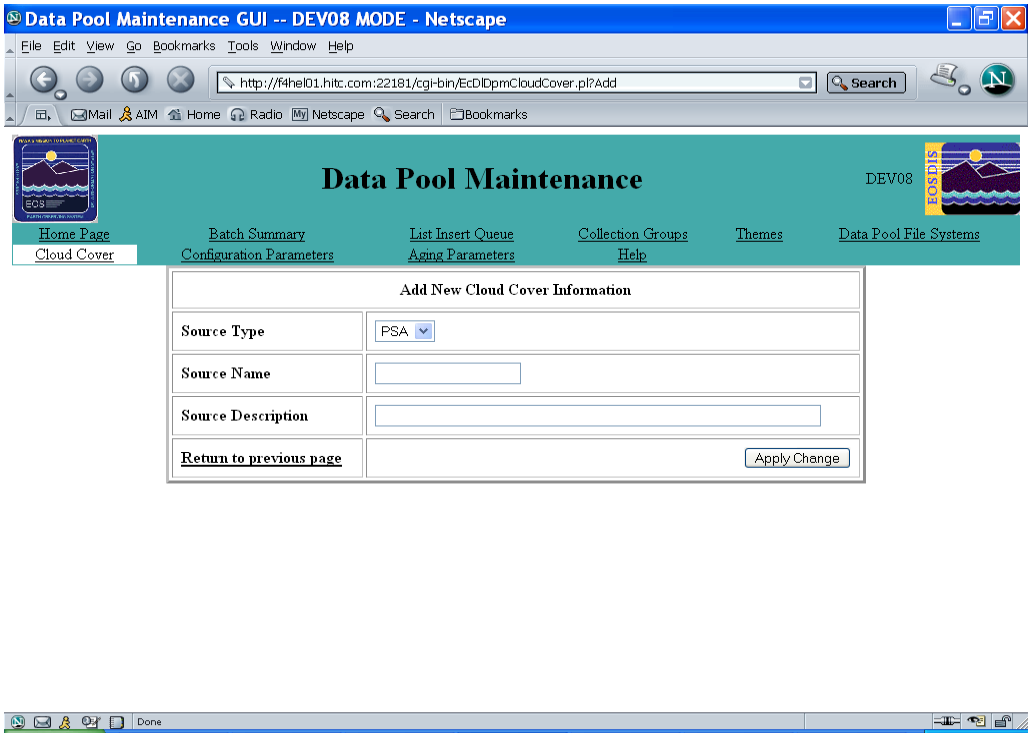

Figure 14.10-8. Add New Cloud Cover Information Page

14.10.3.2 Add New Cloud Cover Information

1 Launch the **DPM GUI**

- The **DPM GUI Home Page** is displayed.

2 Click on the **Cloud Cover** link.

- The **Cloud Cover Information** page is displayed.

3 Click on the **Add New Cloud Cover** link at the bottom of the **Cloud Cover Information** page (scrolling down if necessary).

- The **Add New Cloud Cover Information** page is displayed (see Figure 14.10-8).

4 To view the source type options click on the **Source Type** option button.

- Source type options are displayed (e.g., **Core Metadata** and **PSA**).

5 To select a source type click on the appropriate source type from the option list.

- If **Core Metadata** was selected, the **Source Name** field is automatically filled in.

6 To specify a source name type the desired name in the **Source Name** field.

- If **Core Metadata** was selected as the source type, the **Source Name** field is automatically filled in and cannot be edited.

7 Type a description of the cloud cover information in the **Source Description** field.

- The description may be up to 255 characters in length.

8 Click on the **Apply Changes** button.

- The source name is validated against the Inventory database.
- The new cloud cover information is entered in the ECS database aim schema.
- The **Cloud Cover Information** page is displayed with the new cloud cover information.

The full-capability operator can modify an existing cloud cover Source Description by clicking on the **Modify Source Description** link shown in Figure 14.10-7. The link takes the operator to the **Modify Source Description** page shown in Figure 14.10-9. The operator can modify the Source Descriptions only. (To modify a Source Type or Source Name the operator must delete the applicable cloud cover information row and add a new one with the correct information.) After making desired changes, the operator clicks on the checkbox(es) adjacent to the source(s) to be modified and clicks on the **Apply Change** button. The changes are applied to the ECS database aim schema and the **Cloud Cover Information** page is refreshed.

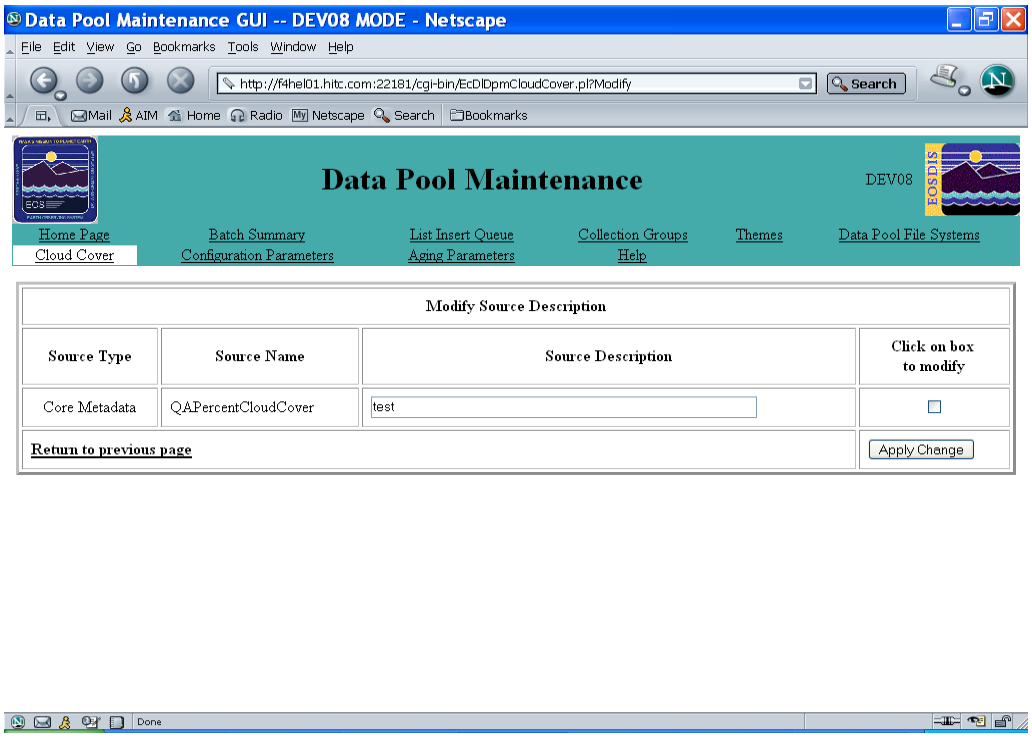

Figure 14.10-9. Modify Source Description Page

14.10.3.3 Modify Cloud Cover Information

1 Launch the **DPM GUI**

- For detailed instructions refer to the **Launch the DPM GUI** procedure (previous section of this lesson).
- The **DPM GUI Home Page** is displayed.

2 Click on the **Cloud Cover** link.

- The **Cloud Cover Information** page is displayed.

3 Click on the **Modify Source Description** link at the bottom of the **Cloud Cover Information** page (scrolling down if necessary).

- The **Modify Source Description** page is displayed (see Figure 14.10-9).

4 To start the process of changing a source description type the desired description in the appropriate **Source Description** field.

5 Click in the check box at the end of the row containing modified source description information.

- The source description is marked for subsequent modification. (A check mark is displayed in the selected check box.)

6 Repeat Steps 4 and 5 for any additional source descriptions to be modified.

7 Click on the **Apply Change** button.

- The revised source description information is entered in the ECS database aim schema.
- The **Cloud Cover Information** page is displayed with the modified cloud cover information.

14.10.3.4 Delete Cloud Cover Information

1 Launch the **DPM GUI**

- The **DPM GUI Home Page** is displayed.

2 Click on the **Cloud Cover** link.

- The **Cloud Cover Information** page is displayed.

3 Click in the check box(es) at the end of the row(s) containing the **Check box to delete**.

- The selected source(s) is (are) marked for subsequent deletion.

4 Click on the **Apply Change** button.

- The selected source(s) is (are) deleted from the ECS database aim schema.
- If any cloud cover information is associated with any collection, it will not be deleted.
- The **Cloud Cover Information** page is displayed with the modified cloud cover information.

14.10.4 Batch Summary

Figure 14.10-10 illustrates the **Batch Summary** page, which is accessible from the **Batch Summary** link on the **DPM GUI Home Page** (Figure 14.10-2). The **Batch Summary** page displays information on inserts made with the command line utility that permits operators to execute batch inserts of data from the archive into the Data Pool. In addition, it displays a summary of the status of Data Pool inserts for each batch label. Insert statuses include "new," "completed," "failed," "retry," and "canceled." The information is accessible to both full-capability and limited-capability operators.

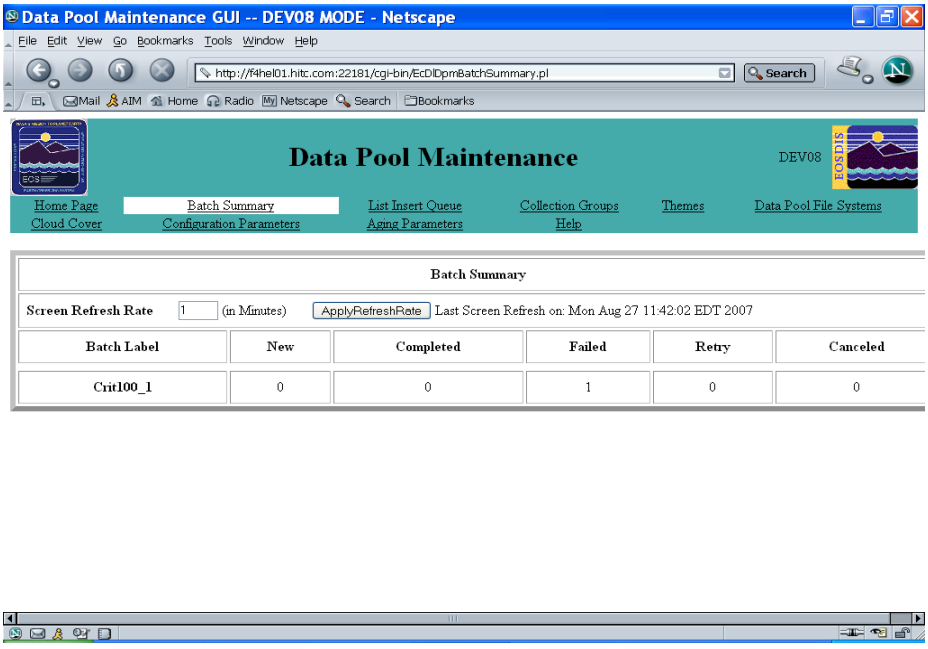

Figure 14.10-10. Batch Summary Page

The **DPM GUI** provides a page to display a summary of the status of batch Data Pool inserts made using the batch insert utility. The procedure that follows is applicable to both full-capability and limited-capability operators.

14.10.4.1 Check the Status of Batch Inserts

1 Launch the **DPM GUI**

- The **DPM GUI Home Page** is displayed.

2 Click on the **Batch Summary** link.

- The **Batch Summary** page is displayed (see Figure 14.10-10).

3 Observe data displayed on the **Batch Summary** page.

- The table on the **Batch Summary** page has columns containing the following types of information:
  - **Batch Label**
  - **New** (number of inserts for the label that are new)
  - **Completed** (number of inserts for the label that have been completed)
  - **Failed** (number of inserts for the label that have failed)
  - **Retry** (number of inserts for the label that have been retried)
  - **Canceled** (number of inserts for the label that have been canceled)

4 To change the automatic screen refresh rate first type the desired number of minutes between refreshes in the **Screen Refresh Rate** text entry box.

5 To complete changing the automatic screen refresh rate click on the **ApplyRefreshRate** button adjacent to the **Screen Refresh Rate** text entry box.

- The **Screen Refresh Rate** is changed to the new value.

6 Return to Step 3.

14.10.5 List Insert Queue

Figure 14.10-11 illustrates the **List Insert Queue** page, which is accessible from the **List Insert Queue** link on the **DPM GUI Home Page** (Figure 14.10-2). The page provides a list with detailed information on inserts left to process. The information is accessible to both full-capability and limited-capability operators.

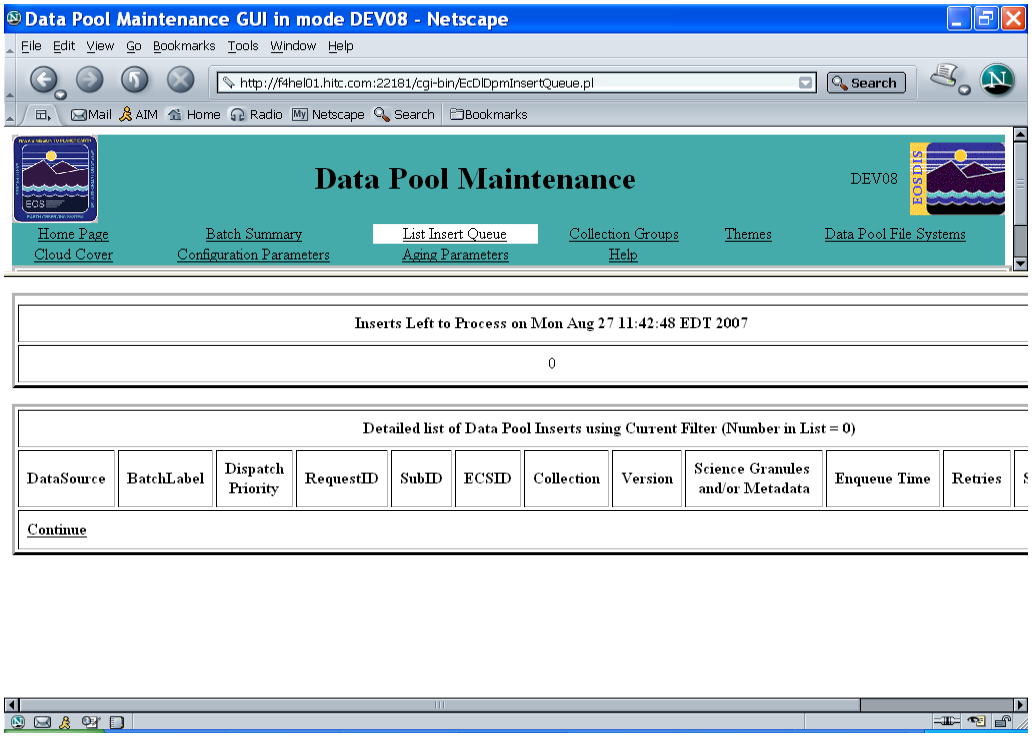

Figure 14.10-11. List Insert Queue Page

The **List Insert Queue** page of the **DPM GUI** provides a list of Data Pool inserts left to process that both full-capability and limited-capability operators can view. It also provides for each listed insert a check box permitting a full-capability operator to mark queued inserts for cancellation, and an **Apply Change** button to implement the cancellation.

14.10.5.1 Check the Data Pool Insert Queue and Cancel a Data Pool Insert Action

1 Launch the **DPM GUI**

- The **DPM GUI Home Page** is displayed.

2 Click on the **List Insert Queue** link.

- The **List Insert Queue** page is displayed (see Figure 14.10-11).

3 Observe data displayed on the **List Insert Queue** page.

- The **List Insert Queue** page shows how many inserts are left to process as of the current date.
- The table on the **List Insert Queue** page has columns containing the following types of insert queue information:
  - **Data Source**

- **Batch Label**
- **Dispatch Priority**
- **RequestID**
- **SubID** (subscription identifier of the subscription selected by the software for processing)
- **ECSID** (ECS identifier or Granule ID for the granule to be processed)
- **Collection** (to which the granule belongs)
- **Version** (for the collection to which the granule belongs)
- **Science Granules and/or Metadata** (indication of whether the insert is to include science granules and metadata or just the metadata)
- **Enqueue Time** (time when the insert was placed in the insert queue)
- **Retries** [number of attempts by the process to recover from retryable errors (e.g., Data Pool disk temporarily unavailable, Data Pool directory does not exist, ECS database aim schema temporarily unavailable)]
- **Status**
- **Click on Box to Cancel** (containing a check box to mark the insert for cancellation)

NOTE: There may be multiple subscriptions specifying insertion of specific data into the Data Pool, but only one insert is needed; therefore, only one of the subscriptions serves as the basis for the insert action. The **SubID** is of no particular significance to an operator and may safely be ignored.

- There is an **Apply Change** button at the bottom of the page for implementing cancellations.
- There is a **Continue** link at the bottom of the page; if there are more inserts than can be displayed in the space of one page, the **Continue** link displays the next page of the list.

4 To cancel an insert, first click on the check box at the end of the row of information for the insert to be canceled.

- The insert is marked for subsequent cancellation.
- The check box for the selected insert is filled to indicate selection.

5 Repeat Step 4 for any additional insert to be canceled.

6 To implement the cancellation of insert(s) click on the **Apply Change** button.

- A confirmation message is displayed; it asks "**Are you ready to cancel the insert for** . . ." and there are links displayed for **Yes, cancel insert** and **No**, return to previous page.

7 To confirm cancellation, click on the **Yes, cancel insert** link.

- The **List Insert Queue** page is displayed with the canceled insert(s) removed and the count of inserts left to process reduced by the number of inserts canceled.

14.10.6 Configuration Parameters

Figure 14.10-12 shows the **List of Configuration Parameters** page, which is accessible from the **Configuration Parameters** link on the **DPM GUI Home Page** (Figure 14.10-2). The page lists numerous Data Pool configuration parameters with their settings and a brief description of each. The information is accessible to both full-capability and limited-capability operators.

For each parameter there is a text box or option list in the **Parameter Value** column so the full-capability operator can assign a new value to the parameter when necessary. In addition, there is a check box that the full-capability operator uses to mark parameters with values to be modified. At the bottom of the page is an **Apply Change** button for implementing the change(s).

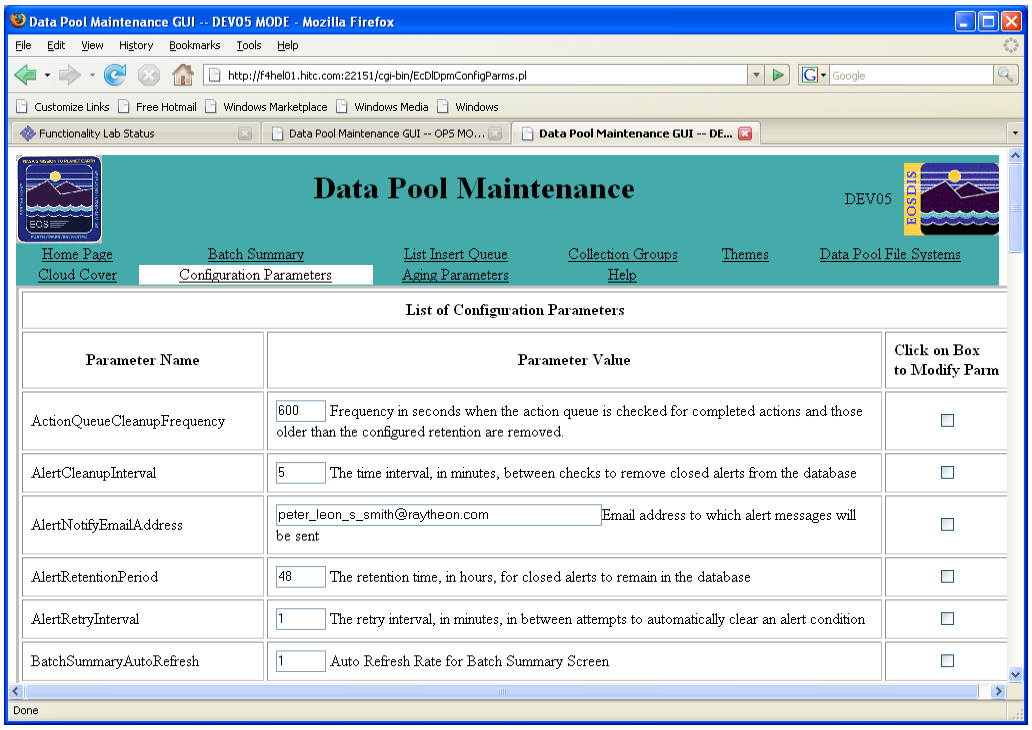

Figure 14.10-12. List of Configuration Parameters Page

The following parameters are examples of the types of parameters in the ECS database aim schema that the full-capability operator can modify:

- ActionQueueCleanupFrequency - frequency in seconds when the action queue is checked for completed actions and those older than the configured retention period are removed.
- AlertCleanupInterval - The time interval, in minutes, between checks to remove closed alerts from the database.
- AlertNotifyEmail Address - Email address to which alert messages will be sent.
- AlertRetentionPeriod - The retention time, in hours, for closed alerts to remain in the database.
- AlertRetryInterval - The retry interval, in minutes, in between attempts to automatically clear an alert condition.
- BatchSummaryAutoRefresh – autorefresh rate for the Batch Summary page.
- ChecksumPercent - The percentage of science files that will have checksums verified or computed.
- Clean703Orders -Flag indicating whether DPL should clean up order only granules.
- DPLRetentionPatchInstalled - The existence of this configuration parameter means that the DPL Retention patch has been installed and granules will not expire from the Data Pool.
- DatabaseRetryCount - The number of times a retryable database error may be retried before being considered failed.
- Database RetryInterval - The number of seconds to wait between retries of a retryable database error.
- DefaultRetentionPeriod - default retention period in days for all Data Pool Insert Actions.
- DefaultRetentionPriority - default retention priority for all Data Pool Inserts actions. The range of valid values is 1 – 255.
- DeleteCompletedActionsAfter - time in minutes that operators let completed actions stay in the insert action queue before making them eligible for removal. The delay is intended to provide the operator with some ability to check on past actions. The time period should not be too long.
- DisplayAIPChunkSize - number of rows to return per chunk for the Active Insert Processes list.
- FileSystemCheckInterval - The time interval, from 1 to 10 minutes, in between attempts to automatically clear a Data Pool file system alert condition.
- FileSystemRefreshRate - Time in minutes before the File Systems Page Refreshes.

- Filter ChecksumAIP - Show Checksummed Active Insert Processes on the Data Pool Maint. GUI page.
- FilterCopiedAIP - Show Copied Active Insert Processes on the Data Pool Maint. GUI page.
- FilterExtractedAIP - Show Extracted Active Insert Processes on the Data Pool Maint. GUI page.
- FilterPendingAIP - Show Pending Active Insert Processes on the Data Pool Maint. GUI page.
- FilterValidAIP - Show Validated Active Insert Processes on the Data Pool Maint. GUI page.
- FreeSpaceResumePercent - The percentage of free space required before a Data Pool file system full condition may be cleared.
- GranuleLockRetentionPeriod - The age in hours that determines when a granule lock should be considered stale
- GranuleOmLockRetentionPeriod - The age in minutes that determines when a granule lock by OMS should be considered stale
- HEGCleanupAge – HDF-EOS to GeoTIF Converter (HEG) cleanup age in days.
- IdleSleep - number of seconds to sleep when there is nothing to do (Obsolete in 7.20).
- InCacheTimeLimit - maximum time in minutes that operators are willing to wait for a Data Pool Insert Utility (DPIU) process to complete when its files are in cache. When the time limit is reached, the Data Pool Action Driver (DPAD) kills the process and retries the action (Obsolete in 7.20)
- InsertRetryWait - number of seconds to wait before an insert that failed should be resubmitted (if it can be retried).
- MAX_READ_DRIVES_x0xxgnn – (multiple parameters as necessary) maximum number of simultaneous tape drives used for the specified archive.
- MFSOnInsert – specifies whether or not (YES or NO) DPAD should use the Multiple File System table (Obsolete in 7.20).
- MaxConcurrentBandExtract – The maximum number of concurrent Band Extraction operations.
- MaxConcurrentDPIUThreads – The concurrency limit for the DPIU processing queue.
- MaxConcurrentEventThreads – The concurrency limit for the DPAD event processing queue.

- MaxConcurrentPublish – The maximum number of concurrent Data Pool publication operations.
- MaxConcurrentReadsPerTape – The maximum number of concurrent tape read (stage) operations for a single tape.
- MaxConcurrentRegister - The maximum number of concurrent Data Pool registration operations.
- MaxConcurrentValidate – The maximum number of concurrent request validation operations.
- MaxConsecutiveErrors - The maximum number of consecutive errors or timeout conditions for a service before an alert will be raised.
- MaxInsertRetries - maximum number of times an insert should be tried again (-1 means forever).
- MaxReadDrivesPerArchive - maximum number of tape drives in use simultaneously.
- MaxTapeMountPerRequest - maximum number of tape mounts allowed per request.
- NewActionCheckFrequency – number of seconds before checking for new actions. DPAD always checks to determine whether we are out of actions that can be dispatched, so unless getting things queued up in memory is urgent, this could be a time interval of minutes.
- NumOfAllowedCacheProcesses - maximum number of insert processes that require access to cache (Obsolete in 7.20).
- NumOfAllowedInsertProcesses - maximum number of insert processes running at any time.
- NumOfAllowedNonCacheProcesses - maximum number of insert processes that require access to tape (Obsolete in 7.20).
- OnTapeTimeLimit - maximum time in hours operators are willing to wait for a DPIU process to complete when its files are not in cache. After the time limit, DPAD kills the process and retries the action.
- OrderOnlyFSLabel - order-only file system label.
- RefreshRate - DPM Home Page refresh rate in seconds.
- RunAwayCheckFrequency – number of seconds before checking again for runaway processes. It is recommended that RunAwayCheckFrequency not be much less than InCacheTimeLimit.
- RunawayDuration - maximum number of seconds to wait for an insert to complete before considering it a runaway (Obsolete in 7.20).

- SizeOfInsertQueueList - number of Data Pool Insert Queue entries that the DPM GUI can display on a page at any one time.
- StartUpWait - number of seconds to delay start-up while trying to clean out leftover DPIU processes (Obsolete in 7.20).

14.10.6.1 View DPM Configuration Parameter Values

1 Launch the **DPM GUI**

- The **DPM GUI Home Page** is displayed.

2 Click on the **Configuration Parameters** link.

- The **List of Configuration Parameters** page is displayed (see Figure 14.10-13).

3 Observe data displayed on the **List of Configuration Parameters** page.

- The table on the **List of Configuration Parameters** page has columns containing the following types of Data Pool configuration information:
  - **Parameter Name**
  - **Parameter Value** (including an entry field with current value, followed by a brief description of the parameter)
  - **Click on Box to Modify Parm** (containing a check box to mark the parameter for change)
- The rows in the table indicate the current values and descriptions of the following types of parameters:
  - ActionQueueCleanupFrequency
  - AlertCleanupInterval
  - AlertNotifyEmailAddress
  - AlertRetentionPeriod
  - AlertRetryInterval
  - BatchSummaryAutoRefresh
  - ChecksumPercent
  - Clean703Orders
  - DPLRetentionPatchInstalled
  - DatabaseRetryCount
  - DatabaseRetryInterval
  - DefaultRetentionPeriod
  - DefaultRetentionPriority

- DeleteCompletedActionsAfter
- DisplayAIPChunkSize
- FileSystemCheckInterval
- FileSystemRefreshRate
- FilterChecksumAIP
- FilterCopiedAIP
- FilterExtractedAIP
- FilterPendingAIP
- FilterValidAIP
- FreeSpaceResumePercent
- GranuleLockRetentionPeriod
- GranuleOMLockRetentionPeriod
- HEGCleanupAge
- InsertRetryWait
- MAX_READ_DRIVES_x0xxgnn
- MaxConcurrentBandExtract
- MaxConcurrentDPIUThreads
- MaxConcurrentEventThreads
- MaxConcurrentPublish
- MaxConcurrentReadsPerTape
- MaxConcurrentRegister
- MaxConcurrentValidate
- MaxConsecutiveErrors
- MaxInsertRetries
- MaxReadDrivesPerArchive
- MaxTapeMountPerRequest
- NewActionCheckFrequency
- NumOfAllowedInsertProcesses
- OnTapeTimeLimit

- OrdersOnlyFSLabel
- RefreshRate
- SizeOfInsertQueueList

- There is an **Apply Change** button at the bottom of the page for implementing changes.

Although most of the parameters managed on the **List of Configuration Parameters** page are not likely to be changed frequently, the operator may want to change some of them for tuning the Data Pool. Data Pool tuning parameters can be used to help meter the flow of data into the Data Pool and to adjust retention priority and duration to maintain optimum usage of Data Pool storage. To determine the best settings, it is necessary to monitor Data Pool inserts and disk space and adjust the parameters based on experience and projected functioning.

14.10.6.2 Modify DPM Configuration Parameter Values

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Configuration Parameters** link.

- The **List of Configuration Parameters** page is displayed.

3 If there is an option list for the parameter value to be changed, first click on the corresponding option button then click on the appropriate choice (e.g., **ON**)

- Options are displayed (e.g., **ON** and **OFF**).

4 If there is no option list for the parameter value to be changed, type the desired value in the corresponding text entry box.

5 Click in the check box at the end of the row containing the parameter value to be modified.

- The selected configuration information is marked for modification.

6 Repeat Steps 3 through 5 for any additional parameter values to be modified.

7 To implement the modification of parameter value(s) click on the **Apply Change** button.

- The **List of Configuration Parameters** page is refreshed, the check box(es) is (are) unfilled, and the displayed **Parameter Value**(s) reflect(s) the change(s) implemented.

14.10.7 Aging Parameters

Figure 14.10-13 shows the **List of Aging Parameters** page, which is accessible from the **Aging Parameters** link on the **DPM GUI Home Page** (Figure 14.10-2). The page lists the starting priority, aging step, and maximum priority associated with each ECS priority. The information is accessible to both full-capability and limited-capability operators.

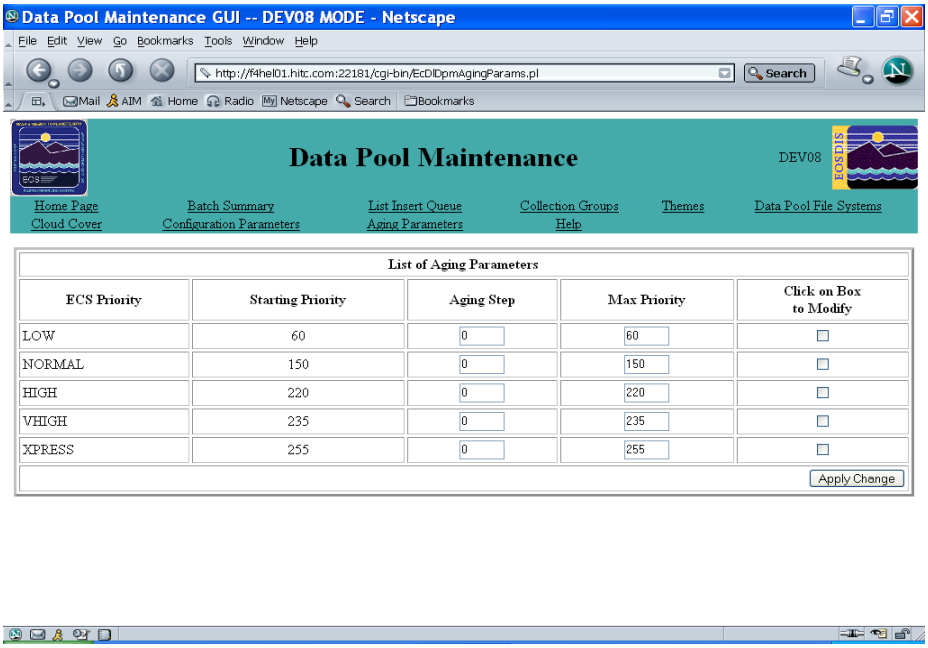

Figure 14.10-13. List of Aging Parameters Page

14.10.7.1 View DPM Aging Parameter Values

1 Launch the **DPM GUI**.

- For detailed instructions refer to the **Launch the DPM GUI** procedure (previous section of this lesson).
- The **DPM GUI Home Page** is displayed.

2 Click on the **Aging Parameters** link.

- The **List of Aging Parameters** page is displayed (see Figure 14.10-13).

3 Observe data displayed on the **List of Aging Parameters** page.

- The table on the **List of Aging Parameters** page has columns containing the following types of Data Pool configuration information:
  - **ECS Priority** (list of all ECS priorities)
  - **Starting Priority** (cannot be changed using the GUI)
  - **Aging Step** (includes an entry field with current value)
  - **Max Priority** (includes an entry field with current value)
  - **Click on Box to Modify** parameter (containing a check box to mark the parameter for change)

- The rows in the table indicate the current values and descriptions of the various ECS priorities, from **LOW** to **XPRESS**.
- There is an **Apply Change** button at the bottom of the page for implementing changes.

For the aging step, and maximum priority associated with each ECS priority there is a text box so the full-capability operator can assign a new value to the parameter when necessary. In addition, there is a check box that the full-capability operator uses to mark parameters with values to be modified. At the bottom of the page is an **Apply Change** button for implementing the change(s).

14.10.7.2 Modify DPM Aging Parameter Values

---

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Aging Parameters** link.

- The **List of Aging Parameters** page is displayed.

3 To change the value associated with **Aging Step** and/or **Max Priority** for a particular ECS priority first type the desired value(s) in the corresponding text entry box(s).

4 To continue the process of changing the value associated with **Aging Step** and/or **Max Priority** for a particular ECS priority click in the check box at the end of the row containing the parameter value(s) to be modified.

- The selected configuration information is marked for modification.

5 Repeat Steps 3 and 4 for any additional parameter values to be modified.

6 To implement the modification of parameter value(s) click on the **Apply Change** button.

- The **List of Aging Parameters** page is refreshed, the check box(es) is (are) unfilled, and the displayed **Aging Step** and **Max Priority** values reflect the change(s) implemented.

14.10.8 Collection Groups

Figure 14.10-14 illustrates the Collection Groups page and is accessible from the **Collection Groups** link on the **Home Page** (Figure 14.10-2). The page lists the collection groups, providing for each the **Data Source (ECS or Non-ECS)** (LaRC only)**, Group ID, Display Name**, and a brief **Description** of the collection group.

Note: For the 7.21 LaRC delivery the Data Source field was added in order to accommodate Non-ECS data.

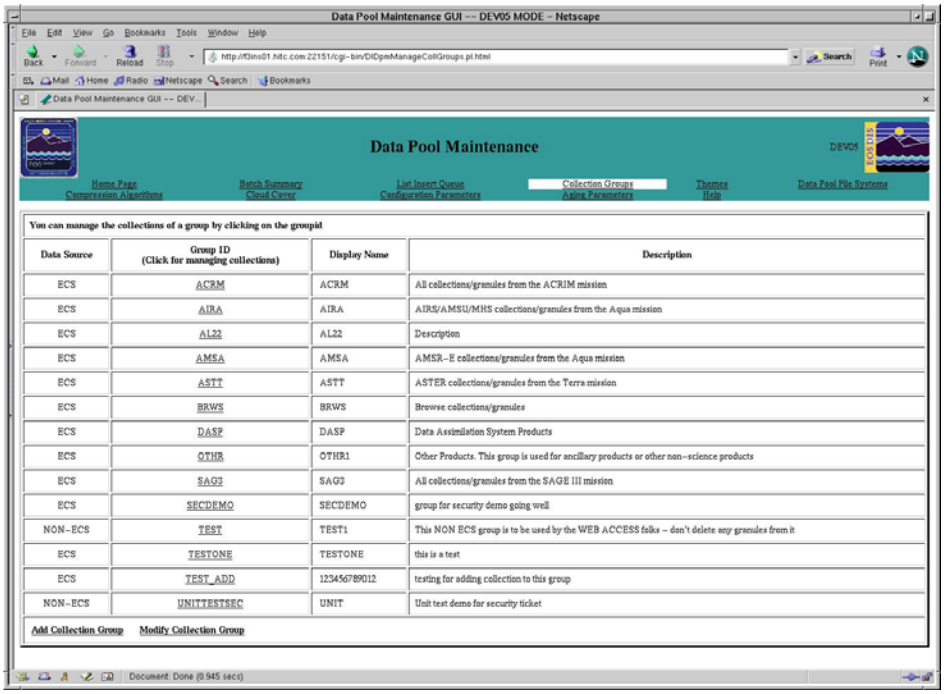

Figure 14.10-14. Collection Groups Page

The conceptual structure of the data pool is set up for each DAAC based on the collections and granules archived at the DAAC. Related collections are grouped in **Collection Groups** (e.g., ASTER collections and granules from the Terra mission, MODIS Oceans collections and granules from the Terra Mission, MISR collections and granules from the Terra mission, MODIS Snow and Ice collections and granules from the Terra mission). Each collection group initially consists of a number of collections that have been specified as valid for Data Pool insertion (i.e., granules of the data types in the collection may be inserted into the Data Pool).

The Collection Groups page of the **DPM GUI** allows both full-capability operators and limited-capability operators to view collection groups. It also provides access to pages for viewing collections within a collection group. In addition, the page has links that allow a full-capability operator to modify or add a collection group or collection in the ECS database aim schema.

Figure 14.10-15 shows a **List of Collections** page obtained by clicking on one of the **Group ID** links on the Collection Groups page. The **List of Collections** page lists the collections in the collection group, providing for each collection information (as applicable) concerning the Version, Science Granules and/or Metadata, Data Pool Insertion, HDF-EOS to GeoTIFF Conversion Tool (HEG) Processing, Export URLs to ECHO, Quality Summary URL, Spatial Search Type, Global Coverage, Day/Night Coverage, 24-Hour Coverage, and Cloud Coverage characteristics of the collection.

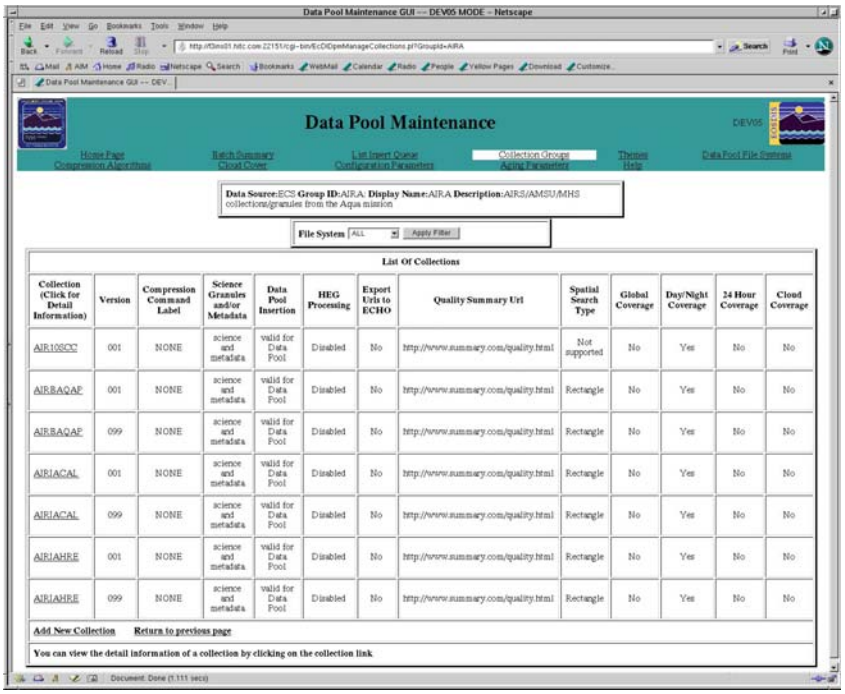

Figure 14.10-15. List of Collection Page

At the bottom of the **List of Collections** page, there is a link that permits a full-capability operator to **Add New Collection** or **Delete a Collection.** A click on one of the **Collection (Click for Detail Information)** ID links brings up a collection **Detail Information** page (Figure 14.10-16) listing the same information for the collection as was displayed on the **List of Collection** page plus some additional information. The additional information includes a **Description**, **File System**, **Cloud Cover Type**, **Cloud Cover Source**, and **Cloud Cover Description**.

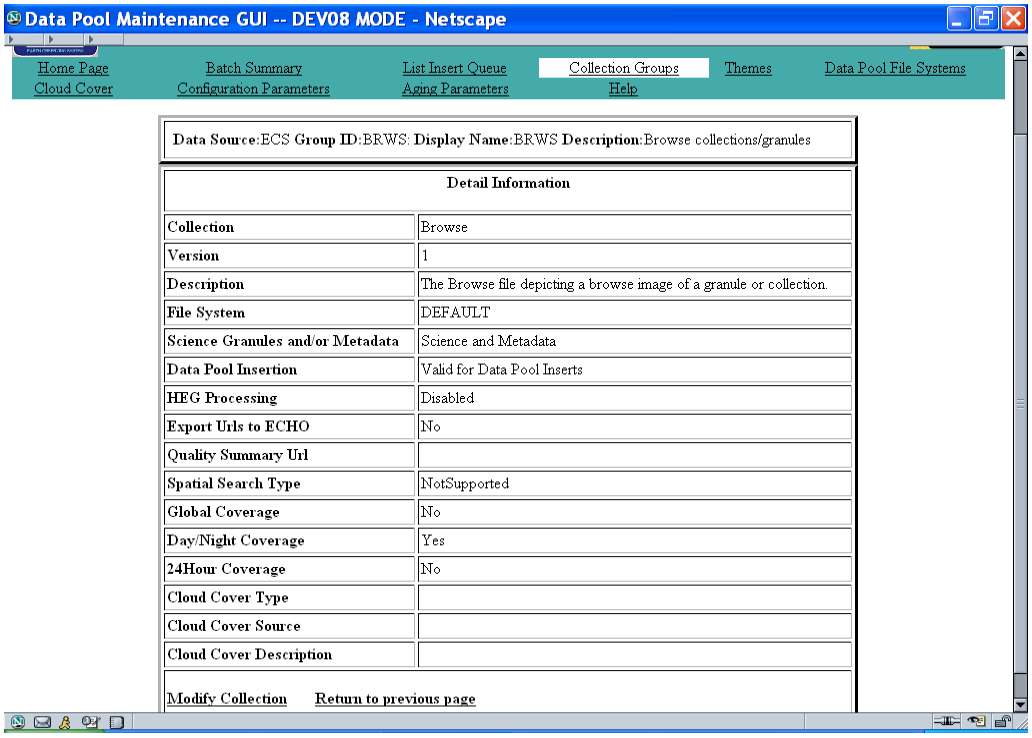

Figure 14.10-16. Collection Detail Information Page

The collection **List of Collections** and **Detail Information** pages provide a means of determining what collections within a collection group have been designated valid for Data Pool insertion and whether the insertion is for science granules and metadata or metadata only.

At the bottom of the **Detail Information** page, there is a link that permits a full-capability operator to modify a collection.

14.10.8.1 View Collection Groups

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Group page is displayed (see Figure 14.10-15).

3 Observe data displayed on the Collection Group page.

- The table on the Collection Group page has columns containing the following types of collection group information:
  - **Data Source (LaRC only) –** Designates ECS or Non-ECS data.
  - **Group ID (Click for managing collections)**

- **Display Name**
- **Description**

- The following links are available on the Collection Groups page:
  - **Group ID (Click for managing collections)** - Links to a **List of Collections** contained in that group
  - **Add Collection Group**
  - **Modify Collection Group**

4 To obtain more information about the collections in one of the groups, click on its link in the **Group ID (Click for managing collections)** column.

- The **List of Collection** page is displayed (see Figure 14.10-15).

5 Observe data displayed on the **List of Collections** page.

- Near the top of the **List of Collections** page contains the following basic collection group information:
  - **Data Source (LaRC only) –** Designates ECS or Non-ECS data.
  - **Group ID**
  - **Display Name**
  - **Description**
- There is a file system filter (and associated **Apply Filter** button) for displaying data on the **Collection** (**Click for Detail Information)** column for all file systems or by individual file system.
- The **List of Collection** page has columns containing the following types of collection group information:
  - **Collection** (**Click for Detail Information)** link
  - **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**
- The following links are available on the **List of Collection** page:
  - Each collection listed in the **Collection** column links to a **Collection Detail** page.
  - **Add New Collection**
  - **Return to previous page**

6 To filter data displayed on the **List of Collections** page, click on the **File System** filter option button.

- Options are displayed.

7 Select a file system filter option click on the appropriate choice from the option list.

8 To implement the filtering of data displayed on the **Collection Detail** link, click on the **Apply Filter** button.

- The **Collection (Click for Detail Information)** column is displayed with the filtered collection group information.

9 To obtain more information about one of the collections in the collection group, click on its link in the **Collection (Click for Detail Information**) column.

- The **Detail Information** page (see Figure 14.10-16) for the selected collection is displayed.

10 Observe data displayed on the **Detail Information** page.

- Near the top of the **Detail Information** page is the following basic collection group information:
  - **Data Source**
  - **Group ID**
  - **Display Name**
  - **Description**
- The **Detail Information** page has rows containing the following types of collection information:
  - **Collection**
  - **Version**
  - **Description**
  - **File System**

- **Science Granules and/or Metadata**
- **Data Pool Insertion**
- **HEG Processing**
- **Export Urls to ECHO**
- **Allow ordering and viewing of associated PH granule**
- **Allow ordering and viewing of associated QA granule**
- **Allow ordering of associated Browse granule**
- **Quality Summary Url**
- **Spatial Search Type**
- **Global Coverage**
- **Day/Night Coverage**
- **24 Hour Coverage**
- **Cloud Cover Type**
- **Cloud Cover Source**
- **Cloud Cover Description**

- The following links are available on the Collection **Information Detail** page:
  - **Modify Collection**
  - **Return to previous page**

11 To view a description for another collection in the same group first click on the **Return to previous page** link.

- The **List of Collections** page is displayed again.

12 To view a description for another collection in the same group return to Step 9.

13 To view a description for another collection in another group return to Step 2.

The collection **List of Collections** and **Detail Information** pages provide a means of determining what collections within a collection group have been designated valid for Data Pool insertion and whether the insertion is for science granules and metadata or metadata only.

At the bottom of the **Detail Information** page, there is a link that permits a full-capability operator to modify a collection. Figure 14.10-17 shows the **Modify Collection** page obtained by clicking on a **Modify Collection** link. On this page, a full-capability operator can modify many of the characteristics of the collection then implement the changes with a click on the **Apply Change** button at the bottom.

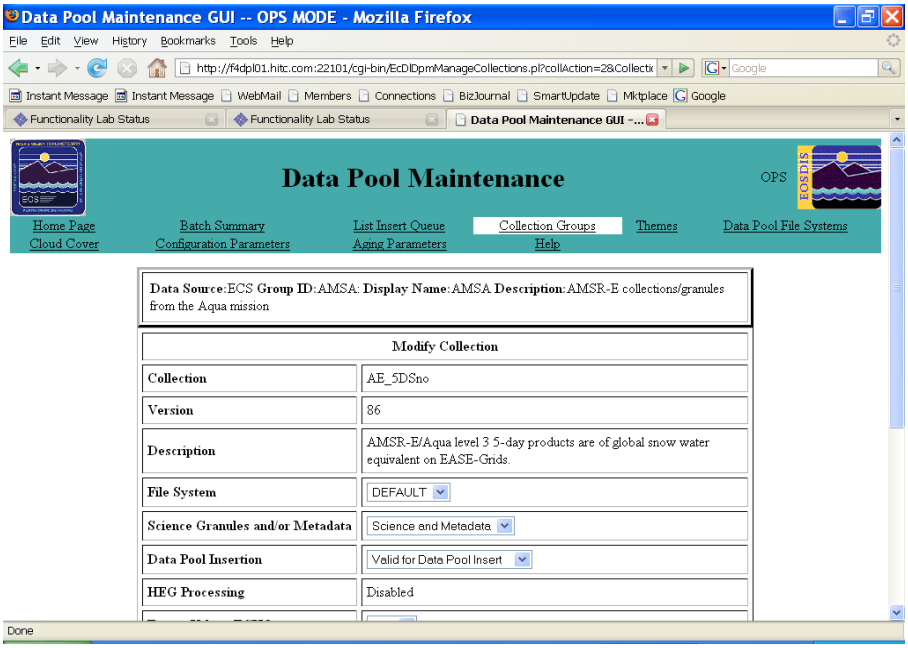

Figure 14.10-17. Modify Collection Page

From time to time, it may be necessary to add or modify a collection group (e.g., if a DAAC begins archiving data from a new instrument). If a collection group is to be added to the list of collection groups, it is necessary to use the **Add Collection Group** link at the bottom of the Collection Groups page. Full-capability operators (only) can use the procedure that follows to add a collection group (see Figure 14.10-18):

NOTE: Although the following procedure is applicable, most of the time new collection groups will be added only during releases of new software versions and you will not use this procedure often.

Caution

The Add Collection Group function is to be exercised judiciously because the **DPM GUI** does not provide any means of deleting collection groups.

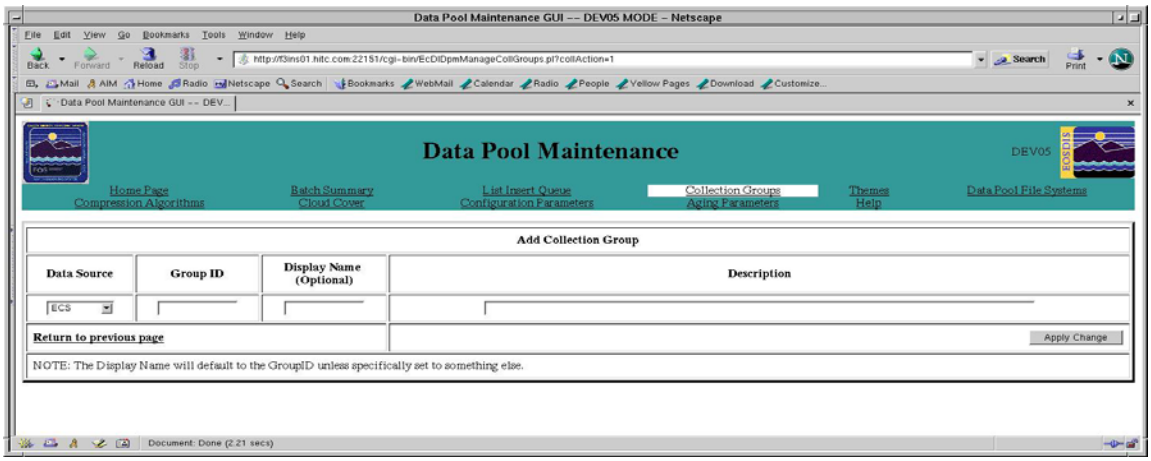

Figure 14.10-18. Add Collection Group Page

14.10.8.2 Modify Collection Groups

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Groups page is displayed.

3 Click on the **Modify Collection Group** link at the bottom of the page.

- The **Modify Collection Group** page is displayed, providing a table of collection group information showing four columns **Group ID (Click to Manage Collections)**, **Display Name**, **Description**, and **Check box to Modify** (containing a check box to mark the collection group for change).
- There is an **Apply Change** button at the bottom of the page for implementing changes.

4 To change the display name for the collection group, type the desired name in the **Display Name** field for the group ID.

- The **Display Name** may have no more than 12 characters.
  - Valid characters include A-Z, 0-9, underscore and space.

5 To change the description of the collection group, type the desired description in the **Description** field for the group ID.

- The **Description** may have no more than 255 characters.

6 Click in the check box at the end of the row containing collection group information to be modified.

- The selected collection group information is marked for modification.

7 Repeat Steps 4 through 6 for any additional collection groups to be modified.

8 Click on the **Apply Change** button.

- The revised collection group information is entered in the ECS database aim schema.
- The Collection Group page is displayed with the modified collection group information.

14.10.8.3 Add a Collection Group

---

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Groups page is displayed.

3 Click on the **Add Collection Group** link at the bottom of the page.

- The **Add Collection Group** page is displayed (see Figure 14.10-18) providing a page with three columns of text-entry fields, **Data Source, Group ID**, **Display Name**, and **Description**.

4 Enter the **Data Source** (ECS or Non-ECS) for the new collection group in the **Data Source** field.

5 Type a unique identifier for the new collection group in the **Group ID** field.

- The **Group ID** may have no more than 12 characters.
  - Valid characters include A-Z, 0-9, and underscore.
- The **Group ID** will be compared with the existing **Group IDs** to ensure that it is not a duplicate of another ID.

6 To provide a display name that is different from the **Group ID** type a name in the **Display Name** field.

- The **Display Name** is the name for the collection as displayed on the **Data Pool Web Access GUI**.
- If no **Display Name** is entered, the **Group ID** will be used as the **Display Name**.
- The **Display Name** may have no more than 12 characters.
  - Valid characters include A-Z, 0-9, underscore and space.

7 Type the description for the new collection group in the **Description** field.

- The **Description** may have no more than 255 characters.

8 Click on the **Apply Change** button.

- The new collection group information is entered in the ECS database aim schema.
- The Collection Group page is displayed with the new collection group information.

14.10.8.4 Delete a Collection

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Groups Page is displayed

3 Click on one of the Group ID links on the Collection Groups Page.

- The List of Collections page is displayed.

4 Scroll to the far right of the screen, and click on the **Delete Collection** box of the collection to be deleted.

- A check mark is placed in the box..

5 Click on the **Delete Collection** button (bottom of screen).

- A confirmation window is displayed.
- Select **OK** if you want to complete the delete process.

Although an initial Data Pool structure is provided, not all collections are necessarily specified as eligible for Data Pool insertion. Based on experience, or on changes in demand, a DAAC may wish to add one or more collections to a data group. The procedure for adding ECS collections to a collection group is somewhat different from the procedure for adding a non-ECS collection to a collection group. If a full-capability operator clicks on an **Add New Collection** link at the bottom of a **List of Collections** page for an ECS collection, a **Collections Not in Data Pool** page (Figure 14.10-19) is displayed. The page lists ECS collections that are not currently part of a Data Pool collection group. The operator can select an ECS collection to add to the collection group by clicking on the link in the **Collection (Click on collection to add)** column of the table on the page. That causes an **Add New Collection** page (Figure 14.10-20) to be displayed. The Collection, Version, Description, and Spatial Search Type fields are filled in when the page comes up. The page has fields and option lists for entering the remaining data concerning the collection (e.g., File System, and Science Granules and/or Metadata). After the operator enters the appropriate data concerning the ECS collection, clicking on the **Apply Change** button at the bottom of the page applies the changes to the ECS database aim schema and refreshes the **List of Collections Group** page.

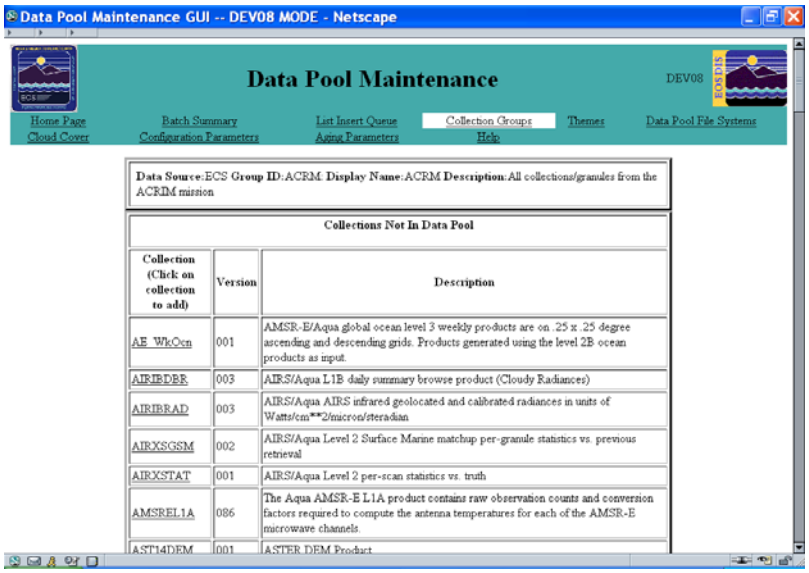

Figure 14.10-19. Collections Not in Data Pool Page

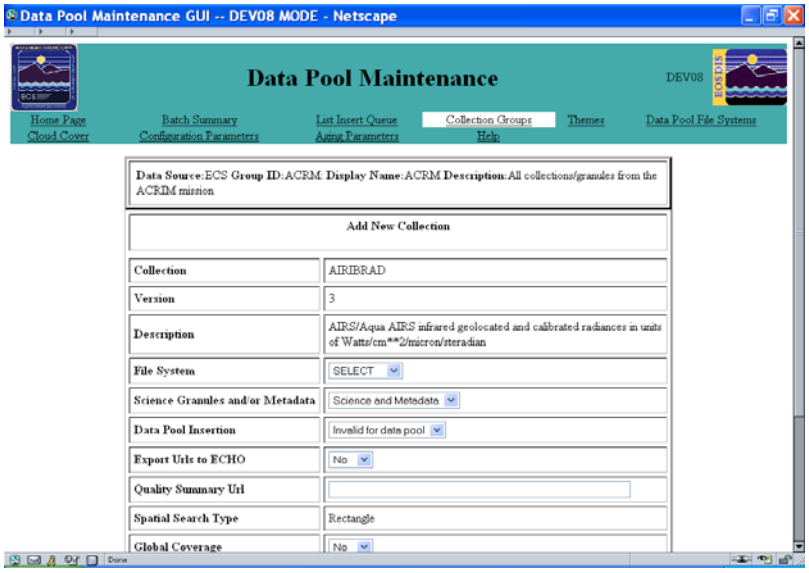

Figure 14.10-20. Add New [ECS] Collection Page

14.10.8.5 Add an ECS Collection to a Collection Group

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Group page is displayed.

3 Click on the **Group ID** link for the ECS collection group to which the collection is to be added.

- The **List of Collections** page is displayed**.**

4 Click on the **Add New Collection** link at the bottom of the **List of Collections** page.

- The **Collections Not in Data Pool** page is displayed (see Figure 14.9-19).

5 Click on the link in the **Collection (Click on collection to add)** column of the collection to be added to the collection group.

- The **Add New Collection** page is displayed (see Figure 14.9-20).

NOTE: On the ECS collection version of the **Add New Collection** page the **Collection**, **Version**, **Description**, and **Spatial Search Type** fields are already filled in using information from the ECS database aim schema.

6 To select a file system option (if applicable), click on the appropriate choice from the **File System** option list.

7 To select a Science Granules and/or Metadata option, click on the appropriate choice from the Science Granules and/or Metadata option list.

- **Science and Metadata** is the default option.

8 To select a data pool insertion option, click on the appropriate choice from the Data Pool Insertion option list.

- **Invalid for data pool** is the default option.
- **Valid for data pool** must be selected if the collection is to be eligible for insertion into the Data Pool.

9 To select an ECHO export option, click on the appropriate choice from the **Export Urls to ECHO** option list.

- **No** is the default option.

Yes must be selected if collection URLs are to be eligible for export to ECHO.

10 To select an order/view PH granule, click on the appropriate choice from **Allow ordering and viewing of associated PH granule** option list.

- **No** is the default option.

11 To select an order/view QA granule, click on the appropriate choice from **Allow ordering and viewing of associated QA granule** option list.

- **No** is the default option.

12 To select an order browse granule, click on the appropriate choice from **Allow ordering of associated Browse granule** option list.

- **No** is the default option.

13 If the collection is to be linked to a quality summary web site, enter the URL in the **Quality Summary Url** text entry field.

- Ensure that **http://** is included in the **Quality Summary Url** text entry field.

14 To select a global coverage option, click on the appropriate choice from the **Global Coverage** option list.

- **Yes** indicates no spatial searches for the collection.
- **No** indicates that spatial searches are allowed for the collection.

15 To select a day/night coverage option, click on the appropriate choice from the **Day/Night Coverage** option list.

- **Yes** indicates that day/night searches are allowed for the collection.
- **No** indicates that the collection is excluded from day/night searches.

16 To select a 24-hour coverage option, click on the appropriate choice from the **24 Hour Coverage** option list.

- **Yes** indicates that the collection is excluded from time of day searches.
- **No** indicates that time of day searches are allowed for the collection.

17 To select a cloud cover type and source option, click on the appropriate choice from the **Cloud Cover Type & Source** option list.

- All cloud cover information in the ECS database aim schema is listed.
- If the desired cloud cover type/source is not listed, it can be entered using the procedure **Add New Cloud Cover Information** (previous section of this lesson).

18 To view details of cloud cover type and source, click on the **View Details** link adjacent to the **Cloud Cover Type & Source** option list.

19 Click on the **Apply Change** button.

- The new collection information is entered in the ECS database aim schema.
- The **List of Collection** page is displayed with the new collection information.

As part of managing the Data Pool storage and retention of data, making adjustments based on experience and/or changes in demand, it may be desirable to modify a collection. The modification may mean specifying that metadata only may continue to be inserted and science granules may no longer be inserted, or declaring the collection no longer valid for data pool insertion at all. Figure 14.10-21 shows the **Modify Collection** page that a full-capability operator obtains by clicking on the **Modify Collection** link at the bottom of the Detail Information page. On the **Modify Collection** page, the full-capability operator can modify the File System, Science Granules and/or Metadata, Data Pool Insertion, Quality Summary URL, DayNight Coverage, 24

Hour Coverage, Cloud Cover Type & Source. The operator implements the change(s) with a click on the **Apply Change** button at the bottom of the page.

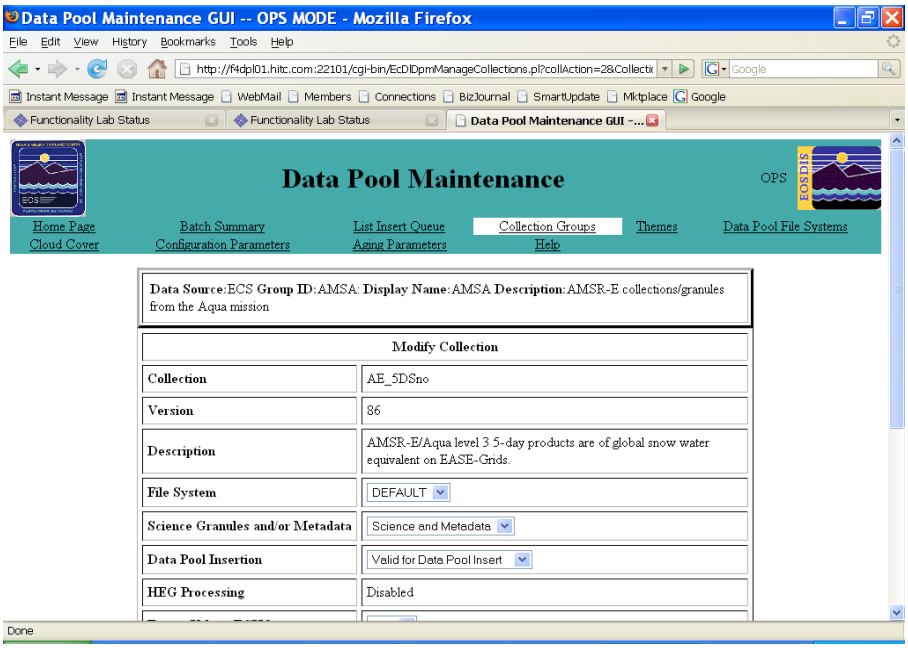

Figure 14.10-21. Modify Collection Page

14.10.8.6 Modify an ECS Collection

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Collection Groups** link.

- The Collection Group page is displayed.

3 Click on the **Group ID** link for the ECS collection group to which the collection is to be added.

- The **List of Collections** page is displayed**.**

4 Click on the desired link found in the **Collection (Click for Detail Information)** column.

- The **Detail Information** page is displayed.

5 Click on the **Modify Collection** link.

- The **Modify Collection** page is displayed (see Figure 14.10-21).

NOTE: On the ECS collection version of the **Modify Collection** page, the **Collection**, **Version**, **Description**, **Spatial Search Type, HEG Processing, Export Urls to ECHO and Global Coverage** fields cannot be edited.

6 To select a file system option (if applicable), click on the appropriate choice from the **File System** option list.

7 To select a Science Granules and/or Metadata option, click on the appropriate choice from the Science Granules and/or Metadata option list.

- **Science and Metadata** is the default option.

8 To select a data pool insertion option, click on the appropriate choice from the Data Pool Insertion option list.

- **Invalid for Data Pool** is the default option.

Valid for Data Pool must be selected if the collection is to be eligible for insertion into the Data Pool.

9 If the collection is to be linked to a quality summary web site, enter the URL in the **Quality Summary Url** text entry field.

Ensure that **http://** is included in the **Quality Summary Url** text entry field.

10 To select a day/night coverage option, click on the appropriate choice from the **Day/Night Coverage** option list.

- **Yes** indicates that day/night searches are allowed for the collection.
- **No** indicates that the collection is excluded from day/night searches.

11 To select a 24-hour coverage option, click on the appropriate choice from the **24 Hour Coverage** option list.

- **Yes** indicates that the collection is excluded from time of day searches.
- **No** indicates that time of day searches are allowed for the collection.

12 To select/update a cloud cover type and source option, click on the appropriate choice from the **Cloud Cover Type & Source** option list.

- All cloud cover information in the ECS database aim schema is listed.
- If cloud cover source needs updating, it can be chosen from the drop down list next to **Cloud Cover Type & Source.**
- If the desired cloud cover type/source is not listed, it can be entered using the procedure **Add New Cloud Cover Information** (previous section of this lesson).

13 To view details of cloud cover type and source, click on the **View Details** link adjacent to the **Cloud Cover Type & Source** option list.

14 To select an order/view PH granule, click on the appropriate choice from **Allow ordering and viewing of associated PH granule** option list.

- **Yes** indicates the collection(non-QA, non-PH, non-browse) is enabled for order/view PH

- **No** indicates the collection(non-QA, non-PH, non-browse) is disabled for order/view PH

15 To select an order/view QA granule, click on the appropriate choice from **Allow ordering and viewing of associated QA granule** option list.

- **Yes** indicates the collection(non-QA, non-PH, non-browse) is enabled for order/view QA
- **No** indicates the collection(non-QA, non-PH, non-browse) is disabled for order/view QA

16 To select an order browse granule, click on the appropriate choice from **Allow ordering of associated Browse granule** option list.

- **Yes** indicates the collection(non-QA, non-PH, non-browse) is enabled for order browse
- **No** indicates the collection(non-QA, non-PH, non-browse) is disabled for order browse

14 Click on the **Apply Change** button.

- The new collection information is entered in the ECS database aim schema.
- The **List of Collection** page is displayed with the new collection information.

14.10.9 Themes

Figure 14.10-22 illustrates the **Detailed List of Data Pool Themes** page. The page allows either the full-capability operator or the limited-capability operator to view a list of themes in alphabetical order. The list can be filtered using the option lists for **Web Visible** and **Insert Enabled**, and/or typing **Beginning Letters** (of the theme name). After selecting the options, a click on the **Apply Filter** button displays the filtered list of themes. The full-capability operator can delete a theme by selecting the corresponding check box and clicking on the **Apply Change** button. There are **Add New Theme** and **Modify Theme** links providing access to pages for managing those functions. After the operator completes adding a new theme or modifying a theme by clicking on the **Apply Change** button at the pages for those functions, the changes take effect in the ECS database aim schema and the changes are also reflected in the **Detailed List of Data Pool Themes** page.

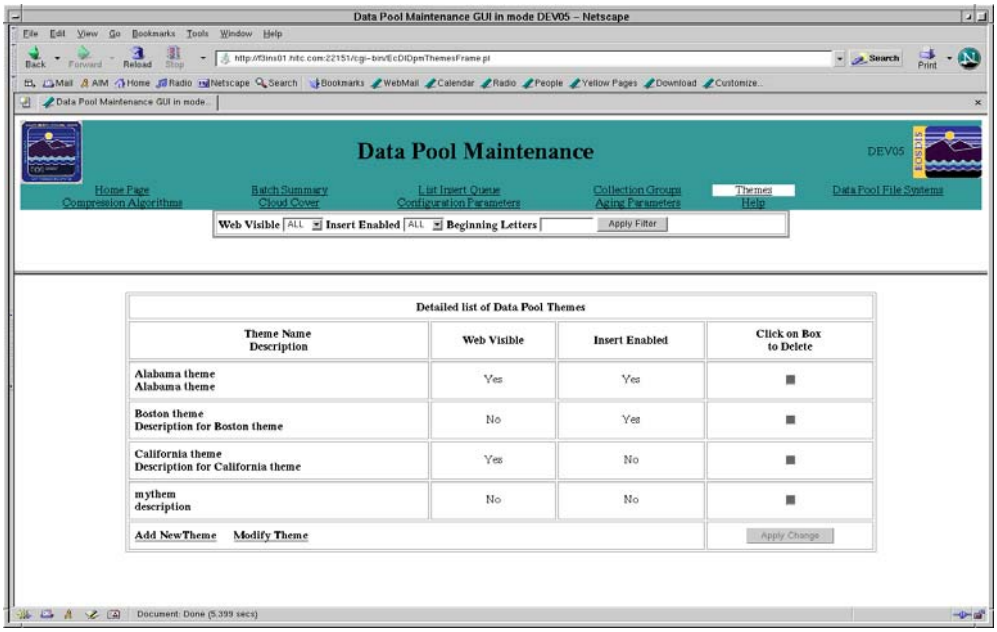

Figure 14.10-22. Detailed List of Data Pool Themes Page

If a full-capability operator clicks on the **Add New Theme** link of the **Detailed List of Data Pool Themes** page shown in Figure 14.10-22, the **Add New Theme** page (Figure 14.10-23) is displayed. To specify a theme, the operator enters information in the fields provided for the purpose. **Theme Name** and **Description** are text entry fields. There are check boxes to specify whether the theme is valid for various options (i.e., **Web Visible** and **Insert Enabled**) or not. A click on the **Apply Change** button commits the changes to the ECS database aim schema and updates the **Detailed List of Data Pool Themes** page shown in Figure 14.10-22.

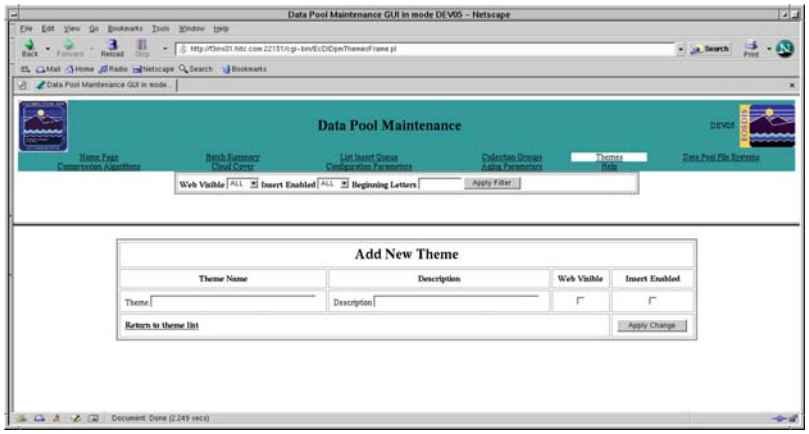

Figure 14.10-23. Add New Theme Page

Users may search the Data Pool for data associated with themes. As data are inserted into the Data Pool, it is possible to associate the data with themes. The **DPM GUI Detailed List of Data Pool Themes** page permits both full-capability and limited-capability operators users to view a list of Data Pool themes. In addition it has links that allow full-capability operators to add new themes, modify existing themes, or delete themes.

14.10.9.1 View a List of Themes

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Themes** link.

- The **Detailed List of Data Pool Themes** page is displayed (see Figure 14.10-23).

3 Observe data displayed on the **Detailed List of Data Pool Themes** page.

- The table on the Detailed List of Data Pool Themes page has columns containing the following types of Data Pool file system information:
  - **Theme Name/Description**
  - **Web Visible**
  - **Insert Enabled**
  - **Click on Box to Delete** (containing a check box to mark the theme for deletion)
- There are theme filters (and associated **Apply Filter** button) for displaying data on the **Detailed List of Data Pool Themes** page depending on whether or not the theme.
  - Are web visible
  - Are insert enabled
  - Have certain letters at the beginning of the theme name.
- Filters can be applied individually or in any combination.
- The following links are available on the **Detailed List of Data Pool Themes** page:
  - **Add New Theme**
  - **Modify Theme**
- There is an **Apply Change** button at the bottom of the page to implement the deletion of selected themes.

4 To filter data displayed on the **Detailed List of Data Pool Themes** page use the **Filter a List of Themes** procedure (subsequent section of this lesson).

5 If data displayed on the Detailed List of Data Pool Themes page were filtered, return to Step 3.

The procedure to **Filter a List of Themes** is subordinate to other theme-related procedures (i.e., **View a List of Themes**, **Modify a Theme**, and **Delete a Theme.**) Both full-capability and limited-capability operators users may filter data displayed on the Themes pages to which they have access.

14.10.9.2 Filter a List of Themes

1 To filter data displayed on one of the **Themes** pages on the basis of whether or not the themes are enabled for web drill-down, insertion in to the Data Pool, WCS accessibility, WMS accessibility, file format pre-conversion first click on one of the option buttons (in the filter area of the page):

- **Web Visible**
- **Insert Enabled**

2 To continue the process of selecting a theme filter option click on the appropriate choice from the option list.

- **Yes (View all themes enabled for the selected option)**
- **No (View all themes disabled for the selected option)**
- **ALL (View all themes regardless of whether the selected option is enabled or disabled)**

3 Repeat Steps 1 and 2 as necessary to select additional filter options.

4 To select a theme filter option on the basis of the beginning letters of the theme (if applicable) type the beginning letter(s) of the theme in the Beginning Letters text entry field.

5 To implement the filtering of data displayed on one of the Themes pages click on the **Apply Filter** button.

- The page is displayed with the filtered theme information.

6 Return to the procedure that specified the **Filter a List of Themes** procedure.

Full-capability operators can use the **DPM GUI** to modify a theme. This can be useful if, for example, it is noted that access frequency for granules referencing a theme has declined to the point that the thematic collection should be removed from the Data Pool, but there are a few web users that still use it. In that case, it may be appropriate to change the description of the theme to alert users that the theme will be phased out soon.

If a full-capability operator clicks on the **Modify Theme** link of the **Detailed List of Data Pool Themes** page shown in Figure 14.10-22, the **Modify Theme** page (Figure 14.10-24) is displayed. **Theme Name** is the only field that is not editable. The operator can modify the description of a theme by simply retyping in the text area. The operator also can change the various options (i.e., **Web Visible** and **Insert Enabled**) by selecting or deselecting the appropriate boxes. A click on the **Apply Change** button commits the changes to the ECS database aim schema and updates the **Detailed List of Data Pool Themes** page shown in Figure 14.10-22.

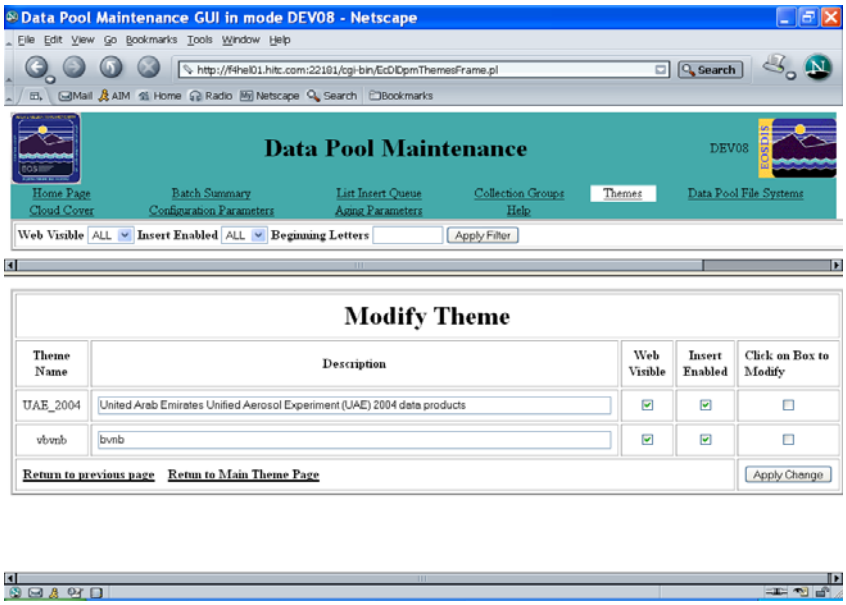

Figure 14.10-24. Modify Theme Page

14.10.9.3 Modify a Theme

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Themes** link.

- The **Detailed List of Data Pool Themes** page is displayed.

3 Click on the **Modify Theme** link.

- The **Modify Theme** page is displayed (see Figure 14.10-24).

4 To change the description of a theme (if applicable) type the desired description in the **Description** field for the theme name.

- The **Description** may have no more than 255 characters.

5 To change the theme from enabled to disabled (or vice versa) for one of the options (i.e., **Web Visible, Insert Enabled**) (if applicable) click on the toggle button box in the corresponding column in the row for the theme.

- A check mark in the box indicates that the theme is enabled for the corresponding option.
- The absence of a check mark in the box indicates that the theme is not enabled for the corresponding option.

6 Click in the **Click on Box to Modify** check box at the end of the row containing the theme to be modified.

- The selected theme is marked for modification.

7 Repeat Steps 4 through 6 as necessary for any additional themes to be modified.

8 To implement the modification of theme(s) click on the **Apply Change** button.

- The theme information is entered in the ECS database aim schema.
- The Detailed List of Data Pool Themes page is displayed with the modified theme information.

Full-capability operators (only) can use the following procedure to add a theme:

14.10.9.4 Add a Theme

1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Themes** link.

- The **Detailed List of Data Pool Themes** page is displayed.

3 Click on the **Add New Theme** link.

- The **Add New Theme** page is displayed (see Figure 14.10-24).
- There is an **Apply Change** button at the bottom of the page for implementing changes.
- The following link is available: **Return to theme list**.

4 Type a unique name for the theme in the **Theme Name** text entry field.

- The Theme Name may have no more than 40 characters.
- The Theme Name may not start with a number.
- The Theme Name may not duplicate the name of a collection, an ESDT, or another theme.

5 To enter a description of the theme, type the desired description in the **Description** text entry field.

- The **Description** may have no more than 255 characters.

6 To enable the theme for one of the options (i.e., **Web Visible, Insert Enabled**) (if applicable) click on the toggle button box in the corresponding area of the form.

- A check mark in the box indicates that the theme is enabled for the corresponding option.
- The absence of a check mark in the box indicates that the theme is not enabled for the corresponding option.

7 Repeat Step 6 as necessary to enable the theme for additional options.

8 Click on the **Apply Change** button.

- The new theme information is entered in the ECS database aim schema.
- The Detailed **List of Data Pool Themes** page is displayed with the new theme information.

Full-capability operators (only) can use the following procedure to delete a theme:

14.10.9.5 Delete a Theme

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1 Launch the **DPM GUI**.

- The **DPM GUI Home Page** is displayed.

2 Click on the **Themes** link.

  – The **Detailed List of Data Pool Themes** page is displayed.

3 Click in the **Click on Box to Delete** check box at the end of the row containing the theme to be deleted.

- The selected theme is marked for deletion.

4 Repeat Step 4 as necessary for any additional themes to be deleted.

5 To implement the deletion of theme(s) click on the Apply Change button.

- The theme deletion information is entered in the ECS database aim schema.
- The **Detailed List of Data Pool Themes** page is displayed with the modified theme information.

14.10.10 Help

Figure 14.10-25 illustrates the **Help** page that allows both full-capability and limited-capability operators to obtain information on using the **DPM GUI**. The **Help** page describes the features of the other pages of the **DPM GUI**.

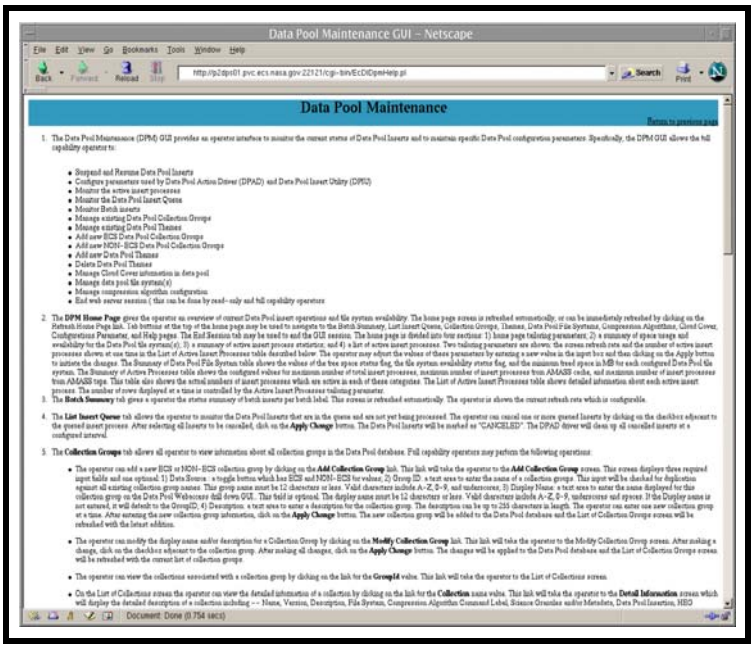

Figure 14.10-25. Help Page

14.11 Working with Data Pool Scripts

There are several Data Pool scripts that provide the operator with utilities or applications for managing Data Pool maintenance. These include:

- Update Granule Utility: a script to update granule expiration (extend the period of retention) and, optionally, retention priority, for selected science granules already in the Data Pool. The utility allows operators to extend the expiration of all granules associated with a particular thematic collection or upgrade their expiration priority.
- Data Pool Cleanup Orphan/Phantom Validation: a script to check for orphans and phantoms in the Data Pool.
- Data Pool SoftLink Check Utility: a script to check for softlinks that do not point to a valid file.
- Data Pool Cleanup Utility: a script which removes granules in input file, regardless of whether they are public or hidden; will not remove granules in open orders. [DELETED]
- Data Pool Online Archive Cleanup Utility: a script to recover unprocessed granules that were left in tables DlBcpGransToDelete and DlBatchGransToDelete from the failure of previous running.
- Data Pool Publish Utility: a script to move granules to public Data Pool.

- Data Pool Unpublish Utility: a script to move granules from public Data Pool to hidden Data Pool.
- Data Pool Inventory Validation Utility: a script that compares Online Archive inventory (DPL db) with AIM inventory (AIM db); compares checksum in Online Archive (DPL db) with checksum in AIM inventory (AIM db).
- Data Pool Checksum Verification Utility (DPCV): a script that compares checksum in DPL database with checksum on disk in Online Archive. [Due to performance issue, this script is being replaced by Data Pool Checksum Verification Service (CVS)]
- Restore Online Archive from Tape Utility: a script to perform bulk repairs of the on-line archive, especially in the case of serious disk errors or a loss of a Data Pool file system. It can also be used to restore the integrity of granules which have files missing or corrupted, or missing links.
- Restore Tape from Online Archive Utility: a script to provide bulk repair as well as individual science granules in the AIM tape archive by replacing science granules with their copy from Data Pool On-line archive.
- Validation Tool: Archive Checksum Verification Utility (ACVU): a script that can identify corrupt files in the tape Archive. The utility uses a copy of the file in the Online Archive for validation.
- XML Check Utility (Xcu): a script to periodically check for corruption in the XML archive. In order to detect corruption, this utility verifies that the contents of the file are well-formed XML using xmllint.
- Data Pool Access Statistics Utility (DPASU): scripts for processing available Data Pool access logs to extract and summarize statistics on FTP and web access to data in the Data Pool. The statistics are stored in the ECS database aim schema to be used for producing tabular reports that can be loaded into a spreadsheet program for sorting, graphing, or other manipulation.
- Batch Insert Utility: a script for inserting non-ECS data and ECS data that are already in the archive into the Data Pool.[This script is being replaced by Publish Utility]
- Most Recent Data Pool Inserts Utility: normally runs as a cron job that lists the most recent additions to the Data Pool. If necessary, the utility can be run from the command line.
- Data Pool Collection-to-Group Remapping Utility: 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.
- Data Pool Move Collections Utility: a command-line interface to move collections from one file system to another. The file system move is implemented as a copy operation to the new collection directory, followed by removal of the old collection directory and its contents.
- Data Pool Hidden Scrambler Utility: a command-line utility for making the transition to or renaming (with encrypted names) hidden directories for order-only granules in the Data Pool.

- Data Pool Band Backfill Utility: a command-line tool that can correct band extraction problems that occurred during DPL registrations.
- Data Pool Remove Collection Utility: a command-line that provides a mechanism by which ECS Operations staff can remove collections from the ECS database aim schema that are no longer of interest to the end users.[DPL Maintenance GUI provides functionality to remove collection from Data Pool.]
- DPL XML Check Utility (EcDlXcu.pl): a script to periodically check for corruption of the XML files in datapool. In order to detect corruption, this utility verifies that the contents of the file are well-formed XML using xmllint.

Table 14.11-1 provides an Activity Checklist for Data Pool Scripts addressed in this section.

Table 14.11-1. Data Pool Scripts - Activity Checklist (1 of 2)

Order	Role	Task	Section	Complete?
1	Archive Technician	Extend the Retention for Selected Science Granules Using the Update Granule Utility	(P) 14.11.1.1	
3	Archive Technician	Specify Data Pool Access Statistics Rollup Start Time and DPASU Execution with *cron*	(P) 14.11.3.1	
4	Archive Technician	Specify Data Pool Access Statistics Utility Execution from the Command Line	(P) 14.11.3.2	
5	Archive Technician	Archive Access Statistics Using the Data Pool Archive Access Statistics Data Utility	(P) 14.11.3.3	
6	Archive Technician	Delete Access Statistics Using the Data Pool Archive Access Statistics Data Utility	(P) 14.11.3.4	
7	Archive Technician	Restore Access Statistics Using the Data Pool Archive Access Statistics Data Utility	(P) 14.11.3.5	
8	Archive Technician	Running Batch Insert Utility	(P) 14.11.4.1	
9	Archive Technician	Running the Most Recent Data Pool Inserts Utility	(P) 14.11.5.1	
10	Archive Technician	Running the Data Pool Collection-to-Group Remapping Utility	(P) 14.11.6.1	
11	Archive Technician	Running the Data Pool Move Collections Utility	(P) 14.11.7.1	

Table 14.11-1. Data Pool Scripts - Activity Checklist (2 of 2)

Order	Role	Task	Section	Complete?
13	Archive Technician	Running the Data Pool Hidden Scrambler Utility in Rename Mode	(P) 14.11.8.1	
14	Archive Technician	Running the Data Pool Cleanup Orphan/Phantom Validation	(P) 14.11.9.1	
15	Archive Technician	Running the Data Pool SoftLink Check Utility	(P) 14.11.10.1	
16	Archive Technician	Running the Data Pool Online Archive Cleanup Utility	(P) 14.11.11.1	
17	Archive Technician	Running the Data Pool Publish Utility	(P) 14.11.12.1	
18	Archive Technician	Running the Data Pool Unpublish Utility	(P) 14.11.13.1	
19	Archive Technician	Running the Data Pool Inventory Validation Utility	(P) 14.11.14.1	
20	Archive Technician	Running the Data Pool Checksum Verification Utility	(P) 14.11.15.1	
21	Archive Technician	Running the Restore Online Archive from Tape Utility	(P) 14.11.16.1	
22	Archive Technician	Running the Restore Tape from Online Archive Utility	(P) 14.11.17.1	
23	Archive Technician	Running the Archive Checksum Verification Utility	(P) 14.11.18.1	
24	Archive Technician	Running the XML Check Utility	(P) 14.11.19.1	
25	Archive Technician	Running the Data Pool Band Backfill Utility	(P) 14.11.20.1	
28	Archive Technician	Running the Data Pool Checksum Verification Service Client	(P) 14.11.23.1	
29	Archive Technician	Running the DPL XML Check Utility	(P) 14.11.24.1	

14.11.1 Extending the Period of Retention for Granules in the Data Pool

Data Pool maintenance personnel can run the Update Granule Utility to update the expiration date for selected non-ECS science granules. This utility also permits modifying a granule's retention priority, which can affect how soon the Data Pool Cleanup Utility removes the granule from the Data Pool.

The Update Granule Utility permits updating granule information using a command-line interface. The following options may be used:

-noprompt: suppressing prompts and detailed information display.
-theme: specifies a valid theme name (i.e., a character string that matches an existing theme name in the Data Pool inventory).

A single non-ECS granule may be updated using manual input. Multiple non-ECS granule updates can be handled using an input file containing a list of granules to be updated, or by specifying a theme. The input file must be structured as a list of granules to be processed, one

per line. Each line contains a granule ID, an expiration date, and (optionally) a new retention priority, the value of which may be null (i.e., left blank). The fields are separated by a single space. There should be no blank lines before the first or after the last granule in the list. The file contents should be similar to the following example.

GRANULE_ID_4832 EXP_DATE=2002/2/28 RETENTION=255
GRANULE_ID_4876 EXP_DATE=2002/2/28 RETENTION=200
GRANULE_ID_4883 EXP_DATE=2002/2/28 RETENTION=
GRANULE_ID_4937 EXP_DATE=2002/2/28
GRANULE_ID_4966 EXP_DATE=2002/2/28 RETENTION=255

When updating the granules associated with a theme, the utility updates the expiration date of a granule associated with that theme if and only if the new expiration date specified is later than the current expiration date of the granule. It updates the retention priority of a granule associated with that theme if and only if the new expiration priority specified is higher than the current retention priority of the granule.

The Update Granule Utility connects to the ECS database aim schema and calls database functions to perform the requested updates. Therefore, the utility runs only if the ECS database aim schema server is running and if the database is available. It also assumes the stored procedures are present. The Granule Update Utility may be run as a background process, with suppression of all warning/error messages and confirmation prompts if desired. When the utility is run, it writes information, any warnings, any errors, and messages to a log file about granules as they are updated.

Assume that a user contacts the DAAC with a request to update (extend) the expiration date to the end of February 2002 for selected granules in the Data Pool, and provides a list of granule IDs for the selected granules. The following procedure is applicable.

14.11.1.1 Extend the Retention for Selected Science Granules Using the Update Granule Utility

1 Log in at the machine on which the Update Granule Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Update Granule Utility, type: **cd /usr/ecs/<MODE>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the UNIX prompt, type the command to start the Update Granule Utility, in the form **EcDlUpdateGranule.pl <command line parameters>** then press the **Return/Enter** key.

- For this exercise, use the following command:

  EcDlUpdateGranule.pl <*MODE*> -file <tr_list>

  The first command-line parameter specified must be **<*MODE*>**, a valid, existing Data Pool mode (e.g., OPS, TS1, TS2).

- The following six permutations are valid command-line entries for initiating the Update Granule utility:

- **EcDlUpdateGranule.pl <*MODE*> -file <*filename*>** (to update non-ECS granules listed in an input file named **<*filename*>** while displaying all summary information to the operator, and asking confirmation of the update).
- **Ec DlUpdateGranule.pl <*MODE*> -grnid <*granuleID*> -exp <*expiration date*> [-ret <*retention priority*>]** (to update a non-ECS granule identified by its **<*granuleID*>** with a new expiration date and, optionally, a new retention priority while displaying all summary information to the operator, and asking confirmation of the update).
- **EcDlUpdateGranule.pl <*MODE*> -noprompt -file <*filename*>** (to update non-ECS granules listed in an input file named **<*filename*>** with no confirmation or information displayed to the operator).
- **EcDlUpdateGranule.pl <*MODE*> -noprompt -grnid <*granuleID*> -exp <*expiration date*> [-ret <*retention priority*>]** (to update a non-ECS granule identified by its **<*granuleID*>** with a new expiration date and, optionally, a new retention priority with no confirmation or information displayed to the operator).
- **EcDlUpdateGranule.pl <*MODE*> -theme <*themename*> -exp <*expiration date*> [-ret <*retention priority*>]** (to update a non-ECS granule identified by its **<*themename*>** with a new expiration date and, optionally, a new retention priority while displaying all summary information to the operator, and asking confirmation of the update).
- **EcDlUpdateGranule.pl <*MODE*> -noprompt -theme <*themename*> -exp <*expiration date*> [-ret <*retention priority*>]** (to update a non-ECS granule identified by its **<*themename*>** with a new expiration date and, optionally, a new retention priority with no confirmation or information displayed to the operator.

- The utility executes and displays a confirmation prompt similar to the following:

  You are about to start updating granules.

  Total number of granules: 11
  Total size of granules: 8.61339673772454 MB
  Do you wish to continue processing the update? [y/n]y

4 Type **y** and then press the **Return/Enter** key.

- The utility completes execution and displays output similar to the following:

  Update completed.
  Please check the database to ensure proper completion.
  Update took 2 seconds to complete

  Gracefully exiting...

- To check the database, have the Database Administrator use isql commands on the Inventory database host to query the DlGranuleExpirationPriority table. It may also

be useful to examine the Update Granule Utility log file to determine whether there were any problems with the execution. To examine that log file, go to Steps 5 and 6.

5 To change to the directory containing the Update Granule Utility log file and other log files, type the following:
cd /usr/ecs/<MODE>/CUSTOM/logs and then press the **Return/Enter** key.

- The working directory is changed to /usr/ecs/<MODE>/CUSTOM/logs.

6 To examine the Update Granule Utility log file, type **pg EcDlUpdateGranule.log** and then press the **Return/Enter** key.

- The first page of the log file is displayed; additional sequential pages can be displayed by pressing the **Return/Enter** key at the "**:"** prompt. It is also possible to search forward by typing **/<search item>**. For example, to search the log file for reference to one of the granules updated, type **/<granuleID>** and then press the **Return/Enter** key.

- Although this procedure is written for the **pg** command, any UNIX editor or visualizing command (e.g., **vi**, **view**, **more**, or **tail**) can be used to review the log.

- The log entries have a time and date stamp; about the time that the update was executed, the log should show entries similar to the following:

  2001/11/29 15:52:50.814:Update started...
  2001/11/29 15:52:50.964:Granule 4871 updated
  2001/11/29 15:52:51.083:Granule 4954 updated
  2001/11/29 15:52:51.212:Granule 4955 updated
  2001/11/29 15:52:51.346:Granule 4956 updated
  2001/11/29 15:52:51.409:Granule 4957 updated
  2001/11/29 15:52:51.688:Granule 4959 updated
  2001/11/29 15:52:51.778:Granule 4961 updated
  2001/11/29 15:52:51.998:Granule 4963 updated
  2001/11/29 15:52:52.107:Granule 4963 updated
  2001/11/29 15:52:52.394:Granule 4964 updated
  2001/11/29 15:52:52.569:Granule 4966 updated
  2001/11/29 15:52:52.590:Update ended.
  2001/11/29 15:52:52.608:This update took approximately 2 seconds

- If the log indicates errors or warnings, it may be necessary to correct the condition identified in the entry (e.g., edit the data in the granule list in the input file) and run the utility again. Specific error entries depend on the error that occurred; examples of error entries in the log may be similar to the following:

  4959 AST_04 1 0.03962299 Jul 30 2001 12:00AM Feb 2 1998 11:59PM 255 2
  Warning: The new expiration date for the above granule is less than or equal to today's date.
  DATABASE ERROR:Server message number=120001 severity=16 state=1 line=33 server= x4oml01_srvr procedure=ProcSelectGrExpiration text=ProcSelectGrExpiration: Requested granule id not in database.

2001/11/29 15:50:36.647:Database Lookup ==> ERRORS WERE FOUND WITH GRANULE "4654". (It may not exist or contains the wrong format).
2001/11/29 15:50:36.663:
EcDlUpdateGranule_1.pl aborted due to insufficient processing data: All the granule triplets had errors.

14.11.2 Running the Data Pool Cleanup Utility (DELETED)

14.11.3 Running the Data Pool Access Statistics Utility

The Data Pool Access Statistics Utility (DPASU) parses the EOSDIS Service Interface (ESI) Data Access and the FTP access service and stores the results in tables in the ECS database aim schema. The DPASU is a command-line utility that permits an option of entering input parameters. It is intended to be run with ***cron*** to cover an arbitrary 24-hour period starting at a time specified as a configuration parameter in a configuration file. However, an operator may run the utility from the command line specifying a start date as an input parameter to cover a period other than the normal 24-hour period addressed by ***cron*** or to cover that normal period if ***cron*** failed to process the logs for that period.

There are two versions of the DPASU, one for each type of log processed. The script named **EcDlDaRollupApacheLogs.ksh** tracks accesses through ESI Data Access. The script named **EcDlRollupWuFtpLogs.pl** runs on a server with access to SYSLOG with FTP access entries**.** A third script **EcDlRollupHttpLogs.pl** track access to the Data Pool via httpd. These scripts capture data on downloads from the Data Pool, including date and time of access, path and file name of the file, and size of the file. The captured data are written to a temporary "flat file" -- a tab-delimited text file -- stored in the directory /<ECS_HOME>/<*MODE*>/CUSTOM/data/DPL/. The flat file is then exported to database and stored in a table. The DPASU calls stored procedures to generate a separate rollup table, removes the flat file, and enters a record in a separate table identifying which periods have been rolled up in order to prevent inadvertent reprocessing of that period.

To prevent potential table locking, ***cron*** runs of the DPASU scripts should be separated so that they are not both running concurrently (e.g., separate their start times by at least 20 minutes). Use the following procedure to specify a 1:00 a.m. start time for the rollup and add a line to the ***crontab*** files to run the DPASU for the OPS mode beginning at 2:00 a.m. every day with a 20-minute separation between the scripts.

14.11.3.1 Specify Data Pool Access Statistics Rollup Start Time and DPASU Execution with *cron*

The Data Pool access rollup scripts are run by cron on a daily basis at a consistent time of day. There are a number of factors to consider when determining at what time to run the rollup scripts each day. Factors are:

a. The rollup scripts should be run at a time of day that is AFTER the configured rollup start time. (A good rule of thumb is to have the scripts run at least one half hour after the rollup start time.) This ensures the 24-hour rollup period has completed at the time the rollup scripts are run.

   Example 1: If the rollup start time is 2:00 a.m., the cron should run the rollup scripts at a time after 2:30 a.m.

   Example 2: If the rollup start time is 22:00, the cron should run the rollup scripts at a time after 22:30, but *not* after 23:59 because any time after that is the next day.

b. It is recommended the rollup scripts be run by cron at a time of day when Data Pool access activity is low – e.g., during the early morning hours.

c. The rollup scripts should be run BEFORE the daily Data Pool Cleanup script is run, to minimize chances that information about files accessed during the 24-hour rollup period has been removed from the ECS database aim schema. (If this information has been removed, the rollup scripts are unable to write information for those files in the DlGranuleAccess table.)

d. The rotation/renaming times of the Web Access and FTP log files and the time the corresponding rollup script is run must be taken into consideration in determining, which log files to parse and whether to use a wildcard in the specification of the log file path.

   For example, consider the case where the FTP log is rotated/renamed each day at 01:00, and the FTP rollup script is run at 03:00 with a rollup start time of 02:00. When the rollup script is run at 03:00 on September 22, 2002, the rollup period is September 21, 2002 02:00 through September 22, 2002 01:59. The FTP log (e.g. datapoolftplog.1)which was rotated/renamed at 01:00, now only contains accesses for the time period September 22, 2002 01:00 through September 22, 2002 03:00 (the current time). The previous FTP log (e.g. datapoolftplog.0), contains accesses for the time period September 21, 2002 01:00 through September 22, 2002 00:59. To capture information for the entire rollup period, the ftp rollup script must be configured to parse both the datapoolftplog.1 and datapoolftplog.0.

   This may be accomplished by either running the ftp rollup script twice, once against datapoolftplog.1 and once against datapoolftplog.0, or by running the script once and using a wildcard to specify the ftp log path. (Note that wildcard path names must be enclosed in quotes if used on the command line with the –web command line parameter, but do NOT need to be enclosed in quotes if used with the configuration parameter WEB_LOG_PATH. See sections 4.8.5.1.5 and 4.8.5.1.6).

e. To prevent or minimize the chances of database contention, it is recommended the daily cron job for rolling up FTP access logs and the daily cron job for rolling up web access logs be staggered, so the two rollup scripts do not run at the same time.

In the case that *cron* fails to run the Data Pool access rollup scripts on a given day, the operator can manually run either script, specifying the date(s) missed using the –start command line parameter.

Although the Data Pool Access Statistics Utility scripts are intended to be run with **cron**, if it is necessary to run them from the command line, it is possible to do so. For example, if **cron** fails to complete successfully for any reason, no entry is made into the record table to indicate that a period was processed. In that event, the statistics can be captured for the missing interval by running the utility manually.

There are seven command-line parameters for use with the utility scripts (see 609 document information):

- The **<*MODE*>** parameter indicates the mode (must specify a valid directory path) in which the script is to run; it is mandatory, unlabeled, and must be the first parameter following the command.
- The **-noprompt** parameter optionally specifies suppression of output to the screen.
- The **-nodelete** parameter optionally prevents the flat file from being deleted upon completion of the run.
- The **-flatfile <*path/file*>** parameter optionally provides an alternative path/file name for the flat file produced by the parser (useful only with the **-nodelete** option).
- The **-ftp <*path/file*>** parameter optionally indicates an alternative ftp log path/file(s) to be used instead of the configured default path/file (for the **EcDlRollupWuFtpLogs.pl** script only). Wildcards may be used, but must be escaped (i.e., proceeded with a \).
- The **-web <*path/file*>** parameter optionally indicates an alternative web log path/file(s) to be used instead of the configured default path/file (for the **EcDlRollupWebLogs.pl** script only). Wildcards may be used, but must be escaped (i.e., preceded with a \).
- The **-start <*date*>** parameter optionally indicates an alternative start date for the rollup period, using the format MM/DD, and may be used to process a previously uncovered period.

With the exception of the mandatory **<*MODE*>** parameter, which must appear first after the command, the other parameters may be used in various orders and combinations.

Use the following procedure to run the Data Pool Access Statistics Utility scripts from the command line, with normal screen information display.

14.11.3.2 Specify Data Pool Access Statistics Utility Execution from the Command Line

Here are some examples of executing the Data Pool access rollup scripts from the command line.

Example 1:

EcDlDaRollupApacheLogs.ksh Run ESI Data Access rollup script in. This example is typical of syntax used in the crontab file.

Example 2

EcDlRollupWuFtpLogs.pl OPS –start 2002/02/15 –fwftp "/home/allmode/archive/xferlog.0"

The three remaining utilities are shell scripts for archiving, deleting, and restoring information in database tables populated by the DPASU. The **Data Pool Archive Access Statistics Data Utility** is run from the command line as needed or desirable to connect to the ECS database aim schema and write granule access data for a specified time range from the DlGranuleAccess, DlGranuleSubscription, and DlAccessRollup tables to an ASCII file. Once this is done, the operator can run the **Data Pool Delete Access Statistics Data Utility** from the command line to delete the archived data from the ECS database aim schema. If it is desirable to restore deleted data to the database, the **Data Pool Restore Access Statistics Data Utility** can be run from the command line to restore the data. The following procedures are applicable.

14.11.3.3 Archive Access Statistics Using the Data Pool Archive Access Statistics Data Utility

---

1 Log in at the host for the database (e.g., x4dbl03).

2 To change directory to the directory containing the Data Pool Archive Access Statistics Data Utility, type the following:
cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL and then press the **Return/Enter** key.

- The working directory is changed to **cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL**.

3 Type the following:
DlDbArchiveAccessStat <*MODE*> <*STARTDATE*> <*STOPDATE*> <*ARCHIVEDIR*> <DB*USERNAME*> <DB*SERVER*><DB*SERVERPORT*> <*DBNAME*> and then press the **Return/Enter** key.

- **<*MODE*>** is the mode in which the utility is being executed (e.g., OPS, TS1, TS2).
- **<*STARTDATE*>** is the start date time range, in format ***yyyymmdd***, for the data to be archived.
- **<*STOPDATE*>** is the stop date time range, in format ***yyyymmdd***, for the data to be archived.
- **<*ARCHIVEDIR*>** is the absolute path where the generated ASCII files are to be stored.

- **<DB*USERNAME*>** is the database login name.
- **<DB*SERVER*>** is the database server for the ECS database (e.g., x4dbl03).
- **<DB*SERVERPORT*>** is the database server port for the ECS database (e.g., x4dbl03
- **<*DBNAME*>** is the name of the ECS database (e.g., ecs).
- The script displays a prompt for entry of the password for the database login.

NOTE: The step that follows may require input from the Database Administrator.

4 Type **<*password*>** and then press the **Return/Enter** key.

- The script runs and the Archive Access Statistics Utility log file **DlDbArchiveAccessStat.log** records errors, warnings, and information about utility events. The log is written to the directory **/usr/ecs/<*MODE*>/CUSTOM/logs**.

To run the Data Pool Delete Access Statistics Data Utility, use the following procedure.

14.11.3.4 Delete Access Statistics Using the Data Pool Delete Access Statistics Data Utility

---

1 Log in at the host for the ECS database (e.g., x4dbl03).

2 To change directory to the directory containing the Data Pool Delete Access Statistics Data Utility, type the following:
cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL and then press the **Return/Enter** key.

- The working directory is changed to **cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL**.

3 Type the following:
DlDbDeleteAccessStat <*MODE*> <*STARTDATE*> <*STOPDATE*> <DB*USERNAME*> <DB*SERVER*><DB*SERVERPORT*> <*DBNAME*> and then press the **Return/Enter** key.

- **<*MODE*>** is the mode in which the utility is being executed (e.g., OPS, TS1, TS2).
- **<*STARTDATE*>** is the start date time range, in format ***yyyymmdd***, for the data to be deleted.
- **<*STOPDATE*>** is the stop date time range, in format ***yyyymmdd***, for the data to be deleted.
- **<DB*USERNAME*>** is the database login name.
- **<DB*SERVER*>** is the database server for the ECS database (e.g., x4dbl03).
- **<DB*SERVERPORT*>** is the database server port for the ECS database (e.g., x4dbl03
- **<*DBNAME*>** is the name of the ECS database (e.g., ecs).
- The script displays a prompt for entry of the password for the database login.

NOTE: The step that follows may require input from the Database Administrator.

4 Type **<*password*>** and then press the **Return/Enter** key.

- The script runs and the Delete Access Statistics Utility log file **DlDbDeleteAccessStat.log** records errors, warnings, and information about utility events. The log is written to the directory **/usr/ecs/<*MODE*>/CUSTOM/logs**.

To run the Data Pool Restore Access Statistics Data Utility, use the following procedure.

14.11.3.5 Restore Access Statistics Using the Data Pool Restore Access Statistics Data Utility

---

1 Log in at the host for the ECS database (e.g., x4dbl03).

2 To change directory to the directory containing the Data Pool Restore Access Statistics Data Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL** and then press the **Return/Enter** key.

- The working directory is changed to **cd /usr/ecs/<*MODE*>/CUSTOM/dbms/DPL**.

3 Type **DlDbRestoreAccessStat <*MODE*> <*STARTDATE*> <*STOPDATE*> <*ARCHIVEDIR*> <DB*USERNAME*> <DB*SERVER*><DB*SERVERPORT*> <*DBNAME*>** and then press the **Return/Enter** key.

- **<*MODE*>** is the mode in which the utility is being executed (e.g., OPS, TS1, TS2).
- **<*STARTDATE*>** is the start date time range, in format ***yyyymmdd***, for the data to be restored.
- **<*STOPDATE*>** is the stop date time range, in format ***yyyymmdd***, for the data to be restored.
- **<*ARCHIVEDIR*>** is the absolute path of the storage location for the ASCII files containing the data to be restored.
- **<DB*USERNAME*>** is the database login name.
- **<DB*SERVER*>** is the database server for the ECS database (e.g., x4dbl03).
- **<DB*SERVERPORT*>** is the database server port for the ECS database (e.g., x4dbl03
- **<*DBNAME*>** is the name of the ECS database (e.g., ecs).
- The script displays a prompt for entry of the password for the database login.

NOTE: The step that follows may require input from the Database Administrator.

4 Type **<*password*>** and then press the **Return/Enter** key.

- The script runs and the Archive Access Statistics Utility log file **DlDbRestoreAccessStat.log** records errors, warnings, and information about utility events. The log is written to the directory **/usr/ecs/<*MODE*>/CUSTOM/logs**.

14.11.4 Running the Batch Insert Utility

The Batch Insert Utility is being replaced by Publish Utility. Please refer to the related section (14.11.12).

14.11.4.1 Running the Batch Insert Utility

The Batch Insert Utility is being replaced by Publish Utility. Please refer to the related section (14.11.12).

14.11.5 Running the 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. Files inserted into Data pool on the specified day are subsequently listed in the output files. If no date is provided, the utility uses the preceding day as a default with a time range of midnight to midnight.

The Most Recent Data Pool Insert Utility normally runs as a cron job. However, if it is necessary to run the utility from the command line it is possible to do so.

The procedure for running the Most Recent Data Pool Insert Utility is based on the following assumptions:

- Database server is running.
- ECS database is available.
- Stored procedures are present.

14.11.5.1 Running the Most Recent Data Pool Inserts Utility

1 Log in at the host where the Most Recent Data Pool Inserts Utility is installed (e.g. x4dpl01).

2 Type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities**, then press the **Return/Enter** key.

3 Type **EcDlMostRecentInsert.pl <*MODE*> -insertDate <*YYYY/MM/DD*>** and then press the **Return/Enter** key.

- **<*MODE*>** is the mode in which the utility is being executed (e.g., OPS, TS1, or TS2).
- **-insertDate** is an optional parameter specifying date of user's interest. If the date parameter is not specified, the preceding day's date is used as the default value.
- For example, if today were July 11, 2005, the following command:**EcDlMostRecentInsert.pl OPS** would generate files concerning additions to the Data Pool between midnight July 9, 2005 and midnight July 10, 2005.

- The Most Recent Data Pool Inserts Utility runs and generates a set of files:
- One file, named DPRecentInserts_<YYYYMMDD>, is located at the top-level Data Pool directory. It contains distinct GroupID, ShortName, and VersionID. For example, the file DPRecentInserts_20051102 in directory /datapool/OPS/user might contain the following types of entries:

  START_FILE: Entries:: 7
  GROUP_ID SHORT_NAME VERSION_ID
  MOAT MOD02QKM 077
  MOAT MYD02OBC 077
  MOAT MYD02QKM 077
  MOAT MYD35_L2 077
  TEST3 MOD35_L2 077
  END_FILE: Written 7

- There is a file in each of the collection-level directories named DPRecentInserts_<ShortName>_<VersionID>_<YYYYMMDD>. The files contain SHORTNAME, VERSION_ID, and RELATIVE_PATH. For example, the file DPRecentInserts_MYD35_L2_077_20051102 in directory /datapool/OPS/user/MOAT/MYD35_L2.077 might contain the following types of entries:

  START_FILE: FileEntries:: 616
  SHORTNAME VERSION_ID RELATIVE_PATH
  MYD35_L2 077 /MYD35_L2.077/2001.07.01/labtest_2019099138
  MYD35_L2 077 /MYD35_L2.077/2001.07.01/labtest_2019099140
  MYD35_L2 077 /MYD35_L2.077/2001.07.01/labtest_2019099237
  MYD35_L2 077 /MYD35_L2.077/2001.07.01/labtest_2019099247
  MYD35_L2 077 /MYD35_L2.077/2001.07.01/labtest_2019099263
  […]

- If it is unable to create a file at the top-level Data Pool directory, the Most Recent Data Pool Inserts Utility shuts down and logs an error message.
- If it is unable to create a file at a collection level directory, the Most Recent Data Pool Inserts Utility logs an error message and continues processing other valid directories.
- When the Most Recent Data Pool Inserts Utility runs, it creates a log file, EcDlMostRecentInsert.log, which records errors, warnings, and information about utility events.
- The Most Recent Data Pool Inserts Utility does not perform automatic recovery operations. If there is an execution failure as a result of database server or system shut down, rerun the script. This will create a new set of files (overwriting previous ones) listing additions to Data Pool for the specified insert date.

14.11.6 Running the Data Pool Collection-to-Group Remapping Utility

The **Data Pool Collection-to-Group Remapping Utility (EcDIRemap)** 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 ECS database aim schema.
- The group to which the user is mapping the collection is not the BRWS (browse) group.
- The collection to be remapped is not the Browse (Browse.001) collection.
- Database server is running.
- ECS database aim schema is available.
- Stored procedures are present.

There are several assumptions expected of the Data Pool Collection-to-Group Remapping Utility. The utility expects the existence of the collection in the Data Pool to which the user is mapping; it assumes that the browse collection is always located in the group "BRWS"; it also assumes the stored procedures are present. The Group Mapping utility runs only if the database server is running and if the database is available.

14.11.6.1 Running the Data Pool Collection-to-Group Remapping Utility

1 Ensure that the "Insert Enabled Flag" for the source collection has been turned off.

- For detailed instructions refer to the **Modify an ECS Collection Using the DPM GUI** procedure (previous section of this lesson).

2 Log in at the host where the Data Pool Collection-to-Group Remapping Utility is installed (e.g., x4dpl01).

3 Type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities**, then press the **Return/Enter** key.

4 Type the following:
EcDlRemap.pl <*MODE*> -esdt <*name*> -version <*version*> -oldgrp <*old group*> -newgrp <*new group* > and then press the **Return/Enter** key.

- **<*MODE*>** is the mode in which the utility is being executed (e.g., OPS, TS1, or TS2).
- **<*name*>** is the name of the source collection being remapped.
- **<*version*>** is the version of the source collection version being remapped.

- **<*old group*>** is the name of the collection group name that currently contains the collection.
- **<*new group*>** is the name of the collection group to which the source collection is being remapped.

Example: To remap collection MOD29, Version 4, (i.e., MOD29.004) from collection group MOST to collection group MOSS, enter the following:

EcDlRemap.pl OPS –esdt MOD29 –version 4 –oldgrp MOST –newgrp MOSS

- The ECS database inventory would be updated to reflect the new location of the files.
- The Data Pool Collection-to-Group Remapping Utility runs and the log file, **EcDlRemap.log**, records errors, warnings, and information about utility events.
- The Data Pool Collection-to-Group Remapping Utility is able to recover from aborted runs by using the DlRecoveryParameters table to checkpoint its progress. In the event of an aborted run, the utility reads the recovery parameters table to determine at which point the utility left off when it aborted. This ensures that remappings that were taking place prior to the abort finish correctly. After recovery processing takes place, the utility processes the current run by acting on the latest input parameters.

14.11.7 Running the Data Pool Move Collections Utility

The Move Collections Utility provides the EED Operations Staff with a command-line interface to move collections from one file system to another. The utility requires command-line parameters that specify the collection (shortname and version id) to be moved and the source and target file system path. The utility also supports a verbose and debug option. This verbose option allows for enabling or suppressing detailed information displayed to the screen and log for the operator. The default is non-verbose, which allows an operator to run the utility as a background process. Fault recovery is also supported, allowing completion of a partially moved collection due to a database server fault or an operating system error.

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

These links will be persistent so that the data can still be retrieved without changing a URL. However the URLs for all the granules in the collection that were moved are exported to ECHO. The file system move is implemented as a copy operation to the new collection directory location, followed by removal of the old collection directory and its contents. Between the first copy operations and the cleanup/removal operations, the AmCollection table is updated with the target file system label. The utility then establishes a link to the new location at the collection

level.. As a result, existing URLs will not be invalidated by the move and no updated URLs need to be exported to ECHO. However, existing URLs and file pointers will be invalid from the time when the utility starts deleting the existing directories until the time the link is established. During this time:

- A Data Pool ftp user clicking on a URL might experience a temporary error when trying to access files and directories associated with the moving collection. File transfers that are already in progress when deletion begins should complete normally.

- FTP Pull users could experience similar temporary problems when they try to access links in FTP Pull directories that were established by the OMS and that point to granules in the moving collection.

In addition, the following errors may occur during a collection move:

- During the time a collection is being moved, the Data Pool Web GUI will return an error if a user tries to access the collection via a bookmark. It will flag the collection and not display it as an active link on the collection drill down web page, temporarily preventing drill down access to the collection.

- The Data Pool insert service will look up the collection path in the ECS database aim schema during the insert process. The collection path is updated once the initial copy phase is completed and before deletion/copy phase. Any Data Pool insert processes that looked up the file system label BEFORE it was updated will insert their granules into the old directory location. The Data Pool InsertActionQueue table should be checked around the file system label update time (found in the MoveCollection<shortname> log) to determine if publications occurred successfully.

The OMS looks up granule file locations immediately before performing an FTP Push operation. If the lookup occurs just before the collection information in the ECS database aim schema is updated, but the copy operation starts after the file was deleted, the FTP Push operation will fail and cause an operator intervention. Since the interval of time between file location look up and ftp push start is small, the chances for that occurring are very small. The operator would need to resubmit the request, and since the directory entry will now have been updated, the ftp push operation will succeed. If the above impacts are not acceptable, operators can suspend inserts and web access for the original file system by marking it as "unavailable" in the DPM GUI. This would also halt staging operations for that file system in OMS. To prevent errors, operators would need to verify before activating an order that it does not reference granules from the collection that is being moved. Operations will need to use a different mechanism to alert FTP users of the unavailability; and to prevent access, operations would need to take other measures, such as changing the directory permissions.

There are various command line parameters that are used in combination with each other. Table 14.11-2 provides a description of these parameters.

Table 14.11-2. Command Line Parameters

Parameter Name	Description
<mode>	An input parameter that specifies the mode of operation. This must be the first parameter passed, and it must be a valid, existing Data Pool mode with a format like OPS or TS1. This parameter is mandatory. **Note:** The user will be prompted if the utility is run in OPS mode to prevent any accidental loss of data.
-verbose	Directs the utility to run using verbose option. Some information will be displayed to the screen and detailed information will be written to the utility's log. Default is nonverbose. (See Note)
-shortname <shortname>	An input parameter that specifies the shortname of the collection to be moved. This parameter is mandatory.
-versionid <versionid>	An input parameter that specifies the version identifier of the collection to be moved. Do not specify leading zeros. This parameter is mandatory.
-sourcefs <file system label>	An input parameter that specifies the source file system label (i.e. FS1 or FS2) from which the collection is being moved. Note that all Data Pool file systems must be mounted under the Data Pool root (e.g. (/datapool/OPS/user). This parameter is mandatory.
-targetfs <file system label >	An input parameter that specifies the relative target file system path to which the collection is being moved. Note that all Data Pool file systems must be mounted under the Data Pool root (e.g. (/datapool/OPS/user). This parameter is mandatory.
-debug	This option directs the utility to print out other debug information. Default is no debug.

There is no required ordered sequence of the parameters except for the parameter <MODE>. This must be first parameter or a fatal error will be returned. The combination of these remaining inputs must be valid. A command line input error results in a 'usage' syntax display, and in most cases will also explain why the input was incorrect.

Configuration File Format – EcDlMoveCollection.CFG

The "config" file contains vital details about how to connect to the database. Without this file, the utility cannot run. The config file must be a single-entry plain text ASCII file, which has the following format:

```
DBUSERNAME = <string>
DBSERVER = <string>
DBSERVERPORT = <string>
DBNAME = <string>
DBSUBSYSTEM = <string>
PGM_ID = <string>
NUM_DB_RETRIES=<integer>
DB_SLEEP_SEC=<integer>
NUM_DELETE_RETRIES=<integer>
DELETE_SLEEP_SEC=<integer>
```

See Table 14.11-3 for a breakdown of configuration file parameters.

Table 14.11-3. Configuration File Parameters

Parameter Name	Description
DBUSERNAME	The user name for the RDBMS connection.
DBSERVER	The host name for the RDBMS server.
DBSERVERPORT	The port for the RDBMS supporting the mode.
DBNAME	The DB name within the RDBMS..
DBSUBSYSTEM	The RDBMS schema/subsystem (aim) hosting this utility.
PGM_ID	Program ID used for connecting to the database. The value of this parameter must be set to 10000022 for this program.
NUM_DB_RETRIES	The number of times the utility will attempt to connect to the database before exiting. The recommended default is 5.
DB_SLEEP_SEC	The number of seconds the utility will wait ('sleep') between connection attempts. The recommended default is 10.
NUM_DELETE_RETRIES	The number of times the utility will rescan the old collection directory prior to deleting it. If the delete fails, it is most likely because the directory is not empty because some granules were inserted after the move started. The repeated rescanning for these files handles this case. The recommended default is 5.
DELETE_SLEEP_SEC	The number of seconds the utility will wait ('sleep') between old collection directory rescans/deletes. The recommended default is 10.

14.11.7.1 Running the Data Pool Move Collections Utility

1 Log in at the host where the Data Pool Move Collections Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Move Collections Utility, type the following:

cd /usr/ecs/<*MODE*>/CUSTOM/utilities, then press the **Return/Enter** key.

3 At the prompt, type the command to start the Batch Insert Utility, in the form of the following.

EcDlMoveCollection.pl <mode> -shortname <shortname>

-versionid <versionid> -sourcefs <file system label>

-targetfs <file system label> -verbose -debug

Data Pool Move Collections Utility usage examples

- **`EcDlMoveCollection.pl <mode> -shortname MODVOLC`**

`–versionid 1 –sourcefs FS1 -targetfs FS2 -verbose`

Moves the files, browse links, and inventory information for the collection **MODVOLC.001** from its current directory structure in file system FS1 to the new filesystem FS2. The collection will be moved from /datapool/<mode>/user/FS1/MOAT to /datapool/<mode>/user/FS2/MOAT. The utility will be run using the -verbose option, which displays information to the screen and to the log.

- **`EcDlMoveCollection.pl <mode> -shortname MODVOLC –versionid 1 –sourcefs FS1 -targetfs FS2`**

Same as 1) but in non-verbose mode. No output to the screen and less detail in the log.

14.11.8 Running the Data Pool Hidden Scrambler Utility in Rename Mode

The Data Pool Insert Service stores granules that are staged to the Data Pool for ordering purposes only in separate directories whose contents are not visible to anonymous ftp users. Order-only granules were accessible by the general public.

When an order-only granule is subsequently inserted via a "normal" Data Pool insert, it becomes a normal Data Pool granule, and the Data Pool Insert Service moves it from the hidden directory to the appropriate place in the public directory structure. Of course, such transfers are not allowed for billable or restricted granules. DAACs should not and generally do not insert granules from billable collections into the Data Pool, and the Data Pool Insert Service performs various checks (including examination of the DFA flag) to prevent the insert of granules that are flagged as "Hidden" or "Restricted" in ECS.

To decouple Data Pool and OMS file references, ordered granules are always represented in the hidden directory structure, either by files (if the granule is not in the public Data Pool) or by links pointing to the public files (if the granule is in the public Data Pool). Whenever a granule is converted from an order-only to a public Data Pool granule, its files are moved and links are left behind in the order only directories. Although a "metadata only" granule would be considered public, its science file would remain inaccessible (i.e., it would never be in the public Data Pool).

The hidden directory structure is below the FTP root because of the need to support FTP Pull access to ordered data. To hide the directories, the FTP root contains a directory that serves as the root for the hidden directory structure. (The directory is directly below the file system level, i.e., at the level of the Data Pool collection groups.) While it is impossible to hide that directory from view, it and all directories below it are configured in such a manner that their contents cannot be listed via ftp, in effect hiding all lower-level directories as well as their contents from public view.

The hidden directory structure mimics the public Data Pool directory structure (i.e., it is organized by collection group and collection); however, the hidden directory structure uses encrypted directory names so the pathnames cannot be guessed, preventing anonymous FTP users from switching into a hidden directory via the **cd** command. The Data Pool Hidden Scrambler Utility (EcDlHiddenScrambler.pl) allows the DAAC to re-encrypt directory names

during system maintenance periods (i.e., during Data Pool down time), either on a regular basis or when intrusion is suspected.

Other Data Pool utilities (e.g., Data Pool collection move and re-map utilities) have been changed to the extent that they rely on the directory naming conventions so they can deal with granules in the hidden directory structure.

OMS takes responsibility for removing order-only data from the Data Pool when they are no longer needed. However, the responsibility for cleaning up the public Data Pool remains with the Data Pool Cleanup Utility.

It is essential that the names of the hidden directory names do not become public knowledge. An external user could use knowledge of directory names and clever guessing of file names to download from them via anonymous FTP. The Data Pool cannot prevent this because it is necessary to allow FTP Pull download from the directories via anonymous FTP. However, the Data Pool log analyzer will detect any attempt to access the hidden directories directly and will send an e-mail message to a DAAC-configured address to report security breaches. When that occurs, the DAAC should shut down FTP access to the Data Pool as soon as possible and run the Data Pool Hidden Scrambler Utility, which generates a new set of hidden directory names and updates the existing data holdings.

The Data Pool Collection-to-Group Remapping Utility will move the hidden collection directories when it moves the public collection directories. The Data Pool Move Collections Utility may also move the hidden directories for a collection depending on whether the order-only files are in the same file system as the public collection or are in a designated file system of their own.

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 section.

In rename mode the utility re-encrypts all of the hidden directory names. This involves updates to the directory in the file system and to the database. Links from the FTP Pull area (and elsewhere) are preserved. Re-encryption must be 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 the directories and files that were left unprocessed in the previous run. The operator is given no choice as to recovery. Recovery proceeds so that the Data Pool inventory and disk files will not be left in a corrupted state.

The procedure for running the Data Pool Hidden Scrambler Utility in rename mode starts with the assumption that the Data Pool is down for maintenance (no orders being processed, no external access to the Data Pool for downloading data, etc.).

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.

14.11.8.1 Running the Data Pool Hidden Scrambler Utility in Rename Mode

NOTE: In normal operations, the Data Pool Hidden Scrambler Utility is run in rename mode whenever hidden directory intrusion is detected/suspected. In addition, it is recommended that the Data Pool Hidden Scrambler Utility be run in rename mode on a scheduled basis (e.g., monthly) at the DAAC's discretion.

1 Log in at the machine where the Data Pool Hidden Scrambler Utility is installed (e.g., x4dpl01).

- The script must be run from a user account with privileges to rename directories on the Data Pool.

2 Type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** then press **Return/Enter**.

- Change directory to the directory containing the Data Pool Hidden Scrambler Utility script (e.g., EcDlHiddenScramblerDataPool.pl).
- <***MODE***> will most likely be one of the following operating modes:
  - OPS (for normal operation).
  - TS1 (for SSI&T).
  - TS2 (new version checkout).
- Note that the separate subdirectories under /usr/ecs apply to different operating modes.

3 To perform a "rename" run, at the UNIX prompt enter one of the following:

- **EcDlHiddenScramblerDataPool.pl <*MODE*>**

OR

EcDlHiddenScramblerDataPool.pl <*MODE*> -collgroup <*collgroup*>

OR

EcDlHiddenScramblerDataPool.pl <*MODE*> -shortname <*shortname*> -versionid <*versionid*>

- **<*collgroup*>** is a particular Data Pool collection group with collection directories to be renamed using the Hidden Scrambler Utility. If the –collgroup parameter is specified, the -shortname and –versionid parameters may not be used. If not all directories for collections within a collection group are to be renamed, run the Hidden

Scrambler Utility using the –shortname and –versionid parameters to rename the directory for each affected collection.

- **<*shortname*>** is the name of a particular Data Pool collection, the directory for which is to be renamed using the Hidden Scrambler Utility. If the –shortname parameter is specified, the -versionid parameter must be specified too. If the –shortname parameter is specified, the -collgroup parameter may not be used.

- **<*versionid*>** is the version ID of a particular Data Pool collection, the directory for which is to be renamed using the Hidden Scrambler Utility. If the -versionid parameter is specified, the –shortname parameter must be specified too. If the -versionid parameter is specified, the -collgroup parameter may not be used.

- The following examples show valid command-line entries for a "rename" run of the Hidden Scrambler Utility:

  EcDlHiddenScramblerDataPool.pl OPS

  – The Hidden Scrambler Utility performs rename processing (re-encrypts the hidden directory names) for all collection groups and all collections in the Data Pool in OPS mode.

  EcDlHiddenScramblerDataPool.pl OPS -collgroup MOAT

  – The Hidden Scrambler Utility performs rename processing (re-encrypts the hidden directory names) in OPS mode for the MOAT collection group, including all collections in the MOAT collection group.

  EcDlHiddenScramblerDataPool.pl OPS -shortname AST_L1B -versionid 3

  – The Hidden Scrambler Utility performs rename processing (re-encrypts the hidden directory names) in OPS mode for the AST_L1B.003 collection. [Note that the hidden directory name of the corresponding collection group (ASTT) would not be re-encrypted.]

- If applicable, usage errors (e.g., failure to specify a mode) are displayed on the terminal screen.

- The Data Pool Hidden Scrambler Utility records events and errors in the **EcDlHiddenScrambler.log** (in the /usr/ecs/<*MODE*>/CUSTOM/logs directory). If the log file exists already, the new information is automatically appended. If there is no existing log file named EcDlHiddenScrambler.log, the utility creates a new log file with that name.

- The Data Pool Hidden Scrambler Utility provides a capability to recover from interruptions caused by situations such as the system faults or database errors that leave all or some of the directories unprocessed. The utility detects such failure upon the next run and continues processing the directories and files that were left unprocessed in the previous run. The operator is given no choice as to recovery. Recovery proceeds so that the Data Pool inventory and disk files will not be left in a corrupted state.

14.11.9 Running the Data Pool Cleanup Orphan/Phantom Validation

EcDlCleanupFilesOnDisk.pl, a new utility, provides a mechanism for the ECS Operator to perform Data Pool orphan/phantom validation, and to remove the orphaned data from the ECS Database inventory and the Data Pool disks if desired.

EcDlCleanupFilesOnDisk.pl replaces EcDlCleanupDataPool.pl for orphan/phantom validation, as well as orphan file cleanup. Several enhancements have been made as part of the Release 7.22 as listed below:

a. The utility will validate the orphan/phantom files but not remove them from the data pool disks.
b. The utility will remove an orphaned file from the Data Pool inventory and disk if the –fix option is specified.
c. The utility will validate an orphaned browse granule that does not have any cross-references with any public granules (i.e., a granule whose isOrderOnly in (NULL, 'B')) in the Inventory Catalog.
d. The utility will remove the orphaned browse granule, and its files from the Data Pool inventory and Data Pool disks if the–fix option is specified.
e. If the max orphan age parameter on the command line is less than three days, override the parameter with the three-day value; a message as below will be displayed on the screen and be logged in the log file.
"The minimum possible value for maxOrphanAge is 3 days. Files modified less than 3 days ago will not be considered not in database"
f. The utility will skip collection groups not found in the DlCollectionGroup table, and will output and log invalid collection groups as:
"Invalid collection groupId [collection group name]"
The Data Pool Inventory Validation shall skip validation for collections that reside on file systems that are currently marked as unavailable or are suspended if the validation requires access to that file system, and log the collections that are skipped because of this.
g. If all collection groups specified are invalid, then the utility will terminate with an exit code of 1. The following error message will be output and logged:
"**No collection groups are specified or all groups are invalid"**

h. The utility will skip and log a collection whose file system is unavailable when the script starts. The error message is as:
"File system [file System] is unavailable for collection [collection name]"

i. The exit code is specified for the following situations:
0 - successful validation with no discrepancies
1 - failed to successfully run utility (internal error)
2 - successful validation with discrepancies

Table 14.11-4 provides a description of these parameters.

Table 14.11-4. Command Line Parameters

Parameter Name	Required	Description
mode	Yes	Specifies the mode of operation. The MODE parameter is mandatory as the first parameter.
collgroup	No	Allows user to specify a list of collection groups to perform validation on.
fix	No	Allows user to delete the orphaned files.
maxFileAge	No	Specifies how old the file must be before deleting it. The minimum possible value for maxFileAge is 3 days. Files modified less than 3 days ago will not be considered not in database.
outputDir	No	By default the output files are written to /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation. If -outputDir option is specified, the output file should locate in the /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation/<outputDir>, the value of -outputDir should be <outputDir>. If the directory <outputDir> does not exist, then the utility creates it.
debug	No	a. log more information for error checking. b. Create two files for a give collection, one with files list found from database , the other with the files list found from disk, all locate in /usr/ecs/<MODE>/CUSTOM/temp/DPL Here are examples of those two files: FilesInDb.GLA04.028aLfGVSJi.6041.20081126143245 FilesOnDisk.GLA0786XlnYQGSb.3187.20081126142747

EcDlCleanupFilesOnDisk Configuration File

The utility uses a configuration file, EcDlCleanupDataPool.CFG, located in the /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table .14.11-5 describes the configuration parameters.

Table 14.11-5. Configuration Parameters

Parameter Name	Description
DBUSERNAME	The Postgres login name.
DBSERVER	The name of the host running the PostgreSQL Server.
DBSERVERPORT	The port for the RDBMS supporting the mode
DBNAME	The name of the ECS database (always "ecs").
DBSUBSYSTEM	The name of the subsystem that contains this utility. This controls the schema path used in the RDBMS. The value "aim" should always be used. The mode will be added to any schema names by the utility.
PGM_ID	Program identifier used as seed to generate database password.
DEFAULT_LIMIT	Default priority limit if a limit (-limit) is not provided via command line.
NUM_RETRIES	Number of times database operation will be attempted.
SLEEP_SEC	Number of seconds between retries.
MAX_ORPHAN_AGE	Maximum age in days in qualifying a file as an orphan. A file must have an age greater than or equal to this value in order to be considered as an orphaned file. The parameter value must be 10 days or greater.
URL_EXPORT_RETENTION_PERIOD	The maximum age in days that a URL_EXPORT will be retained. The suggested value for this field is "30"
ORDER_OUTPUT_COLLECTIONS	A list of collection groups that should not be processed during orphan validation. Files in these directories will be ignored when determining orphans. The suggested value for this field is "OUTPUTS BRWS"
MAX_ORDER_AGE	The number of days for which a file in the order only directory will not be counted as an orphan. Suggested value for this field is 15.

14.11.9.1 Running the Data Pool Cleanup Orphan/Phantom Validation

1 Login at the machine where the Data Pool Cleanup Orphan/Phantom Validation Utility is installed (e.g., x4dpl01).

- The operator who is executing the script must have privileges for removing science, metadata, and browse files from the Data Pool disks.

2 To change to the directory for starting the Data Pool Cleanup Orphan/Phantom Validation Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Cleanup Orphan/Phantom Validation Utility, in the form of the following.

EcDlCleanupFilesOnDisk.pl <mode >

[-collgroup <groupList>] -- optional

[-maxFileAge <age in # of days>] -- optional

[-outputDir <outputDir] -- optional

[-fix] -- optional

[-debug] -- optional

The <mode> parameter is mandatory as the first parameter.

Data Pool Cleanup Orphan/Phantom Validation Utility usage examples

- For a "**validation only**" run:
  EcDlCleanupFilesOnDisk.pl TS1
  - for all collection groups, maximum file age will be 3 days, output files will be written to the directory /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation/

  EcDlCleanupFilesOnDisk.pl TS1 – collgroup "MOST BRWS" -maxFileAge 5
  - for collection groups "MOST BRWS" only, maximum file age will be 5 days, output files will be written to the directory /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation/

  EcDlCleanupFilesOnDisk.pl TS1 -outputDir mytest
  - for all collection groups, maximum file age will be 3 days, output files will be written to the directory /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation/mytest/

  EcDlCleanupFilesOnDisk.pl TS1 -debug
  - for all collection groups, maximum file age will be 3 days, output files will written to the directory /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation/, and two additional files will be written to /usr/ecs/<MODE>/CUSTOM/temp/DPL/

- For a "cleanup following validate" run:
  EcDlCleanupFilesOnDisk.pl TS1 – collgroup "MOST BRWS" -maxFileAge 5 -outputDir mytest –fix

14.11.10 Running the Data Pool SoftLink Check Utility

EcDlLinkCheck.ksh found a 'broken' symbolic link in the public Data Pool directories, i.e., a link whose target does not exist. Public Data Pool directories contain only Browse links, so the symbolic link would be a browse link.

Most likely, the link was supposed to be removed and that failed for some reason. Note, though, that the utility may include links in the report that were only temporarily incorrect. Therefore, DAAC staff should verify that the reported links are indeed broken and then remove broken links via UNIX command or with –fix option.

Table 14.11-6 provides a description of these Command Line Parameters.

Table 14.11-6. Command Line Parameters

Parameter Name	Required	Description
DIRECTORY_TO_START CHECK	Yes	Directory to start looking for 'broken' symbolic links
FIX	No	Search and remove invalid links.

14.11.10.1 Running the Data Pool SoftLink Check Utility

1 Log in at the machine where the Data Pool SoftLink Check Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool SoftLink Check Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool SoftLink Check Utility, in the form of the following.

EcDlLinkCheck.ksh < DIRECTORY_TO_START_CHECK> <-fix>

Data Pool SoftLink Check Utility usage examples:

- **EcDlLinkCheck.ksh /datapool/TS2/user/FS1/MOLA –fix**
  The utility will search for broken links under /datapool/TS2/user/FS1/MOLA directory, then remove the invalid links.
  If the directory /datapool/TS2/user/FS1/MOLA does not exist or the file system FS1 is down, the utility will exit with code 1.
- **EcDlLinkCheck.ksh /datapool/TS2/user/FS1/MOLA**

  The utility will search for broken links under /datapool/TS2/user/FS1/MOLA directory, and write results to an output file with a list of filename with full path to /usr/ecs/<mode>/logs/EcDlLinkCheck.log

14.11.11 Running the Data Pool Online Archive Cleanup Utility

EcDlCleanupGranules.pl, a Data Pool Cleanup utility, provides a mechanism by which the ECS Operations Staff can remove granules and their associated metadata and browse files from the Data Pool disks and the corresponding ECS database inventory.

Qualification of a granule for cleanup is based on following criteria:

a. The utility will remove non-ECS granules only when DAAC staff explicitly requests their removal.

b. The utility will handle the deletion of non-ECS granuleIds specified on the command line or in a file.

c. The utility will transparently cleanup the Data Pool when collections reside on different file systems.

d. The utility will postpone the cleanup of a granule that is currently in use by the OMS CI, until such time as OMS relinquishes use of that granule.

e. The utility will only remove non-ECS granules by expiration date/time and retention priority when the –expired option is specified.

f. The utility will remove a collection directory if it is empty, as well as any link to the collection directory that was established during a collection move operation.

g. The utility will skip the cleanup of granules belong to collections on file systems that are marked unavailable. They will be retried next run.

h. The utility will export granules that will be deleted to ECHO at the start of program The utility will support a batch file delete if the –batchsize option is specified.

i. By default, the utility will handle recovery of unprocessed granules that were left in tables DlBcpGransToDelete and DlBatchGransToDelete from the failure of a previous program execution. EcDlCleanupGranules.pl provides a norecovery option.

j. The utility will check the syntax of the command line parameters and display the error and the correct command line syntax if the command line parameters fail the syntax check.

k. The utility will check command line input parameters, if there are any conflicting or invalid parameters detected, the utility will exit with an exit code of 1 and display the error and the correct command line input parameters.

l. When performing a cleanup on ECS granules the utility will update the Inventory Catalog to indicate the granule is stored in the “hidden” Online Archive, and remove all files for the granule from the Online Archive. This usage provides a mechanism for the Operator to restore an ECS granule to a “known state” after a publication failure. When running EcDlCleanupGranules with ECS granules, it is also necessary to run the

EcDlRestoreOlaFromTape utility to copy the files back to the Online Archive from the tape Archive.

m. The exit code is specified for the following situations:
   0 - successful cleanup with no discrepancies
   1 - failed to successfully run cleanup (internal error)
   2 - successful cleanup with discrepancies

Table 14.11-7 provides a description of Command Line Parameters.

Table 14.11-7. Command Line Parameters

Parameter Name	Required	Description
File	No	File name with a list of DPL granulesIds as input
Grans	No	a list of DPL granuleIds from the command line
Offset	No	Specifies hours before (negative) or after (positive) midnight of the previous day from which to delete. Defaults to zero. (Some examples: ***-offset 5*** would delete all granules which had expired as of 5 AM of the current day; ***-offset -5*** would delete all granules which had expired as of 7 PM yesterday ***-offset 72*** would delete all granules which will be expiring in 72 hours measured from the previous day's midnight).
Limit	No	Specifies limiting value used for determining which granules will be deleted. Will delete all granules with priority less than or equal to the specified limit. Must be within the range 1–255, 1 being the lowest priority and 255 being the highest priority. Defaults to value specified in configuration file.
Theme	No	Specifies the name of a theme for which cleanup is to be performed. The Cleanup Utility will clean up non-ECS granules that would otherwise qualify for cleanup only if the granules are associated with that theme, and remove the granules entirely if they are not associated with any other theme, otherwise only remove the cross references with that theme. The theme name must be enclosed in quotes (“).
batchSize	No	Process cleanup by batch files. Recommend the batchSize to 100
norecovery	No	Do not recover unprocessed granules that were left from the failure of a previous program execution. Also remove granules that were not deleted because they were on order or file system was unavailable
expired	No	Cleanup non-ECS granules by expiration date and retention priority

EcDlCleanupGranules Configuration File

The utility uses a configuration file, EcDlCleanupDataPool.CFG, located in the /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11-8 provides a description of Configuration Parameters.

Table 14.11-8. Configuration Parameters

Parameter Name	Description
DBUSERNAME	The Postgres login name.
DBSERVER	The name of the host running the PostgreSQL Server .
DBNAME	The name of the ECS database (always “ecs”).
DBSUBSYSTEM	The name of the subsystem that contains this utility. This controls the schema path used in the RDBMS. The value “aim” should always be used. The mode will be added to any schema names by the utility.
PGM_ID	Program identifier used as seed to generate database password.
DEFAULT_LIMIT	Default priority limit if a limit (-limit) is not provided via command line.
NUM_RETRIES	Number of times database operation will be attempted.
SLEEP_SEC	Number of seconds between retries.
MAX_ORPHAN_AGE	Maximum age in days in qualifying a file as an orphan. A file must have an age greater than or equal to this value in order to be considered as an orphaned file. The parameter value must be 3 days or greater.
URL_EXPORT_RETENTION_PERIOD	The maximum age in days that a URL_EXPORT will be retained. The suggested value for this field is “30”
ORDER_OUTPUT_COLLECTIONS	A list of collection groups that should not be processed during orphan validation. Files in these directories will be ignored when determining orphans. The suggested value for this field is “OUTPUTS BRWS”
MAX_ORDER_AGE	The number of days for which a file in the order only directory will not be counted as an orphan. Suggested value for this field is 15.

14.11.11.1 Running the Data Pool Online Archive Cleanup Utility

1 Log in at the machine where the Data Pool Online Archive Cleanup Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Online Archive Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Online Archive Cleanup Utility, in the form of the following.

- Cleanup failed publications (restoring granules to a "known state" using a file containing a list of granules
  EcDlCleanupGranules.pl <mode > -file <inputFile>
  [-batchSize] <batch size> -- optional

- Cleanup using a list of non-ECS granules
  EcDlCleanupGranules.pl <mode > -grans <listOfGranuleIds>
  [-batchSize] <batch size> -- optional

- Cleanup using an expiration date to delete non-ECS granules

  EcDlCleanupGranules.pl <mode > -expired
  [-offset] <# of hours> -- optional
  [-limit] <priority limit> -- optional
  [-theme] <themeName> -- optional
  [-batchSize] <batch size> -- optional

The MODE parameter is mandatory as the first parameter.

Data Pool Online Archive Cleanup Utility usage examples:

- **Cleanup using a file containing a list of granules:**
  EcDlCleanupGranules.pl TS1 –file myfile –batchSize 100

- **Cleanup using a list of granules**
  EcDlCleanupGranules.pl TS1 –grans "30987 90876"

- **Cleanup with -expired option**
  EcDlCleanupGranules.pl TS1 –expired –offset 5 -limit 300 –theme "test" -batchSize 100

- **The utility will create a log file that will contain the following information:**
  "Each file that has been removed"

14.11.12 Running the Data Pool Publish Utility

The DPL publish Utility is a command line tool that 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 insert granules into the Data Pool from AIM. Note that the Publish Utility does not perform the insert and/or publication actions directly instead, it submits requests to the Data Pool Action Driver to perform the work on its behalf.

Table 14.11-9 provides a description of Command Line Parameters.

Table 14.11-9. Command Line Parameters

Parameter Name	Description
-file <*input_file*>	Tells the publish utility to read the list of ECS ids of granules to be published from a file. *input_file* specifies the full path of the file.
-g <*id1*>,<*id2*>…	Specifies the ECS ids of the granules to publish on the command line. Any number of granules may be provided (within any limits the shell places on command line length).
-collection <shortname.versionid>	Tells the Publish Utility to publish all granules belonging to a given collection.
–maxnumconactions	Indicates the number of concurrent actions that may be submitted to the Data Pool Action Driver. This option can be use to limit the impact on existing operations. If not provided, it defaults to 5,000, which effectively assumes that it has exclusive use of the Action Driver.
-register	Indicates that the Publish Utility should make sure that the given granules exist in the Data Pool. Any granule that does not exist in the Data Pool will be inserted (registered). No granules will be published (placed into the public Data Pool). Granules may be inserted into the Data Pool even if they are logically deleted, or marked as hidden (i.e. DeleteFromArchive = 'H'). Granules will not be inserted if it is marked as deleted from archive (DeleteFromArchive = 'Y').
-publish	Indicates that the Publish Utility publish the given granules in the Data Pool. Only granules that already exist in the Data Pool will be published. Any granule that does not exist in the Data Pool will not be inserted. Granules that belong to a collection that is marked as not public (AllowPublishFlag='N'), or are logically deleted or hidden, will not be published. Note also, that older versions of a granule will not replace a newer version.

14.11.12.1 Running the Data Pool Publish Utility

1 Log in at the machine where the Data Pool Publish Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Publish Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

At the prompt, type the command to start the Data Pool Publish Utility, in the form of the following.

EcDlPublishUtilityStart <MODE> -ecs [-file <file_name_path> | -collection <ShortName.VersionId> | -g <ecsId1>[ ][,]<ecsId2>] [-theme <themeName>] [-batchlabel <batchLabel>] [-maxnumconactions <num>] [-register] [-publish] or $0 <MODE> -nonecs -file <file_name_path> [-theme <themeName>] [-batchlabel <batchLabel>] [-maxnumconactions <num>]

Data Pool Publish Utility usage examples

- ***EcDlPublishStart OPS –ecs –file /home/cmshared/granuleIds.txt***

Insert and publish granules for the granule ids contained in the specified file. The file contains one ECS granule id per line.

- ***EcDlPublishStart OPS –ecs –g 12345, 23456 -publish***

Publish the two hidden granules whose ECS ids are given.

- ***EcDlPublishStart OPS –ecs –collection MYD29P1D.004 –maxnumconactions 10***

Make sure all granules belonging to collection MYD29P1D version 4 are public in the Data Pool, limiting the number of concurrent Action Driver requests to 20. This is a low impact way to make sure a complete collection is public, but could take days to run to completion.

- ***EcDlPublishStart OPS –ecs –g 12345 –theme "test"***

Publish 1 ECS granule and establish the theme "test" to the granule.

- ***EcDlPublishStart OPS –nonecs –file /home/cmshared/nonecs_xml.txt***

Publish nonecs granules which are specified in a list of xml files in "nonecs_xml.txt".

14.11.13 Running the Data Pool UnPublish Utility

The DPL Unpublish Utility is a command line tool that unpublishes specified granules from the Data Pool. Granules may be specified in a file, or by command line.

The Unpublish utility was developed for the on-line archive capability. It will:

- unpublish the specified science granules.
- remove associated browse granule if permitted.

The Unpublish utility can also be used to unpublish granules which are marked for deletion in the AIM Inventory database (DeleteEffectiveDate is set, or DeleteFromArchive flag is set to "Y" or "H"), for example, as would occur after a run of the Granule Deletion Utility.

Table 14.11-10 provides a description of Command Line Parameters.

Table 14.11-10. Command Line Parameters

Parameter Name	Description
-file <*input_file*>	The file which contains a list of DPL granule ids for unpublish. Input_file specifies the full path and file name of the file.
-granules <*id1*>, <*id2*> …	DPL granule ids for unpublish.
-aim	Tells the unpublish utility to unpublish granules deleted from the AIM database. If this option is used, the –offset option should also be provided.
–offset <*#days*>	Specifies the past number of days for which to find deleted AIM granules. This option is only valid in conjunction with the –aim option.
-help	Display instructions to run the utility.

14.11.13.1 Running the Data Pool UnPublish Utility

1 Log in at the machine where the Data Pool Unpublish Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Unpublish Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Unpublish Utility, in the form of the following.

EcDlUnpublishStart.pl –mode <mode> [-file <input_file>] [-granules <id1>,<id2>…] [-aim –offset <#days>]

EcDlUnpublishStart.pl –help for instructions.

Data Pool Unpublish Utility usage examples:

- ***EcDlUnpublishStart.pl –mode OPS –file /home/cmshared/granuleIds.txt***

Unpublish public granules for the granuleIds contained in the specified file. The file contains one Data Pool granuleId per line.

- ***EcDlUnpublishStart.pl –mode OPS –granules 12345, 23456***

Unpublish public granules for the granuleIds specified in the command line, separated by ",".

- ***EcDlUnpublishStart.pl –mode OPS –aim –offset 12***

Unpublish granules deleted from the AIM database since the current time – 12 days.

14.11.14 Running the Data Pool Inventory Validation Utility

The Online Archive Validation Tool provides the EED Operations Staff with a command-line interface to identify the discrepancies within the state of granules AIM Inventory database.

Table 14.11-11 provides a description of Command Line Parameters.

Table 14.11-11. Command Line Parameters

Parameter Name	Required	Description
Mode	Yes	Specifies the mode of operation. The MODE parameter is mandatory as the first parameter
outputDir	No	Specifies the relative path under base directory /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation. Note: The base directory has to exist; The relative directory (only one level down) will created if it doesn't exist. This is where all the output files reside. If the relative path is not provided, the output files will go to the base directory.
suppressLDeleted	No	When identifying granules that are missing in the DPL database, don't include the ones that have been logically deleted (deleteEffectiveDate is not null) in the AIM database.
suppressDFAed	No	When identifying granules that are missing in the DPL database, don't include the ones that have been DFAed (DeleteFromArchive = "Y") in the AIM database.

14.11.14.1 Running the Data Pool Inventory Validation Utility

1 Log in at the machine where the Data Pool Inventory Validation Utility is installed (e.g., x4dpl01).

- The operator who is executing the script must have privileges for removing science, metadata, and browse files from the Data Pool disks.

2 To change to the directory for starting the Data Pool Inventory Validation Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Inventory Validation Utility, in the form of the following.

EcDlInventoryValidationTool.pl <command line parameters>

Data Pool Inventory Validation Utility usage examples:

- **`EcDlInventoryValidationTool.pl DEV04 –outputDir inventory`**

The relative directory under /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation where all the outputs will reside. It will be created if it doesn't exist. If not provided, the output files will go to /usr/ecs/<MODE>/CUSTOM/data/DPL/Validation by default.

- **`EcDlInventoryValidationTool.pl DEV04` -suppressLDeleted**

This checks the discrepancies in DPL and AIM databases and writes the output files in /usr/ecs/DEV04/CUSTOM/data/DPL/Validation/inventory directory. The output result won't include any granules that are logically deleted in AIM and missing in DPL.

- **`EcDlInventoryValidationTool.pl DEV04 –suppressDFAed`**

  When identifying granules that are missing in the DPL database, don't include the ones that have been DFAed (DeleteFromArchive = "Y") in the AIM database.

14.11.15 Running the Data Pool Checksum Verification Utility (Being replaced by Data Pool Checksum Verification Service (CVS))

The DataPool Checksum Verification utility (DPCV) 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. For example, the utility could be set up as a background process that would verify the checksum of a file every "Nth" month by specifying a checksum verification option based on time elapsed since the last time checksum was verified. The utility could also be run on-demand by the DAAC operator to verify checksum values for a particular set of files.

- 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.
- Upon detection of checksum verification failure after a configurable number of retry attempts, the utility will log detailed information about the failure which will include granule ID, ESDT, insert time, complete file path and file name, along with the checksum information -- including checksum type, checksum values (computed value vs. the corresponding value stored in database), the last time the file was checksummed, checksum origin (who performed the last checksum). This information will also be provided in a report produced by the utility at the end of a run.
- The verification report 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.
- This utility will be designed such that the checksum verification can be throttled so it does not impact on-going daily operations.

Table 14.11-12 provides a description of Command Line Parameters.

Table 14.11-12. Command Line Parameter

Parameter Name	Required	Description
verifyOnly	No	Optional parameter to specify whether to only verify existing checksum. When the option is present in the command line, DPCV will only verify checksum if it is present in the database; When the option is not present, DPCV will calculate a checksum for files that do not have checksum in database.
esdts	No	Optional parameter to specify ESDTs needs to be verified. Its value could be keyword ALL (meaning all ESDTs) or a specific list of ESDTS separated by "|". It cannot be combined with the file option.
insertBeginTime	No	Optional parameter to specify lower limit of granule ingest time used to qualify granules to be verified. It cannot be combined with the file option.
insertEndTime	No	Optional parameter to specify upper limit of granule ingest time used to qualify granules to be verified. It cannot be combined with the file option.
daysSinceLastChecksum	No	Parameter to specify the cut off value of number of days since the file is last checksummed. Files that are checksummed within the cut off value of days will not be checksummed again.
file	No	Parameter to specify a list of DataPool granule ids to be verified. It cannot be combined with the esdts, insertBeginTime or insertEndTime option.
percentage	No	Parameter to specify the percentage of files in the qualifying range that is verified.
fg	No	Parameter to specify the DPCV process to run as a foreground process. If present, it has to be the first parameter in the parameter list. By default, DPCV will run as a background process. This is reserved for cron job run.
noprompt	No	Parameter to specify the log file name not to be prompted back on the standard out. This is reserved for cron job run.

DataPool Checksum Verification Utility Configuration File

The DataPool Checksum Verification utility uses a configuration file: EcDlDpcv.properties, located in /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11-13 describes the configuration parameters.

Table 14.11-13. Configuration Parameters

Parameter Name	Description
PGM_ID	Program ID used for connecting to the database.
HOST_NAME	The host name where the program runs on.
DBUSERNAME	The user name for the RDBMS connection.
DBSERVER	The host name for the RDBMS server.
DBSERVERPORT	The port for the RDBMS supporting the mode
DBNAME	The DB name within the RDBMS
DBSUBSYSTEM	The RDBMS schema/subsystem (aim) hosting this utility
JDBC_DRIVER_CLASS	The Database jdbc driver class.
DB_RETRIES	The number of times the utility attempts to connect to the database before exiting. The recommended default is 5.
DB_SLEEPSECONDS	The number of seconds the utility waits ('sleep') between connection attempts. The recommended default is 10.
SQL_TIMEOUT_SECONDS	The number of seconds to timeout a db operation.
DPCV_EXPIRATION_TIME	The number of hours the utility uses to mark an un-finished process as expired.
DPCV_HISTORY_RETENTION_TIME	The number of days the utility uses to cleanup old DPCV run record in database.
SECONDS_BETWEEN_CHECKSUMS	The number of seconds between checksum operations
NUM_CHECKSUM_RETRIES	The number of retries on checksum failures
HOST_NAME	The host name where DPCV is running

14.11.15.1 Running the Data Pool Checksum Verification Utility

1 Log in at the machine where the Data Pool Checksum Verification Utility is installed (e.g., x4dpl01).

- The operator who is executing the script must have privileges for removing science, metadata, and browse files from the Data Pool disks.

2 To change to the directory for starting the Data Pool Checksum Verification Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Checksum Verification Utility, in the form of the following.

EcDlDpcvStart [-fg] <MODE> [-verifyOnly] [-esdts (keyword ALL or list of ShortName.VersionId e.g. ALL or "AE_Land.086|PH.001|QA.001")] [-insertBeginTime (MM/DD/YYYY HH:MM:SS)] [-insertEndTime (MM/DD/YYYY HH:MM:SS)] [-daysSinceLastChecksum (number of days)] [-file (text file containing DataPool GranuleIds)] [-percentage (integer from 0-100)] [-noprompt]

Data Pool Checksum Verification Utility usage examples:

- For all granules ingested within a period of time run:

```
EcDlDpcvStart OPS –verifyOnly –esdts ALL –insertBeginTime “11/27/2008 00:00:00” –insertEndTime “12/25/2008 23:59:59”
```

The DataPool Checksum Verification utility will perform checksum verification for all granule files ingested between Thanksgiving and Christmas that have existing checksum information.

```
EcDlDpcvStart OPS –verifyOnly –esdts ALL –insertBeginTime “11/27/2008 00:00:00” –insertEndTime “12/25/2008 23:59:59” –percentage 50
```

The DataPool Checksum Verification utility will perform checksum verification for 50% of the granule files ingested between Thanksgiving and Christmas that have existing checksum information.

```
EcDlDpcvStart OPS –verifyOnly –esdts ALL –insertBeginTime “11/27/2008 00:00:00” –insertEndTime “12/25/2008 23:59:59” –daysSinceLastChecksum 30
```

The DataPool Checksum Verification utility will perform checksum verification for all the granule files ingested between Thanksgiving and Christmas that have existing checksum information and haven’t been verified for at last 30 days.

- For granules belong to a list of specified ESDTs ingested within a period of time run:

```
EcDlDpcvStart OPS –esdts “AST_L1A.003|MOD29P1D.005” –insertBeginTime “11/27/2008 00:00:00” –insertEndTime “12/25/2008 23:59:59”
```

The DataPool Checksum Verification utility will perform checksum verification for all granule files that are of ESDT AST_L1A.003 or MOD29P1D.005 ingested between Thanksgiving and Christmas. If there is no existing checksum information, DPCV will calculate one based on the default checksum type and insert it into the database.

- For a "file" run:

```
EcDlDpcvStart OPS –file dplgranuleids.txt
```

The DataPool Checksum Verification utility will perform checksum verification for all granule files that are listed in the dplgranuleids.txt.

- For a cron run:

```
EcDlDpcvStart –fg OPS –noprompt –verifyOnly –esdts ALL –daysSinceLastChecksum 30
```

Put the above in the crontab to set up the cron job to verify checksum for files that have not been verified for at least 30 days.

14.11.16 Running the Restore Online Archive from Tape Utility

The ***RestoreOlaFromTape*** utility will repair 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. This is because *RestoreOlaFromTape* does not have the capability to repair Data Pool inventory database entries. In all other cases, granules must be restored using the Publish utility (e.g., if file entries or browse cross references are missing, or Data Warehouse entries for public granules were damaged or lost). The publish utility has the capability to reconstruct the Data Pool inventory entries for a granule.

The ***RestoreOlaFromTape*** utility shall:

- Restore defective granules from their tape archive location.
- Verify the checksum of the tape copy.
- Rename the files according to Data Pool rules.
- Restore granule metadata files from the XML file archive.
- Restore browse symbolic links for the science granule that are restored.
- Restore browse granules or files from the browse file archive, which is a disk archive. If the corrupted or lost browse files belong to a public browse granule, the corresponding browse images will be extracted from the original browse file.

In addition, the ***RestoreOlaFromTape*** utility shall:

- Optimize the restore of the files from the tape archive by organizing them by tape. Within a collection of files from the same tape, files will be organized in ascending block number order. This organization will optimize the tape read operations.
- Allow configurable parallelization of the tape restore operations by providing a configuration parameter that specifies the number of tape drives to be used for the restore operation. Please note that for a given tape, no concurrent/parallel access will be provided. The proposed behavior is based on tape access tests that were conducted for DPAD tape access optimization is ECS release 7.20.
- Manage the capacity demand of bulk repairs to avoid serious degradation of operational workloads (e.g., limits on concurrent tape mounts, tape reads, on-line archive writes, checksumming operations).

Input is provided via an input file.

Table 14.11-14 provides a description of Command Line Parameters.

Table 14.11-14. Command Line Parameters

Parameter Name	Description
-file <file name>	Name and path of the input file to be used by the utility
-contents <contents type>	The type of contents present in the file. Any of the following options are allowed: ⇒ dplids: the input file contains the DPL granule IDs or browse IDs of the on-line archive granules that must be repaired ⇒ ecsids: the input file contains the ECS granule IDs (dbIDs) or browse IDs of the on-line archive granules that must be repaired ⇒ dplfiles: the input file contains the DPL filenames of the files that must be repaired. Browse files in JPG or HDF format are also accepted
[-restoremisbr]	Indicates if the utility should restore MISBR browse granule in the DPL. If the parameter is not set, the MISBR browse granule will not be restored. NOTE: This parameter will cause the utility to MISBR browse granule only when the configuration parameter MISR_SPECIAL_PROCESSING is set to "Y".
[-restorelinks | -restorelinksonly *]*	Indicates if the utility should restore browseQA/PH symbolic linkage file for the given science granule. When '-restorelinks' is not provided in command line, only science granule metadata and data files are restored. When '-restorelinks' is specified in command line, both science granule files and browse/QA/PH symbolic links are restored. When '-restorelinks only' is specified in command line, only browse/QA/PH symbolic links are restored. Note: A list of science granule DPL Ids or ECS Ids should be used to restore browse/QA/PH symbolic links.
[-restorexmlonly]	Indicates if the utility should restore granule metadata file only. When '-restorexmlonly' is not provided in command line, both granule metadata and data files are restored. When '-restorexmlonly' is specified in command line, only granule metadata file are restored.
[-recovery no]	Indicates if the utility should not recover from the last unsuccessful run. By default, the utility will disregard the current input file and read and complete the latest unsuccessful run (request) from the database. NOTE: if NO recovery is desired, the last unsuccessful run will be set to "Aborted" in the database.
[-email recipient_email_address]	Indicates the Email address of the user to receive the termination status of the utility. Multiple email addresses may be entered, separated by semicolons. If errors occurred, detail about the errors or how to retrieve the details will be present in the Email message.

Configuration File Format – RestoreOlaFromTape.properties

The configuration file contains vital details about how the utility will operate. The utility will exit immediately if a configuration file is not available. The file is a plain text ASCII file and has the following format. Table 14.11-15 describes the configuration parameters.

Table 14.11-15. Configuration Parameters (1 of 2)

Parameter Name	Description
PGM_ID	Database connectivity, the ID (10000030) is used to decrypt the DB password based on ECS standards
DBSERVER	The host name for the PostgreSQL data server
DBSERVERPORT	The port number for the PostgreSQL server on the specified host
DBUSERNAME	The user name (EcDlRestoreOlaFromTape) used to login to the PostgreSQL server
DBNAME	The name of the RDBMS database (ecs)
DBSUBSYSTEM	The name of the subsystem for this utility. This controls the RDBMS "schema path" to be used by the utility.
DB_POOL_SIZE	Database connectivity, the database connection pool size for the AIM.
JDBC_DRIVER_CLASS	Database connectivity, JDBC driver class.
DB_RETRIES	Number of retries of a RETRYABLE DB operation (e.g. deadlock)
DB_SLEEPSECONDS	Number of sleep seconds between retries
SQL_TIMEOUT_SECONDS	Time in seconds that an SQL query will execute before timing out.
DEBUG_MESSAGES	(Y/N) indicates if detailed debugging information will be written to the log file.
CHECKSUM_SERVICE_HOSTS	The service hosts to be used for checksumming. The service hosts are configured in the format of <host_name_1>:<port_num>:<num_of_slots_1>, <host_name_2>:<port_num>:<num_of_slots_2>, …
CHECKSUM_TIMEOUT	Number of seconds before timeout a checksum operation
COPY_SERVICE_HOSTS	The service hosts to be used for copy operation. The service hosts are configured in the format of <host_name_1>:<port_num>:<num_of_slots_1>, <host_name_2>:<port_num>:<num_of_slots_2>, …
COPY_TIMEOUT	Number of seconds before timeout a copy operation
SNSM_QS_HOST	StorNext Metadata Server Quick Server host
SNSM_QS_PORT	StorNext Metadata Server Quick Server port
CONNECT_QS_RETRIES	Number of retries for Quick Server call failures
CONNECT_QS_RETRY_SECONDS	Number of sleep seconds between the retries of a Quick Server call

Table 14.11-15. Configuration Parameters (2 of 2)

Parameter Name	Description
COPY_BLOCK_SIZE_KBYTES	copy block size used by EcAdCopy
COPY_RETRIES	number of retries for EcAdCopy on read/write failures
REQUEST_RETENTION_DAYS	The request retention time in days
EMAIL_SMTP_HOST	The Email SMTP server host
EMAIL_FROM_ADDRESS	Outbound email from address to operator
DEDICATED_TAPE_DRIVES	Number of tape drives (tapes) that can be concurrently used for restores. Recommended values 4 or DAAC defined.
CONCURRENT_RESTORES	Number of restores that can be issued concurrently for a given drive containing a restore tape. The restores will not happen concurrently per say but they will be enqueued by the tape management COTS and will be executed concurrently. The parameter optimizes tape reads by preventing the tape from being stopped during the restore. Recommended values can be anywhere between 5 and 10.
DTD_VERSION	DTD Version of xml files for DAP, PH, QA granules
DATA_CENTER_ID	DATA_CENTER_ID of xml files for DAP, PH, QA granules
CONCURRENT_GET_FILETAPEINFO	Number of threads that can be issued concurrently when retrieving and updating file tape information. Recommended values 10.
MISR_SPECIAL_PROCESSING	controls if MISR Browse special processing module is ON (Y) or OFF (N)

14.11.16.1 Running the Restore Online Archive from Tape Utility

1 Log in at the machine where the Restore Online Archive from Tape Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Restore Online Archive from Tape Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the Restore Online Archive from Tape Utility, in the form of the following.

```
EcDlRestoreOlaFromTapeStart     -mode <mode> -file <file name and path
with contents specified by –contents parameter> -contents dplids |
ecsids | dplfiles [-restoremisbr] [-restorelinks | -restorelinksonly] [-
restorexmlonly] [-recovery no] [-email <usertoreceivestatusemail>]
```

Restore Online Archive from Tape Utility usage examples:

- **EcDlRestoreOlaFromTapeStart -mode OPS -file** </home/john/dplids.txt> **-contents dplids –recovery no –email cmshared@ecs.nasa.gov**

  Restores to the on-line archive from tape the DPL granules with the DPL IDs present in the dplids.txt flat file. The utility will NOT recover from an unsuccessful previous

run and will set the restore from tape request to "Aborted" in the DPL database for the unsuccessful previous run. An Email with the request status will be sent to the cmshared@ecs.nasa.gov once the utility finishes the current request.

- **EcDlRestoreOlaFromTapeStart -mode OPS -file </home/john/ecsids.txt> -contents ecsids –recovery no**

  Restores to the on-line archive from tape the DPL granules with the ECS IDs present in the ecsids.txt flat file. The utility will NOT recover from an unsuccessful previous run and will set the restore from tape request to "Aborted" in the DPL database for the unsuccessful previous run.

- **EcDlRestoreOlaFromTapeStart -mode OPS -file </home/john/dplfiles.txt> -contents dplfiles –recovery no**

  Restores to the on-line archive from tape the DPL files with the full path and filenames specified in the dplfiles.txt flat file. The utility will NOT recover from an unsuccessful previous run and will set the restore from tape request to "Aborted" in the DPL database for the unsuccessful previous run.

- **EcDlRestoreOlaFromTapeStart -mode OPS -file </home/john/dplids.txt> -contents dplids**

  Reruns the previous unsuccessful restore from tape request based on the information saved in the DPL database tables used by the utility. The current input file is NOT used. In order to restore the granules specified In the input file, the utility must be restarted after the recovery run completes.

14.11.17 Running the Restore Tape from Online Archive Utility

The ***RestoreTapeFromOla*** utility will repair individual files that are lost or corrupted on tape based on the primary file instance that is present in the on-line archive. The files being restored must be inventoried both in the AIM and DPL databases because the utility does not create new AIM or DPL database entries. The utility shall:

- Allow DAAC staff to replace individual granules in the tape archive from their on-line copy (after verification that the on-line copy is still intact). Files will be renamed appropriately to conform to the tape archive naming conventions.

- Manage the capacity demand of bulk repairs to avoid serious degradation of operational workloads (e.g., limits on concurrent tape mounts, on-line archive reads, tape writes, and checksumming operations).

Notes:

- Since the on-line Browse archive is not part of the Data Pool, this repair function will not cover Browse archive repairs. They can be repaired using StorNext utilities like today.

- The ***RestoreTapeFromOla*** utility will not cover XML metadata files. The XML file archive restore function is performed using other procedures.

Input is provided via an input file. Table 14.11-16 provides a description of Command Line Parameters.

Table 14.11-16. Command Line Parameters (1 of 2)

Parameter Name	Description
-file <file name>	Name and path of the input file to be used by the utility
-contents <contents type>	The type of contents present in the file. Any of the following options are allowed: ⇒ mediaids: the input file contains the media IDs (tape labels) of the tapes that were lost / damaged. ⇒ tapefiles: the input file contains the complete file names and paths of the tape files that must be repaired. ⇒ dplids: the input file contains the DPL granule IDs of the tape granules that must be repaired ⇒ ecsids: the input file contains the ECS granule IDs (dbIDs) of the tape granules that must be repaired
[-removereadonlyfile]	Indicates that the utility should remove the original tape file from archive if the file cannot be restored to its original location. The utility always restores the file to the currently opened volume groups. Details below: If the option is not present, the utility will not try to remove the original tape file from archive. If the file cannot be restored to its original location, it will be restored in the currently opened volume group with the new file name, and the original file will remain on tape at the original location, without any corresponding AIM inventory record. The utility will not even try to remove the original file, regardless of the permissions on it. If the option is present, the utility will try to remove the original file. The file restored has the same name as original file. The utility will prompt the user to verify that the permissions to the RO volume group have been changed to RW if necessary: Have you changed the RO permissions to RW in the RO volume group affected by the restore (Y/N)? On Y the utility will proceed and: If the permissions to the affected files are RW, it will remove the original files that are affected. If the permissions to the affected files are RO, it will FAIL the restore of the granules involved. It is the responsibility of DAAC operations to inspect the log, identify the failed granules and rerun the utility after setting the correct RW permissions to the closed Volume Group. The reason for the failure is that if we would in fact restore the granule, the original file will remain on tape at the original location, and other application will find the bad copy. On N the utility will exit.

Table 14.11-16. Command Line Parameters (2 of 2)

Parameter Name	Description
[-recovery no]	Indicates that the utility should not recover from the last unsuccessful run. By default, the utility will disregard the current input file and read and complete the latest unsuccessful run (request) from the database. NOTE: if NO recovery is desired, the last unsuccessful run will be set to "Aborted" in the database.
[-email recipient_email_address]	Indicates the Email address of the user to receive the termination status of the utility. Multiple email addresses may be specified, separated by semicolons. If errors occurred, detail about the errors or how to retrieve the details will be present in the Email message.

Configuration File Format – RestoreTapeFromOla.properties

The configuration file contains vital details about how the utility will operate. The utility will exit immediately if a configuration file is not available. The file is a plain text ASCII file and has the following format. Table 14.11-17 describes the configuration parameters.

Table 14.11-17. Configuration Parameters (1 of 2)

Parameter Name	Description
PGM_ID	Database connectivity, the ID (10000031) is used to decrypt the DB password based on ECS standards
DBSERVER	The host name for the PostgreSQL data server
DBSERVERPORT	The port number for the PostgreSQL server on the specified host
DBUSERNAME	The user name (EcDlRestoreOlaFromTape) used to login to the PostgreSQL server
DBNAME	The name of the RDBMS database (ecs)
DBSUBSYSTEM	The name of the subsystem for this utility. This controls the RDBMS "schema path" to be used by the utility.
DB_POOL_SIZE	Database connectivity, the database connection pool size for the AIM.
JDBC_DRIVER_CLASS	Database connectivity, JDBC driver class.
DB_RETRIES	Number of retries of a RETRYABLE DB operation (e.g. deadlock)
DB_SLEEPSECONDS	Number of sleep seconds between retries
SQL_TIMEOUT_SECONDS	Time in seconds that an SQL query will execute before timing out.
DB_BATCH_SIZE	The batch size for the database retrieve operations, its default value is 50

Table 14.11-17. Configuration Parameters (2 of 2)

Parameter Name	Description
DEBUG_MESSAGES	(Y/N) indicates if detailed debugging information will be written to the log file.
CHECKSUM_SERVICE_HOSTS	The service hosts to be used for checksumming. The service hosts are configured in the format of <host_name_1>:<port_num>:<num_of_slots_1>, <host_name_2>:<port_num>:<num_of_slots_2>, …
CHECKSUM_TIMEOUT	Number of seconds before timeout a checksum operation
COPY_SERVICE_HOSTS	The service hosts to be used for copy operation. The service hosts are configured in the format of <host_name_1>:<port_num>:<num_of_slots_1>, <host_name_2>:<port_num>:<num_of_slots_2>, …
COPY_TIMEOUT	Number of seconds before timeout a copy operation
SNSM_QS_HOST	StorNext Metadata Server Quick Server host
SNSM_QS_PORT	StorNext Metadata Server Quick Server port
SNSM_QS_OUTPUT_DIR	The directory where StorNext Metadata Server Quick Server puts the output files. The directory should be visible from both the host where the StorNext Metadata Server Quick Server runs and from the host where the RestoreTapeFromOla utility runs. The directory should not be shared with other applications.
CONNECT_QS_RETRIES	Number of retries for Quick Server call failures
CONNECT_QS_RETRY_SECONDS	Number of sleep seconds between the retries of a Quick Server call
COPY_BLOCK_SIZE_KBYTES	copy block size used by the copy utility
COPY_RETRIES	number of retries for the copy utility on read/write failures
REQUEST_RETENTION_DAYS	The request retention time in days
EMAIL_SMTP_HOST	The Email SMTP server host
EMAIL_FROM_ADDRESS	Outbound email from address to operator
CONCURRENT_TAPE_ARCHIVE_CACHE_WRITES	Number of concurrent writes to the tape archive cache. This is a throttling mechanism that controls how many files can be concurrently copied from the on-line archive to tape.

14.11.17.1 Running the Restore Tape from Online Archive Utility

1 Log in at the machine where the Restore Tape from Online Archive Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Restore Tape from Online Archive Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the Restore Tape from Online Archive Utility, in the form of the following.

```
EcDlRestoreTapeFromOlaStart -mode <mode> -file <file name and path of
input file whose contents type is specified by the –contents parameter>
-contents <mediaids | tapefiles | dplids | ecsids> [-recovery no] [-
email <usertoreceivestatusemail>]
```

Restore Tape from Online Archive Utility usage examples:

- **EcDlRestoreTapeFromOlaStart -mode OPS -file </home/john/mediads.txt> -contents mediaids –recovery no –email cmshared@ecs.nasa.gov**

  Restores all files on the tape(s) specified in the mediaids.txt input file from their on-line archive copy. The utility will NOT recover from an unsuccessful previous run and will set the previous restore on-line archive to tape request to "Aborted" in the DPL database. An Email with the request status will be sent to the cmshared@ecs.nasa.gov once the utility finishes the current request.

- **EcDlRestoreTapeFromOlaStart -mode OPS -file </home/john/tapefiles.txt> -contents tapefiles –recovery no**

  Restores the tapes files specified in the tapefiles.txt input file from their on-line archive copy. The utility will NOT recover from an unsuccessful previous run and will set the previous restore on-line archive to tape request to "Aborted" in the DPL database.

- **EcDlRestoreTapeFromOlaStart -mode OPS -file </home/john/dplids.txt> -contents dplids –recovery no**

  Restores the granules with the DPL IDs specified in the dplids.txt input file from their on-line archive copy. The utility will NOT recover from an unsuccessful previous run and will set the previous restore on-line archive to tape request to "Aborted" in the DPL database.

- **EcDlRestoreTapeFromOlaStart -mode OPS -file </home/john/ecslids.txt> -contents ecsids**

  Restores the granules with the ECS IDs specified in the ecsids.txt input file from their on-line archive copy. If there was an unsuccessful previous run, the utility will recover from that run based on the information saved in the DPL database tables used by the utility, and the current input file will not be used. The current runs must be restarted after the recovery run is completed.

14.11.18 Running the Archive Checksum Verification Utility

The Archive Checksum Validation utility (ACVU) provides a mechanism by which the ECS Operations Staff can perform checksum verification of files in the AIM archive. The utility allows the operator to specify which files to verify, by sampling files based on media ID (a single media ID or a list of media IDs), volume group (a single volume group or a list of volume groups), or granule ID (a single granule ID, a list of granule IDs, or an input file containing granule IDs). The operator may also restrict verification to files which have not had their checksum verified within an operator-specified time period.

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.

Upon detection of checksum verification failure after a configurable number of retry attempts (NUM_CHECKSUM_RETRIES in configuration file), the utility will log detailed information about the failure including media ID, volume group, granule ID, ESDT, insert time, complete file path and file name, along with the checksum information -- including checksum type, checksum values (computed value vs the corresponding value stored in database), the last time the file was checksummed, and checksum origin (who performed the last checksum). The checksum status of the file will be updated in the AIM Inventory database to mark it as a case of checksum verification 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. This utility is designed such that the checksum verification can be throttled (by adjusting the number of concurrent tapes and number of concurrent tape reads) so it does not impact on-going daily operations. Table 14.11-18 provides a description of Command Line Parameters.

Table 14.11-18. Command Line Parameter (1 of 2)

Parameter Name	Required	Description
calculate	No	Optional parameter to specify whether to calculate and store checksums for files found currently without checksums.
days	No	Optional parameter to specify days since last checked.
percent	No	Optional parameter to specify percentage of files to check.
norecovery	No	Optional parameter to specify not to recover from previous run.
volumegroup	Yes, if mediaid, granuleid, or file parameters are not present	Parameter to specify volumegroups whose files will have their checksum verified. This is a comma separated list of one or more volume groups (no spaces). Volumegroups should be specified by full path name.
mediaid	Yes, if volumegroup, granuleid, or file parameters are not present	Parameter to specify mediaids whose files will have their checksum verified. This is a comma separated list of one or more mediaids (no spaces).
granuleid	Yes, if volumegroup, mediaid, or file parameters are not present	Parameter to specify granules whose files will have their checksum verified. This is a comma separated list of one or more granule ids (no spaces).

Table 14.11-18. Command Line Parameter (2 of 2)

Parameter Name	Required	Description
file	Yes, if volumegroup, mediaid, or granuleid parameters are not present	Parameter to specify the name of an input file containing granuleids of granules whose files will have their checksum verified. Granuleids should be listed in the input file separated by newlines.
outputDir	No	Parameter to specify directory for error files under /workingdata/emd/<MODE>/Acvu

Archive Checksum Validation Utility Configuration File

The Archive Checksum Validation utility uses a configuration file, EcDsAmAcvu.CFG, located in /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11-19 describes the configuration parameters.

Table 14.11-19. Configuration Parameters (1 of 2)

Parameter Name	Description
DBUSERNAME	The user name for the RDBMS connection.
DBSERVER	The host name for the RDBMS server.
DBSERVERPORT	The port for the RDBMS supporting the mode.
DBNAME	The DB name within the RDBMS..
DBSUBSYSTEM	The RDBMS schema/subsystem (aim) hosting this utility.
PGM_ID	Program identifier used as seed to generate database password.
NUM_RETRIES	Number of times database operation will be attempted.
RETRY_INTERVAL	Number of seconds between retries.
SNSM_HOST	The Stornext host
SNSM_PORT	The Stornext port
SNSM_TEMP_DIR	The directory to place file listings for tapes. This directory should be cross mounted between the Stornext host and the oml host. The suggested directory is /workingdata/emd/<MODE>/Acvu/TempDir. The directory should be readable by cmshared with write permissions for the Stornext user (smuser). To achieve this we suggest having the directory owned by smuser, a groupid of cmshared, and 775 permissions. This directory should be cleaned up manually.
MAX_BLOCKINFO_PROCESSES	Number of processes to get block info from media concurrently.
MAX_TAPE_READS	Number of read requests per tape at once
MAX_CONCUR_TAPES	Number of tapes that can be read from at once

Table 14.11-19. Configuration Parameters (2 of 2)

Parameter Name	Description
NUM_CHECKSUM_RETRIES	Number of times a checksum will be attempted.
VALIDATION_OUTPUT_DIR	The default directory to place error output files. The directory should be readable/writable by cmshared. The suggested directory is /workingdata/emd/<MODE>/Acvu.

14.11.18.1 Running the Archive Checksum Verification Utility

Log in at the machine where the Archive Checksum Verification Utility is installed (e.g., x4oml01).

2 To change to the directory for starting the Archive Checksum Verification Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the Archive Checksum Verification Utility, in the form of the following.

```
EcDsAmAcvu.pl <MODE> [-calculate]
                          [-days <NUMBER OF DAYS>]
                          [-percent <PERCENT 1-100>]
                          [-norecovery]
                          (-volumegroup <VOLUME GROUPS> |
                           -mediaid <MEDIAIDS> |
                           -granuleid <GRANULEIDS> |
                           -file <FILENAME>) |
                          [-outputDir <DIRECTORY>]
```

Archive Checksum Verification Utility usage examples:

- For a "volumegroup" run:

```
EcDsAmAcvu.pl OPS –volumegroup /stornext/snfs1/OPS/MODIS
```

The Archive Checksum Validation Utility will perform checksumming for all files in specified volumegroup (/stornext/snfs1/OPS/MODIS).

```
EcDsAmAcvu.pl OPS –volumegroup
  /stornext/snfs1/OPS/MODIS,/stornext/snfs1/OPS/ASTER –percent 50
```

The Archive Checksum Validation Utility will perform checksumming for 50% of the files in the specified volume groups.

- For a "media id" run:

```
EcDsAmAcvu.pl OPS –mediaid VG7029
```

The Archive Checksum Validation Utility will perform checksumming for all files on the specified tape

```
EcDsAmAcvu.pl OPS –mediaid VG7029,TG8024 –days 10
```

The Archive Checksum Validation Utility will perform checksumming for the files on the specified tapes which have not been verified in the past 10 days.

- For a "granuleid" run:

```
EcDsAmAcvu.pl OPS –granuleid 22083,22085,22087
```

The Archive Checksum Validation Utility will perform checksumming for the files related to granules 22083, 22085, and 22087in OPS mode

```
EcDsAmAcvu.pl OPS –granuleid 22083,22085,22087 -calculate
```

The Archive Checksum Validation Utility will perform checksumming for the files related to granules 22083, 22085, and 22087in OPS mode and if the files do not have a checksum, one will be calculated for it.

- For a "file" run:

```
EcDsAmAcvu.pl OPS –file granuleids.txt
```

The Archive Checksum Validation Utility will perform checksumming for the files related to granules specified in granuleids.txt

```
EcDsAmAcvu.pl OPS –file granuleids.txt -norecovery
```

The Archive Checksum Validation Utility will ignore recovery for any previous run and perform checksumming for the files related to granules specified in granuleids.txt

14.11.19 Running the XML Check Utility

The XML Check utility provides a mechanism by which the ECS 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 seven command line parameters that may be used. Table 14.11-20 provides a description of Command Line Parameters.

Table 14.11-20. Command Line Parameter

Parameter Name	Required	Description
days	No	Optional parameter to specify days since last checked.
percent	No	Optional parameter to specify percentage of files to check
ESDT	Yes, if granuleid or file parameters are not present	Parameter to specify which ESDTs to check. This is a comma separated list (no spaces). Can also specify “ALL” to include all ESDTs.
startdate	No	Optional parameter used with –ESDT option. Specifies starting insert date to use for ESDTs.
enddate	No	Optional parameter used with –ESDT option. Specifies ending insert date to use for ESDTs.
granuleid	Yes, if ESDT or file parameters are not present	Parameter to specify which granules to check. This is a comma separated list (no spaces).
file	Yes, if ESDT or granuleid parameters are not present	Parameter to specify which granules to check. Granule ids should be listing in a file separated by newlines.
outputDir	No	Parameter to specify directory for error files under /workingdata/emd/<MODE>/Xcu

XML Check Configuration File

The XML Check utility uses a configuration file, EcDsAmXcu.CFG, located in /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11-21 describes the configuration parameters.

Table 14.11-21. Configuration Parameters (1 of 2)

Parameter Name	Description
DBUSERNAME	The user name for the RDBMS connection
DBSERVER	The host name for the RDBMS server.
DBSERVERPORT	The port for the RDBMS supporting the mode.
DBNAME	The DB name within the RDBMS.
DBSUBSYSTEM	The RDBMS schema/subsystem (aim) hosting this utility.
PGM_ID	Program identifier used as seed to generate database password.

Table 14.11-21. Configuration Parameters (2 of 2)

Parameter Name	Description
NUM_RETRIES	Number of times database operation will be attempted.
RETRY_INTERVAL	Number of seconds between retries.
MAX_CONCUR_CHECKS	Number of concurrent calls to xmllint that will be allowed.
VALIDATION_OUTPUT_DIR	The default directory to place error output files. The directory should be readable/writeable by cmshared. The suggested directory is /workingdata/emd/<MODE>/Xcu

14.11.19.1 Running the XML Check Utility

1 Log in at the machine where the XML Check Utility is installed (e.g., x4oml01).

2 To change to the directory for starting the XML Check Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the XML Check Utility, in the form of the following.

The XML Check utility should be started by the user cmshared (or similar). The XML Check utility is started by entering the following command:

EcDsAmXcu.pl <mode> <command line parameters>

XML Check Utility usage examples:

- For an "ESDT" run:

```
EcDsAmXcu.pl OPS –ESDT ALL
```

The XML Check Utility will perform checking for all xml files in OPS mode

```
EcDsAmXcu.pl OPS –ESDT AST_L1A.003,MOD29.005 –startdate Jan 20 2008
-enddate Dec 1 2008
```

The XML Check Utility will performed checking for all AST_L1A.003 and MOD29.005 xml files whose granules have been inserted between Jan 20 2008 and December 1 2008.

```
EcDsAmXcu.pl OPS –ESDT AST_L1B.003 –percent 50 –days 10
```

The XML Check Utility will perform checking for 50% of AST_L1B.003 granules which have not been checked in the last 10 days.

- For a "granuleid" run:

```
EcDsAmXcu.pl OPS –granuleid 22083,22085,22087
```

The XML Check Utility will perform checking for the xml files related to granules 22083, 22085, and 22087in OPS mode

- For a "file" run:

  EcDsAmXcu.pl OPS –file granuleids.txt

  The XML Check Utility will perform checking for the xml files related to granules specified in granuleids.txt

---

14.11.20 Running the Data Pool Band Backfill Utility

The DPL Backfill Utility 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

For each Data Pool granuleId in its input file, the utility will perform the following steps:

1. Validate that the granule is in the hidden Data Pool. The granules can belong to DPL Ingest (IsOrderOnly = H) or to OMS (IsOrderOnly = Y).

2. Validate that the granule belongs to a convert-enabled ESDT.

3. Validate that the Inventory database contains no band information for this granule.

4. Extract the band information from the granule data files and produce a .BandHeader file. This step is performed by invoking an external script (../custom/utilities/EcDlAdHEGStart). The same script is also used by the new Data Pool Action Driver to create the .BandHeader file during granule registrations. Note: for a multi-file granule, the first file that contains band information will be used.

5. Parse the .BandHeader file and insert the necessary information in the ECS database aim schema. The .BandHeader file will be removed once it has been parsed.

6. Request the publication of the backfilled granule by inserting a record in the DlInsertActionQueue table in the Inventory database.

7. Process the next granule in the input file. Note: if an error is encountered during the processing of a granule, the error is logged and the utility continues with processing of the subsequent granules.

Table 14.11-22 provides a description of Command Line Parameters.

Table 14.11-22. Command Line Parameters

Parameter Name	Description
-mode <mode>	Specifies the mode of operation (OPS, TS1, etc.)
-file <input file>	Specifies the full path and file name of the file containing the Data Pool granule IDs of the granules that need to be populated with band information. The file is a flat ASCII file and it contains one Data Pool granuleId per line.

14.11.20.1 Running the Data Pool Band Backfill Utility

1 Log in at the machine where the Data Pool Band Backfill Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Band Backfill Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the Data Pool Band Backfill Utility, in the form of the following:

- **`EcDlBandBackfillUtilityStart –mode <mode> -file <input file>`**

Data Pool Band Backfill Utility usage examples:

- **`EcBandBackfillUtilityStart –mode OPS –file /home/cmshared/granuleIds.txt`**

Backfills the band information and requests the DPL publication for the granuleIds contained in the specified file. The file contains one Data Pool granuleId per line.

14.11.21 Running the Data Pool Remove Collection Utility [DELETED]

The DPL Maintenance GUI provides the functionality to remove the collection from the Data Pool.

14.11.22 Running the Data Pool Cloud Cover Utility [DELETED]

With the removal of Data Pool Database, Cloud Cover utility is no longer in 8.2.

14.11.23 Running the Data Pool Checksum Verification Service

The Data Pool Checksum Verification Service (CVS) provides a mechanism by which the ECS Operations Staff can perform checksum verification of files in the Data Pool. It runs as a

background server process, and requests for file verification are submitted to it via the database using a utility script.

- The server process is highly configurable, and permits throttling of checksum operations by host and/or file system.
- The result of each verification will be logged to a special CVS log file (DlCvChecksum.log) in the modes data/DPL directory. The information logged includes the time stamp, Data Pool granule ID, and the pass/fail state. In the case of a failure, the failure reason will also be logged, e.g file size mismatch, file missing, granule no longer exists, checksum value mismatch, etc.
- Upon successful checksum verification, it will update the last checksum verification timestamp in the AIM Inventory database for each file verified.
- Upon detection of a checksum verification failure, it will update the files checksum status to indicate the failure.

Table 14.11-26 provides a description of Command Line Parameters.

Table 14.11-26. Command Line Parameter

Parameter Name	Required	Description
mode	Yes	Required parameter to specify the mode CVS is running.
esdts	No	Optional parameter to specify ESDTs needs to be verified.
granules|g	No	Optional parameter to specify a list of Data Pool granules ids on the command line.
filesystem|fs	No	Optional parameter to specify Data Pool File system in which the granules are to be verified.
profile	No	Parameter to specify desired action after the file is checksum verified or checksum verification failed, such as email notification, etc.
file|f	No	Parameter to specify a list of DataPool granule ids or files to be verified.
priority	No	Parameter to specify the priority of the granules so that if certain granules need to be checksummed before the others.
batchlabel	No	Parameter to specify the batch label associated with the batch of granules to be verified.
help|h	No	Parameter to specify the options to read the help page.

DataPool Checksum Server Configuration File

The DataPool Checksum Verification Service uses a configuration file: EcDlChecksumServer.CFG, located in /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11-27 describes the configuration parameters.

Table 14.11-27. Configuration Parameters

Parameter Name	Description
DPL_USER	The user name for the database connection.
DPL_SERVER	The name of the host database SQL server is on.
DPL_SERVERPORT	The port for the RDBMS supporting the mode.
DPL_PASSWDSEED	The database password seed.
DPL_DATABASE	The DB name within the RDBMS.
DPL_SUBSYSTEM	The RDBMS schema/subsystem (aim) hosting this utility.
DPLChecksumServiceHost Port	The port number of CVS.
DPLChecksumServiceHosts	CVS service hosts.
DPL_MinPoolSize	The minimal size of the DPL database connection pool.
DPL_MaxPoolSize	The maximum size of the DPL database connection pool.
AppLogSize	The application log size.
AppLogLevel	The application log level.
DebugLevel	The debug log level.

14.11.23.1 Running the Data Pool Checksum Verification Service Client

1 Log in at the machine where the Data Pool Checksum Verification Utility is installed (e.g., x4dpl01).

2 To change to the directory for starting the Data Pool Checksum Verification Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

- The working directory is changed to **/usr/ecs/<*MODE*>/CUSTOM/utilities**.

3 At the prompt, type the command to start the Data Pool Checksum Verification Utility, in the form of the following.

EcDlInsertChecksumRequest.pl –mode <MODE> [-file|f filename] [-granule|g id] [-esdt esdtname] [-profile name] [-filesystem|fs dplfilesystem] [-priority priority] [-batchlabel batch] [-help|h]

Example of Data Pool Checksum Verification Service Client:

- **EcDlInsertChecksumRequest.pl -mode OPS -g 12345**

Verify checksum for Data Pool granule 12345 in OPS mode

- **EcDlInsertChecksumRequest.pl -mode OPS -esdt AST_L1A.004**

Verify checksums for all granules from collection AST_L1A.004 in OPS mode

- **EcDlInsertChecksumRequest.pl -mode OPS –file /home/cmshared/test.dat**

Verify checksums for all granules specified in file /home/cmshared/test.dat

14.11.24 Running the DPL XML Check Utility

The DPL XML Check utility provides a mechanism by which the ECS Operations Staff can periodically check for corruption of the XML files in datapool

In order to detect corruption, the utility verifies the contents of the files are well formed using xmllint.

The DPL XML Check utility should be started by the user cmshared (or similar). The XML Check utility is started by entering the following command:

EcDlXcu.pl <mode> <command line parameters>

There are seven command line parameters that may be used. Table 14.11-28 provides a description of those parameters.

Table 14.11-28. Command Line Parameter

Parameter Name	Required	Description
days	No	Optional parameter to specify days since last checked.
percent	No	Optional parameter to specify percentage of files to check
ESDT	Yes, if granuleid or file parameters are not present	Parameter to specify which ESDTs to check. This is a comma separated list (no spaces). Can also specify “ALL” to include all ESDTs.
startdate	No	Optional parameter used with –ESDT option. Specifies starting insert date to use for ESDTs.
enddate	No	Optional parameter used with –ESDT option. Specifies ending insert date to use for ESDTs.
granuleid	Yes, if ESDT or file parameters are not present	Parameter to specify which granules to check. This is a comma separated list (no spaces).
file	Yes, if ESDT or granuleid parameters are not present	Parameter to specify which granules to check. Granule ids should be listing in a file separated by newlines.
outputDir	No	Parameter to specify directory for error files under /workingdata/emd/<MODE>/DplXcu

DPL XML Check Configuration File

The DPL XML Check utility uses a configuration file, EcDl.CFG, located in /usr/ecs/<mode>/CUSTOM/cfg directory. The configuration parameters are stored in a PARAMETER = VALUE format with each parameter/value pair as a separate line entry in the file. Table 14.11.29 describes the configuration parameters.

Table 14.11-29. Configuration Parameters

Parameter Name	Description
DBUSERNAME	The Postgres DBMS login name.
DBSERVER	The host name for the RDBMS.
DBSERVERPORT	The port for the RDBMS supporting the mode
DBNAME	The name of ECS database.
DBSUBSYSTEM	The name of the subsystem for this utility (aim). This is used to manage the schema path within the RDBMS.
PGM_ID	Program identifier used as seed to generate database password.
NUM_RETRIES	Number of times database operation will be attempted.
RETRY_INTERVAL	Number of seconds between retries.
MAX_CONCUR_CHECKS	Number of concurrent calls to xmllint that will be allowed.
VALIDATION_OUTPUT_DIR	The default directory to place error output files. The directory should be readable/writeable by cmshared. The suggested directory is /workingdata/emd/<MODE>/DplXcu

14.11.24.1 Running the DPL XML Check Utility

1 Log in at the machine where the DPL XML Check Utility is installed (e.g., x4oml01).

2 To change to the directory for starting the DPL XML Check Utility, type **cd /usr/ecs/<*MODE*>/CUSTOM/utilities** and then press the **Return/Enter** key.

3 At the prompt, type the command to start the DPL XML Check Utility, in the form of the following.

The DPL XML Check utility should be started by the user cmshared (or similar). The DPL XML Check utility is started by entering the following command:

EcDlXcu.pl <mode> <command line parameters>

XML Check Utility usage examples:

- For an "ESDT" run:

```
EcDlXcu.pl OPS -ESDT ALL
```

The DPL XML Check Utility will perform checking for all xml files in OPS mode

```
EcDlXcu.pl OPS -ESDT AST_L1A.003,MOD29.005 -startdate Jan 20 2008 -
enddate Dec 1 2008
```

The DPL XML Check Utility will performed checking for all AST_L1A.003 and MOD29.005 xml files whose granules have been inserted between Jan 20 2008 and December 1 2008.

```
EcDlXcu.pl OPS -ESDT AST_L1B.003 -percent 50 -days 10
```

The DPL XML Check Utility will perform checking for 50% of AST_L1B.003 granules which have not been checked in the last 10 days.

- For a "granuleid" run:

```
EcDlXcu.pl OPS -granuleid 22083,22085,22087
```

The DPL XML Check Utility will perform checking for the xml files related to granules 22083, 22085, and 22087in OPS mode

- For a "file" run:

```
EcDlXcu.pl OPS -file granuleids.txt
```

The DPL XML Check Utility will perform checking for the xml files related to granules specified in granuleids.txt.

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15. Distribution Concepts

15.1 System Overview

Data distribution is accomplished at the Distributed Active Archive Centers (DAACs). The Order Manager Subsystem (OMS) manages all orders arriving via the EWOC [EOSDIS ClearingHOuse (ECHO) Web Service Distribution Language (WSDL) Ordering Component (OC)]. All data requests received into the OMS subsystem are validated by the server. The OMS manages distribution of data electronically using FtpPush, SCP (Secure Copy) and FtpPull.

Ftp (file transfer protocol) Pull request links are created in an FtpPull directory indexed by the request id. The links point to the requested files in the Data Pool storage. FtpPush/SCP requests are delivered using the ECS ftp API based on libcurl and GSOAP. This library also used by Ingest and BMGT. Upon successful shipment, OMS sends a Distribution Notice (DN) to the end user.

An order is considered complete when it becomes "Shipped":

- FtpPull orders - The request status is updated to "Shipped" after the order is staged (order expires as configured by DAAC's FtpPull retention time) and file links are made in the Data Pool storage. The DN includes an ftp link to the files.
- FtpPush and SCP (Secure Copy Protocol) orders – The request status is "Shipped" after Order Manager Server finishes pushing all the order's associated data to its destination.

Special orders, such as DPL Web Access requested HEG (HDF-EOS to GeoTIFF) Conversion Tool and EWOC requested External Subsetter (EP) and ESI DataAccess (DA) orders require further processing by processing services:

- WebAccess requested HEG orders - The Order Manager creates HEG requests, per granule, based on the original HEG order processing instructions. It then submits order to the HEG Server through the HEG API (Application Program Interface). The HEG requests are processed and returns the final output to the Order Manager Server, which then distributes the final output to the end user.
- External Subsetter Orders - The External Subsetter creates output granules which are associated with the EPD Server order. The Order Manager Server will later distribute the output granules.
- DataAccess requested processing – Reverb forms can be created to allow users to specify ESI processing options when selecting granules from a collection. These are forwarded to OMS which will determine the Processing endpoint which can be used to process the granules as requested.

The context diagram (Figure 15.1-1) shows a generalized (high-level) view of the system. The Order Manager Subsystem (OMS) architecture diagram (Figure 15.1-2) illustrates the relationship of the Order Manager with the various subsystems on both the input (order-receiving) and output (order-dispatching) sides of order management.

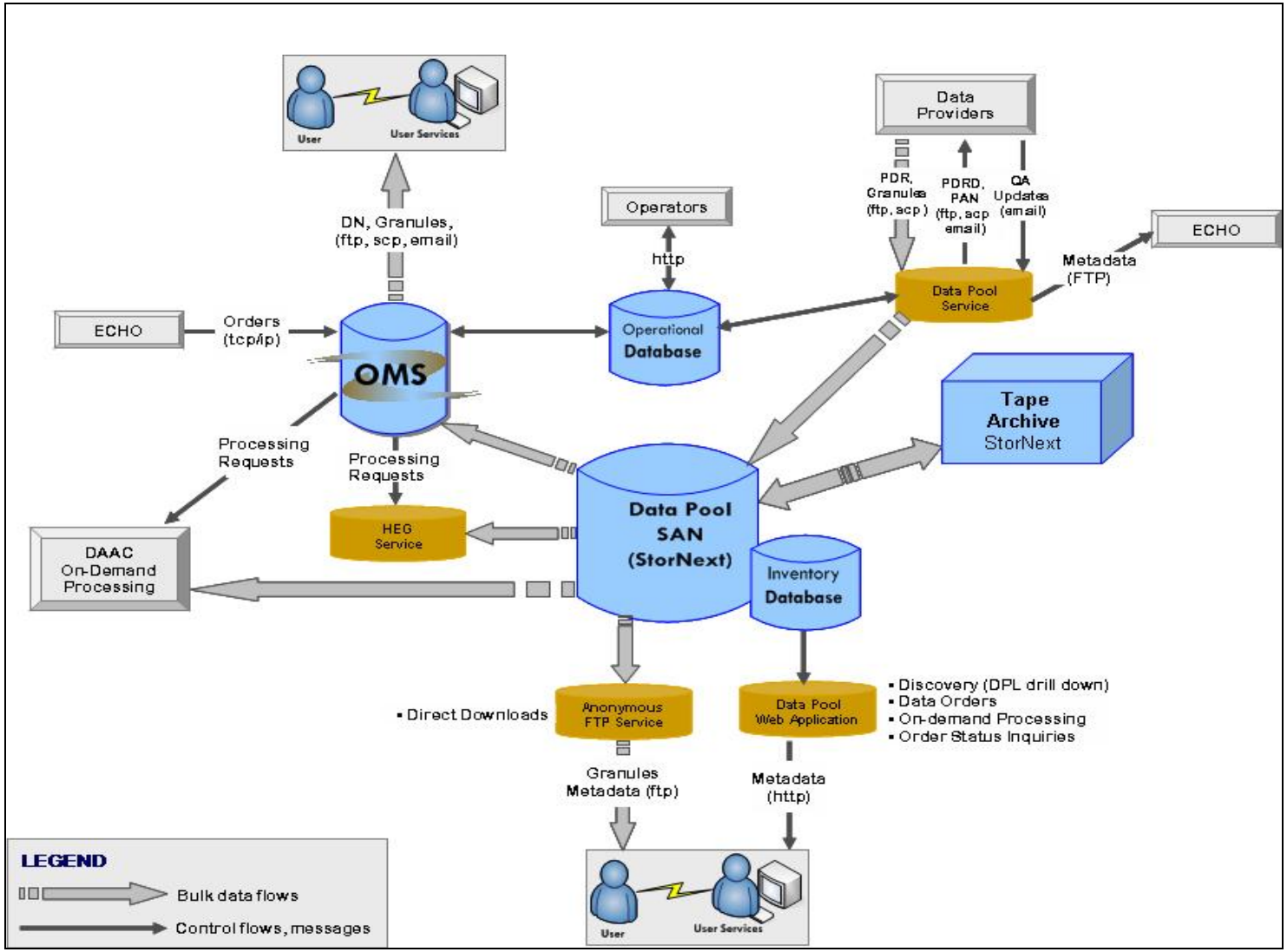


Figure 15.1-1. System Context Diagram

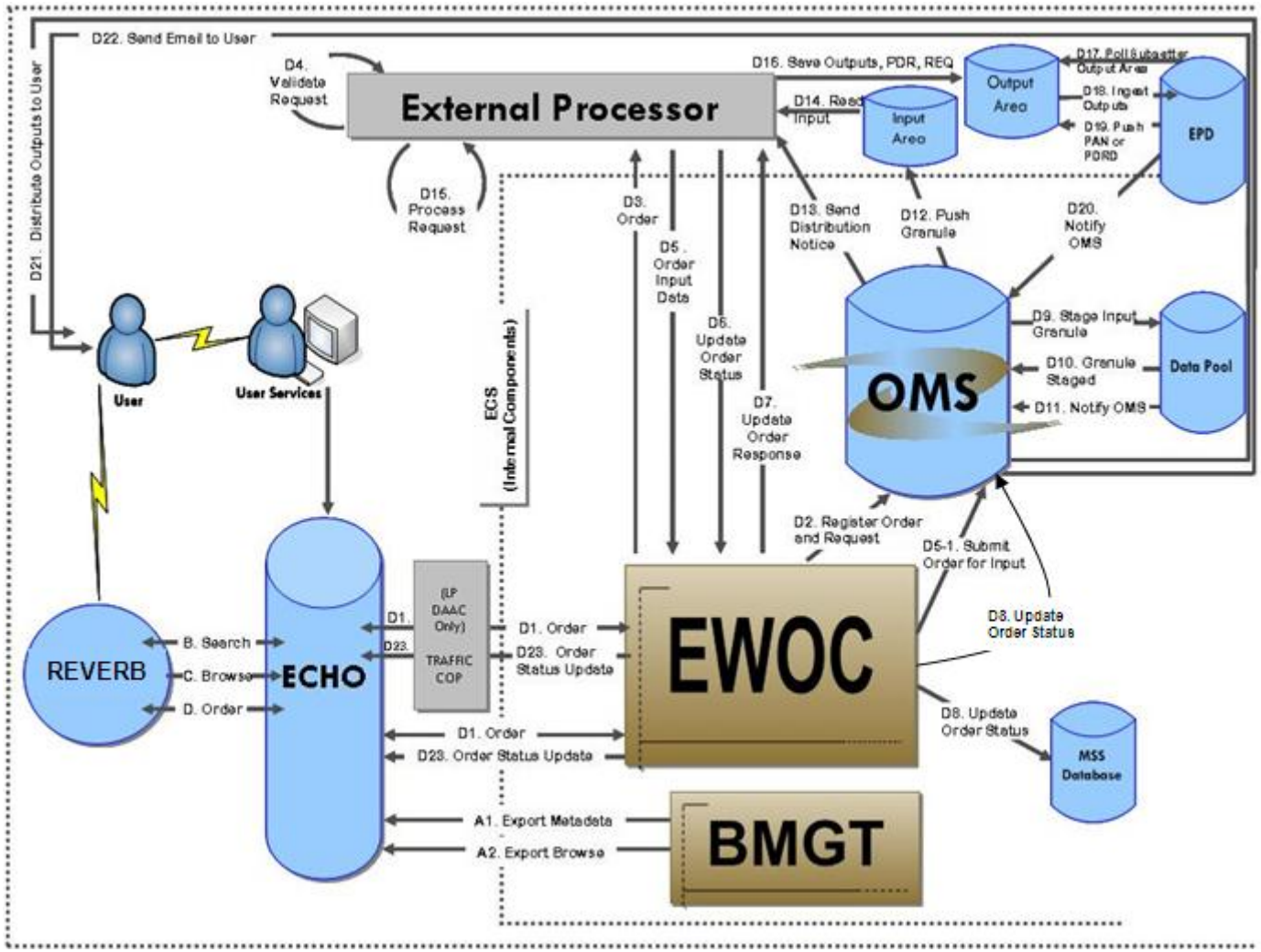


Figure 15.1-2. Order Manager Subsystem (OMS) Context Diagram for EP requests

15.2 Order Manager Subsystem (OMS)

The Order Manager Subsystem (OMS) performs the following functions:

- Manages all the orders arriving from Reverb, ECHO and the External Processor via the EWOC.
- Performs validation of the orders it receives before submitting the applicable requests to the order-fulfilling services.
- Queues processing requests and dispatches individual line items to processing services.
- OMS creates links for each ordered public granule in the hidden Data Pool (DPL) , creates links from the FtpPull directory in the Data Pool storage to the hidden DPL if the distribution type is FtpPull, and distributes the order to the appropriate host for FtpPush/SCP, then sends a Distribution Notice to the end user when the order is considered shipped.
- The OMS handles requests for Browse granules by extracting the browse cross-reference from the Inventory database and copying the Browse HDF files into the Data Pool.

– The EP and DataAccess orders that arrive via the EWOC are those that have been submitted by Reverb, ECHO, or ASTER Ground Data System (GDS) users.

  - EWOC registers external processing orders with OMS.
  - EPD registers external processing outputs with OMS.
  - OMS distributes external processing and DataAccess outputs like any other data.
  - OMS displays external processing and DataAccess orders.

Order Manager Server has four major components:

1 - Sybase ASE Server:

- COTS software application that handles order management-related interactions (including insertion and retrieval of data) with the Order Management database.

2 - Order Manager (OM) GUI:

- GUI that allows operators to view and modify requests that the Order Manager Server has suspended that requires operator intervention.
- In addition, the GUI allows operators to suspend, resume, cancel, resubmit, or change the priority of requests.

15.3 OM GUI Operator Security

The OM GUI allows DAAC Operators to completely manage order distribution requests from a web browser. Operator GUI security offers two levels of permissions, Full and Limited Capability, for OM GUI operations. Table 15.3-1 Operator GUI Security Capabilities defines the allowable security level capabilities of the Operators within the OM GUI.

Table 15.3-1. OM GUI Operator Security Capabilities

ROLE	CAPABILITY
Full-Capability Operator (FC)	• Ability to configure parameters and perform all other actions (i.e., resubmit, suspend, resume, cancel, stop distribution requests) that can be accomplished with the OM GUI. • Modify request parameter values associated with Operator interventions and PMD. • Configure, view and monitor OM server, database and HEG parameters and orders. • Configure PMD devices, printers, production modules and define each media type settings. • Performs PMD requests actions e.g., activate, fail, annotate, confirm/fail mount media; confirm/fail media collection; activate quality check (QC); mark shipped and confirm media dismounted; confirm/mark package assembled/not assembled; print output. • Suspend/Resume and monitor processing queue states, staging states, current status by media type or FtpPush/SCP destination. • Resume suspended, define and configure ftppush/scp destinations, as well as the "policies" for those destinations.
Limited-Capability Operator (LC)	• Can view most information; however some buttons and links have been disabled so it is impossible to perform certain actions or access certain pages. Capabilities are limited to basic functionality i.e., view the Distribution Request page, but can take no action. • View and monitor OM's server, database and HEG parameters. • Monitor current status, processing queue and staging states by media type or FtpPush/SCP destination.
FC or LC Operators	• View lists of all detailed distribution requests i.e., ftppush/scp distribution, staging distribution, or historical distribution requests and status (suspended, shipped, staged, not in terminal state, etc). • Filter distribution requests by combinations of available named data fields. • Monitor for interventions associated with HDF-EOS to GeoTIFF (HEG) Conversion Tool processing, pending HEG granules and order status. • Monitor operator alerts (i.e., ftppush operations, dpl file system errors, archive server or tape errors), monitor processing queue and staging states (including by media type or ftppush/scp destination). • Monitor current status, processing queue and staging states by media type or FtpPush/SCP destination. • Get general and context-based help for all OM GUI functions.
Administrator	• Administers and maintains FC or LC Operator's read (r) and/or read/write (rw) permissions for all fields on every page within the OM GUI.

15.4 Order Manager GUI

There are several key features that describe the general functionality of the Order Manager (OM) Graphic User Interface (GUI):

- The GUI is accessed through a web browser.
- The GUI allows Operators to view and modify requests that have been placed on hold by the Order Manager Server because they require operator intervention, and resubmit requests or portions of a request that have failed.

- The GUI incorporates management of HEG orders.
- The OM GUI allows operators to configure ODL metadata users, external subsetter and SCP policy.

OM GUI is certified for use with any Mozilla 5.0 based browser, e.g., Netscape 7+, Firefox 3.5+, generic "Mozilla" browsers for Linux or UNIX. The OMS GUI was not designed to work with MS Internet Explorer or older versions of Netscape. JavaScript is an integral part of the OM GUI, and as such it must be enabled in the client browser. The ability to create popup windows must be enabled. Table 15.4-1 shows the activity checklist for the Launch Order Manager GUI.

Table 15.4-1. Launch Order Manager GUI - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Launching the Order Manager GUI	(P) 15.4.1	15.4.1

15.4.1 Launching the Order Manager GUI

1 To activate the OM GUI, access a terminal and logon to a host that has access to a recommended web browser:

- Type **<URL>** and press **< Enter**>
- Example URL: http://x4iil01.<DAAC_extension>:<port>.

NOTE: There is no need to specify a cgi-bin directory or a specific HTML page. The GUI will open in a new window and will close the parent window. If run on a Windows or Linux platform, the parent window may not close.

2 Type the appropriate security information in the Security Login Prompt dialog box:

- Type **<User Name>**, then **tab**
- Type **<Password>**
  - The **security login Prompt** (Figure 15.4-1) dialog box displays.

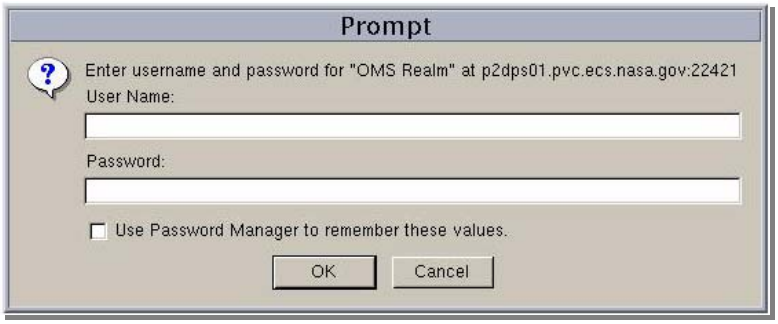


Figure 15.4-1. Security Login Prompt

3 Select the appropriate button to continue/discontinue the login process:

- Click **OK** - to complete the login and to dismiss the dialog box.
- The **Order Manager GUI** Home Page (Figure 15.4-2) displays.
- Click **Cancel** - to dismiss the dialog box without logging in.

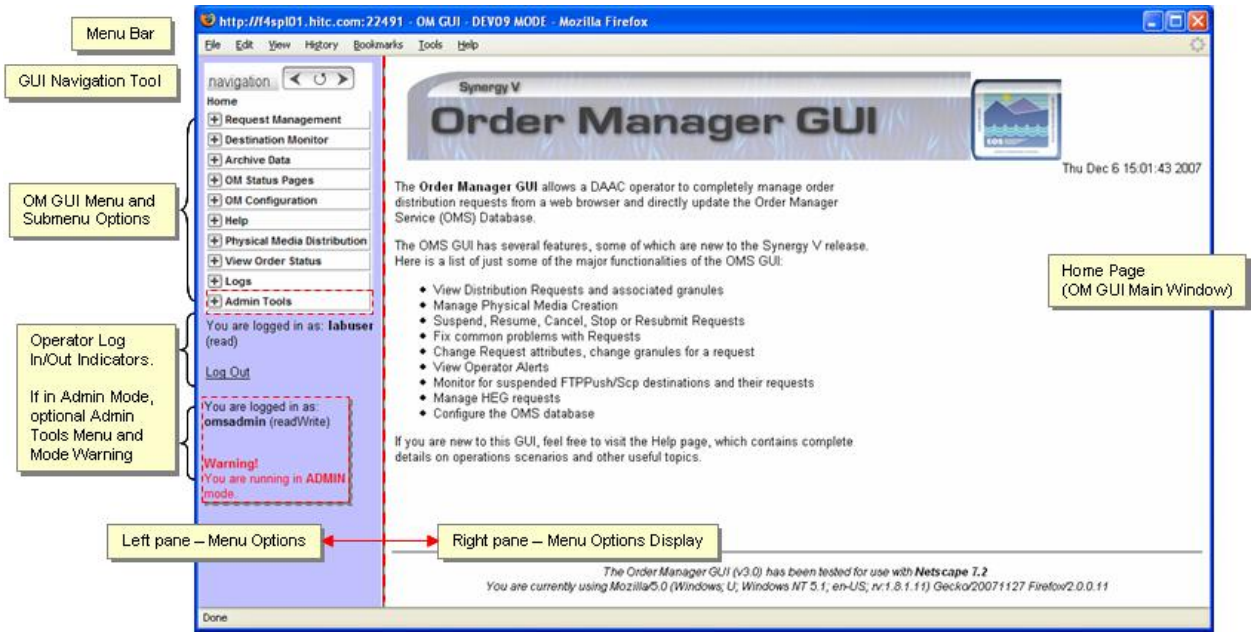


Figure 15.4-2. Order Manager Home Page

15.5 Order Manager GUI Operations

Activities (Table 15.5-1 Operator GUI Security Capabilities) for Order Management are performed using the OM GUI.

Table 15.5-1. Operator GUI Security Capabilities

ORDER MANAGER GUI MENUS		
Navigation Menu Options	**Submenu Options**	
Request Management – provide options to manage all validated requests; provide interventions capabilities; and process subsetting. It also allows Operators to fix common problems with requests within the OMS GUI.	• Open Interventions • HEG Interventions • Completed Actions & Interventions • Distribution Requests [filter]	• Processing Service Requests [filter] • FtpPush/SCP Requests [filter] • Staging Requests [filter] • Operator Alerts
Destination Monitor – provides monitoring capability to suspend distributions and resume them.	• Suspended Destinations	
Archive Data – is the repository for all historical distributed and processed requests.	• Historical Distribution Requests [filter]	• Historical Processing Requests [filter]
OM Status Pages – displays summary information of current states, i.e., suspended or active, for each media server or email. It also displays each archive server's staging status.	• OM Queue Status • HEG Order Status Staging Status: • Media Type • FTP Push Destination	• Pending HEG Granules • SCP Destination • DPL File System Status
OM Configuration – allows Operator to configure aging rules for each priority level – Aging Parameters; to set database and server parameters, which affect the entire system – Server/Database Configuration; and to set and adjust media types attributes – Media Configuration. Provides checksum validation on files distributed by OMS and allow Users to perform validity tests against granules they receive.	• Aging Parameters **Server/Database** • [All] [queue], [cleanup], [email] [media], [staging], [partition], [misc.], [HEG]	• Media • ODL Metadata Users • Checksum Users • External Processing • DataAccess • FtpPush/SCP Policy
Help – provides guidelines to using the OMS GUI.	• About HelpOnDemand… • Help	
View Order Status – displays summary states information of current requests.	• OM GUI Order Status	
Logs – A log viewer is a convenient diagnostic tool that displays all current activity in the OM GUI. Records of every running page and stored procedure are recorded in the log file located under «cgi-bin/logs» directory.	• OM GUI Log Viewer	
Admin Tools – Controls the Operator profiles and configurations for all fields of every page within the OM GUI.	• Server/Database Parameters • Media Parameters • Aging Parameters	• FtpPush Policy • Action Pages • Profile Management

15.6 OM GUI – Request Management

The Operator is provided with the options to manage, monitor and control open/completed interventions. Allowing the means to provide intervention capabilities help to ensure eligible requests from varying order sources are distributed or handled appropriately. The action to process subsetting is also available. Non-fatal errors and warnings related to data space/storage, ftppush/scp destination, and server warnings are functions handled within the OM GUI.

The Request Management submenu options will be examined using the following checklist shown in Table 15.6-1:

Table 15.6-1. Request Management - Activity Checklist

Order	Role	Task	Section	Complete ?
1	**Distribution Technician**	Setting Refresh Option	(P)15.6.1.1.1	
2	**Distribution Technician**	Viewing and Responding to Open Interventions: • Assignment of Worker • Manual Fail of Granule • Specifying a Replacement Granule • Changing Granule Attributes • Changing Granule Media Type, Priority and Formats • Changing Request Disposition • Close Interventions	(P) 15.6.1.2	
3	**Distribution Technician**	Viewing and Responding to Open HEG Interventions: • Assign/Change Worker • Fail Action on Request • Fail Request	(P) 15.6.2.1	
4	**Distribution Technician**	Filtering Data on Completed Actions and Interventions Page	(P) 15.6.3.1	
5	**Distribution Technician**	Filtering Data on Distribution Requests Page	(P) 15.6.4.1	
6	**Distribution Technician**	Filtering FtpPush/SCP Requests or Staging Distribution Requests Page	(P) 15.6.5.1	
7	**Distribution Technician**	Filtering Processing Service Requests Page	(P) 15.6.6.1	
8	**Distribution Technician**	Handling Operator Alerts	(P) 15.6.7.1	
9	**Distribution Technician**	Logging Out of OM GUI	(P) 15.6.8.1	

15.6.1 Request Management Submenu Page – Open Interventions

The **Open Interventions Page** (Figure 15.6-3) provides the full-capability Operator with a means of performing the following kinds of interventions (limited-capability operator can view, but cannot work on (respond to) open interventions.):

- Select a different granule to replace an unavailable granule.
- Fail selected granule(s).
- Disable limit checking.
- Change the distribution media for a request.
- Resubmit, Fail, or Partition (divide) a request.

The **Open Interventions** page has three working parts:

1 - Current Filters – describes the set of pre-defined criteria (Figure 15.6-1, Frame 1) on which the list of distribution requests are to display.

2 - Options – has several features (Figure 15.6-1, Frame 2) to allow operator to:

- **Change Filter** – define or redefine the criteria for displaying the list of distribution request on a page.
- **Bulk Fail** – provides capability to fail "All" or "None" (checkbox) of the eligible selected intervention(s) requests on a page.
- **Bulk Submit** – provides capability to submit "All" or "None" (checkbox) of the eligible selected intervention(s) requests on a page.

3 - Listing – captures the requested distribution output (Figure 15.6-1, Frame 3) of what is being filter.

- The **Sel Fail Sub** column provides checkboxes to mark a single request to be submitted or failed.
- It displays several underscored **column headings** that if clicked, will display additional information regarding the request.

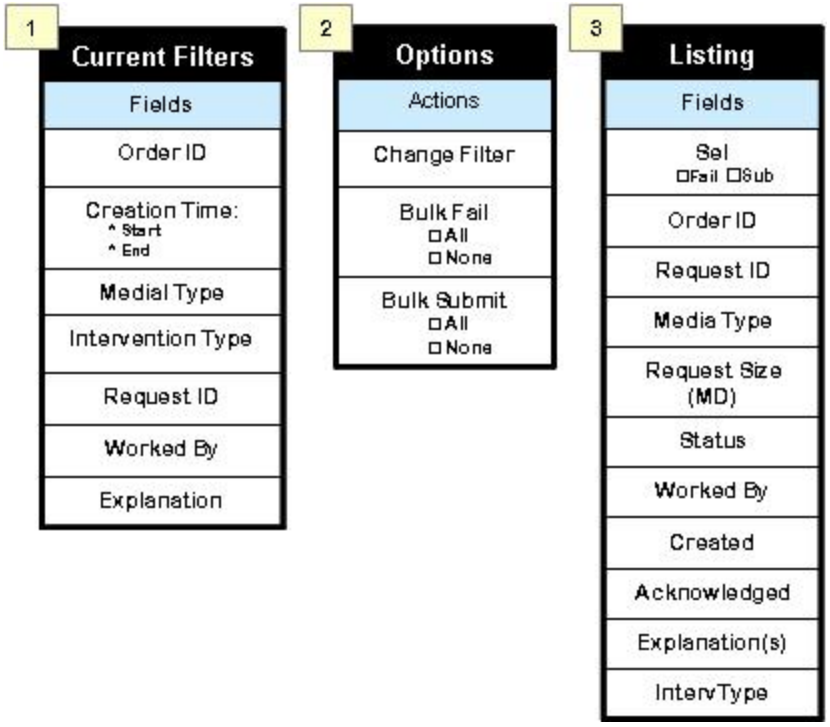


Figure 15.6-1. Open Interventions Page – Fields and Options

The procedure for viewing request management submenu pages information on the **OM GUI** starts with the following assumptions:

- The OM GUI has been launched.
- The browser menu option, **Edit, Find in this Page (Ctrl+F)** features a keyword search of the data within the current screen (page) display. When active, the Find tool (Figure 15.6-2 OM GUI Tools, Frame A) is accessible at the lower panel of page.

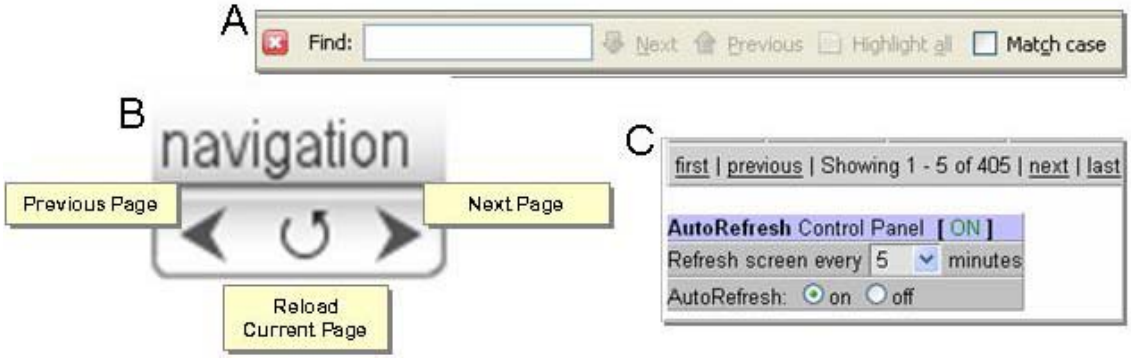


Figure 15.6-2. Order Manager GUI Tools: Find (A), Navigation (B), and Refresh (C)

15.6.1.1 Refresh Options on OM GUI Pages

The OM GUI pages data can be manually refreshed (updated) using the "refresh (↻)" icon on the OM GUI Navigation tool. Several OM GUI pages refreshes automatically, if "AutoRefresh" is set to the "ON" position, as often as specified by the "Refresh screen every <number> minutes" tool.

NOTE: This tool is found at the lower-left bottom of most OM GUI pages.

15.6.1.1.1 Setting Refresh Option

1 Click **Request Management** menu option to expand its submenu.

2 Click **Open Interventions** submenu option to display its page (Figure 15.6-3). Locate the **AutoRefresh Control Panel** at bottom of **Open Interventions** page.

3 If applicable, click on appropriate option button of the **AutoRefresh Control Panel** to toggle control "on" or "off".

- **on** – useful when working with current orders/requests with frequent changes in status and most current updates are desirable.
- **off –** useful to suspend the refresh option when processing large volume of orders/requests and it is desirable to preserve the current screen's display.

4 Change the refresh rate (assuming **AutoRefresh** is **on**):

- Click **Refresh screen every <number> minutes** option on list arrow to display minute option.
- Click on the desired **refresh minutes** (range 1 – 45) from list.

15.6.1.2 Viewing and Responding to Open Interventions Page

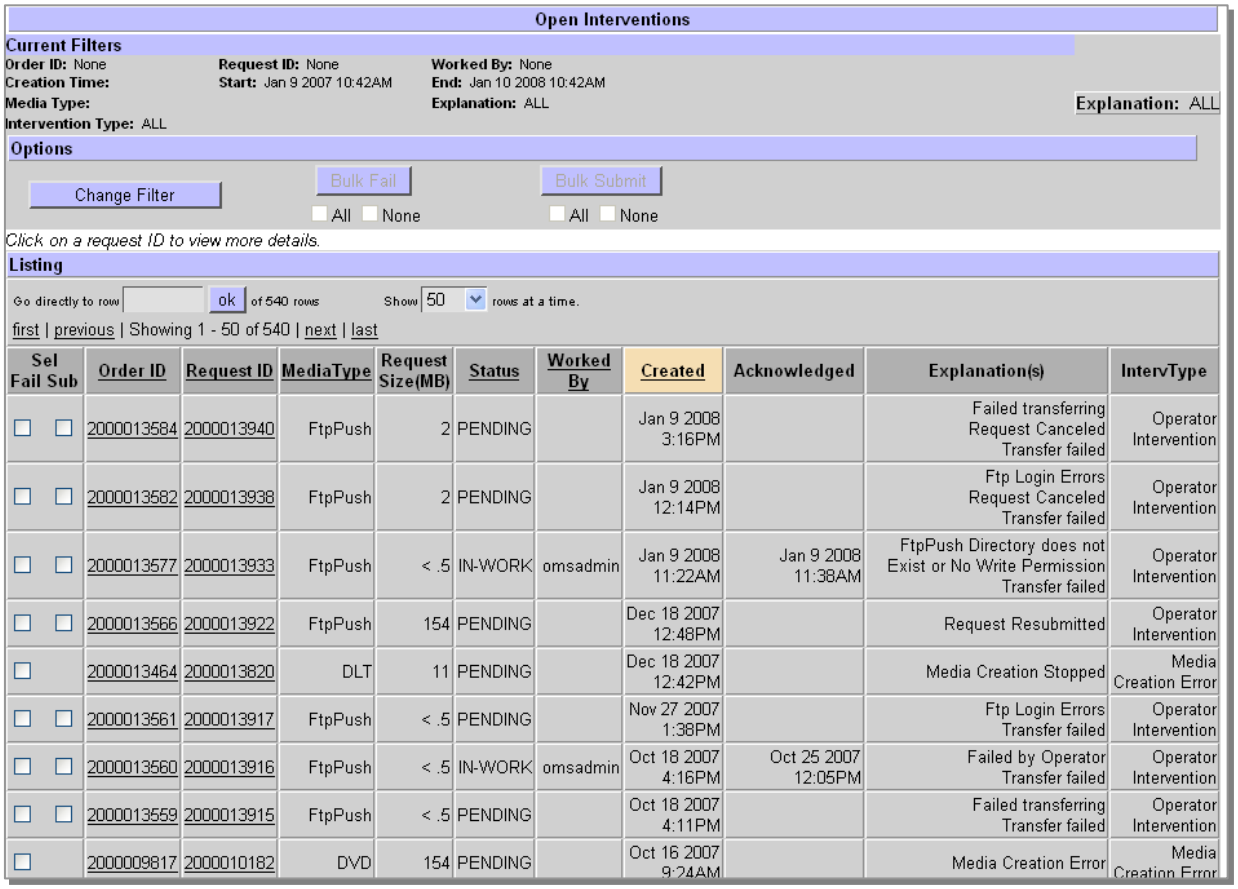
1 Click **Request Management** menu option to expand its submenu.

2 Click **Open Interventions** submenu option to display its page (Figure 15.6-3).

3 Observe information displayed under the **Listing** section of the page.

4 To set the number of rows to display on the page, modify the **Show <number>** rows at a time option:

- Select **20** to specify the number of rows to display.



Open Interventions

Current Filters

Order ID: None **Request ID:** None **Worked By:** None
Creation Time: **Start:** Jan 9 2007 10:42AM **End:** Jan 10 2008 10:42AM
Media Type: **Explanation:** ALL **Explanation:** ALL
Intervention Type: ALL

Options

Change Filter | Bulk Fail (All None) | Bulk Submit (All None)

Click on a request ID to view more details.

Listing

Go directly to row [ ] ok of 540 rows Show 50 rows at a time.

first | previous | Showing 1 - 50 of 540 | next | last

Sel Fail Sub	Order ID	Request ID	MediaType	Request Size(MB)	Status	Worked By	Created	Acknowledged	Explanation(s)	IntervType
☐ ☐	2000013584	2000013940	FtpPush	2	PENDING		Jan 9 2008 3:16PM		Failed transferring Request Canceled Transfer failed	Operator Intervention
☐ ☐	2000013582	2000013938	FtpPush	2	PENDING		Jan 9 2008 12:14PM		Ftp Login Errors Request Canceled Transfer failed	Operator Intervention
☐ ☐	2000013577	2000013933	FtpPush	< .5	IN-WORK	omsadmin	Jan 9 2008 11:22AM	Jan 9 2008 11:38AM	FtpPush Directory does not Exist or No Write Permission Transfer failed	Operator Intervention
☐ ☐	2000013566	2000013922	FtpPush	154	PENDING		Dec 18 2007 12:48PM		Request Resubmitted	Operator Intervention
☐	2000013464	2000013820	DLT	11	PENDING		Dec 18 2007 12:42PM		Media Creation Stopped	Media Creation Error
☐ ☐	2000013561	2000013917	FtpPush	< .5	PENDING		Nov 27 2007 1:38PM		Ftp Login Errors Transfer failed	Operator Intervention
☐ ☐	2000013560	2000013916	FtpPush	< .5	IN-WORK	omsadmin	Oct 18 2007 4:16PM	Oct 25 2007 12:05PM	Failed by Operator Transfer failed	Operator Intervention
☐ ☐	2000013559	2000013915	FtpPush	< .5	PENDING		Oct 18 2007 4:11PM		Failed transferring Transfer failed	Operator Intervention
☐	2000009817	2000010182	DVD	154	PENDING		Oct 16 2007 9:24AM		Media Creation Error	Media Creation Error

Figure 15.6-3. Open Interventions Page

5 Change the page display order by clicking on an underscored column heading (label):

- Click **Created** to organize page by Creation Time, in ascending order.
- Click a specific **Order ID <number>** to display more detailed data concerning that particular order number.

- The **ECS Order <number>** details page (Figure 15.6-4) displays.
- If a bundled order (where **Order Type** is **Bundled Order or BO**), the ECS Order Page includes a link to the Spatial Subscription Server GUI.

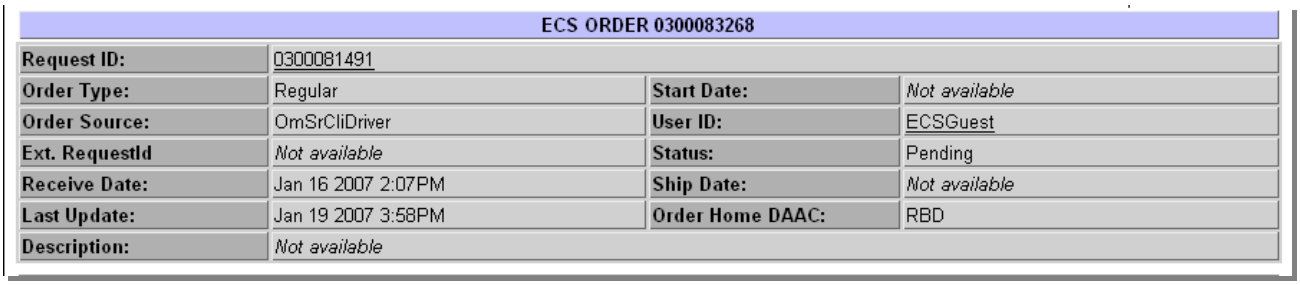


Figure 15.6-4. ECS Order <ID> Details Page

- Click the navigation tool **Previous Page (◄)** button, to return to the **Open Interventions** page**.**
- Click **Request ID** <**number**> to view open **Interventions For Request <ID>** details page (Figure 15.6-5), which displays additional intervention related data for the request.

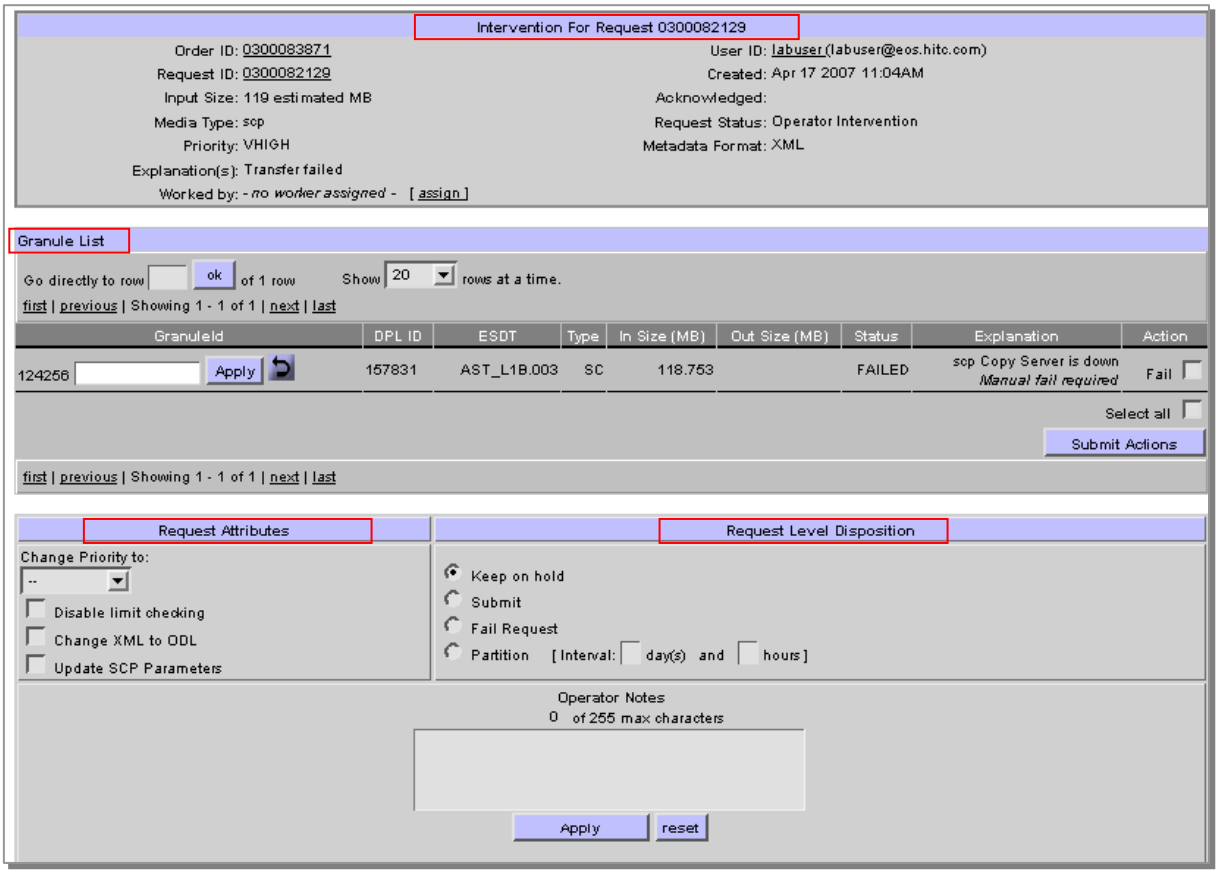


Figure 15.6-5. Open Intervention for Request <ID> Page

6 The **Open Intervention For Request <ID>** page (Figure 15.6-5) has four working parts:

1 - **Intervention For Request <number>** – provide details of the Request ID, it size, type, status, format, etc.

2 - **Granule List** – details technical data of the requested granule, including its type of download (secure copy or ftp).

3 - **Request Attributes** – available options to modify the characteristic of the granule being requested.

4 - **Request Level Disposition** – available options to determine disposition of request.

7 To view the details of another Open Interventions page:

- Select the **Request Management submenu** option, **Open Interventions**.

- The **Open Interventions detail page** dismisses.
- The **new Open Interventions page** displays.

Request ID: Assignment of Worker

8 Select the underscored **Request ID <number>** on the **Open Intervention** page.

- The **Interventions For Request <ID>** page displays**.**

9 Observe the **Worked by** column information displayed in the **Open Intervention For Request <ID>** page (Figure 15.6-5):

- If User is currently working on the intervention, that userid appears in the **Worked by** field on the **Open Intervention For Request <ID>** page (Figure 15.6-5).
- In general, working on an intervention is the responsibility of the assigned worker, unless the change is coordinated with the assignee or the assignee is unavailable (e.g., due to illness or vacation).
- If necessary (e.g., due to illness, vacation, or prior coordination), it is possible to override the assignment of an intervention.

10 To assign or change worker to the **Worked by** field (Figure 15.6-6, Worker Assignment) on the Intervention For Request <ID> page perform one of the following:

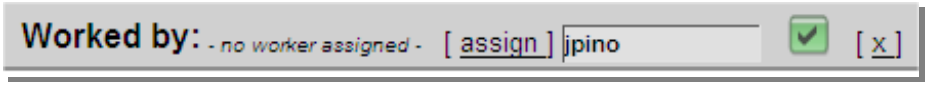


Figure 15.6-6. Worker Assignment

- If no worker is assigned, click the **assign** link (input box displays).
- To modify/change current worker, click the **change** link (input box displays).
- Enter worker's **<employeeID>** in the input box.
- Click the **green-checked button** to confirm entry (or to cancel input).

Granule List: Manual Fail of Granule

11 Observe information in the **Explanation** column of the **Granules List**. Locate a row that indicated that a **Manual fail required** by Operated is necessary. Several reasons for a fail request action may include:

- **Invalid UR/Granule Not Found** – Transfer Failed.
- **scp Copy Server is down** – Granule failed Staging.
- **Max Retry Reached** – Granule failed Staging.
- **FtpPush Directory does not Exist or No Write Permission** – FtpPush Transfer failed.

12 If a granule **Explanation** column indicates, "Manual fail required":

- Click the **Fail** checkbox (in **Action** column of the failed granule row) from the list.
- Click the **Submit Actions** button.

- A dialog box displays to confirm the change to the granule.

NOTE: "Failing" a granule is a permanent action that cannot be canceled after having been confirm action.

- Click **Ok** to confirm action.

Granule List: Specifying a Replacement Granule

13 If a granule is to be **replaced** (e.g., because of an "Invalid UR/Granule Not Found" entry in the **Explanation** column of the **Granule List**):

- Type replacement granule **Database ID (DBID)** in "**DBID**" text box

NOTE: Locate the replacement granule DBID.

- Click the **Apply** button (associated with the DBID)

- A dialog box displays to confirm change to granule.
- Click **OK** to confirm change.

Request Attributes: Changing Granule Attributes

14 Changing attributes (Figure 15.6-7 Request Attributes) of a granule will alter its characterization or features. Several changes to a granule attributes includes:

- **Change Priority to** – Processing order of Low, High, VHigh (VeryHigh), XPress (Express or Expedite).
- **Change Media To** – This option allow for selection one of three media types (Figure 15.6-7B Request Attributes).
- **Disable limit checking** – Disables/Overrides the standard media capability limits for a particular media type, specifically FTPPush, FTPPull and SCP). This option can bypass the request size checks if the request is too small or too large.
- **Change XML to ODL** – data type conversion; the Operator will receive metadata in XML format which is the default metadata format. If changed to ODL TO XML option, then conversion to ODL format is received.

- **Update <media type> Parameters** – option allows for editing of existing selected media type when the intervention is closed. This option varies according to type of media e.g., if media type is SCP or FtpPush, this option is available; otherwise no action to update media parameters can be performed or is displayed. Example displays variation in Frames A and B of Figure 15.6-7 Request Attributes.

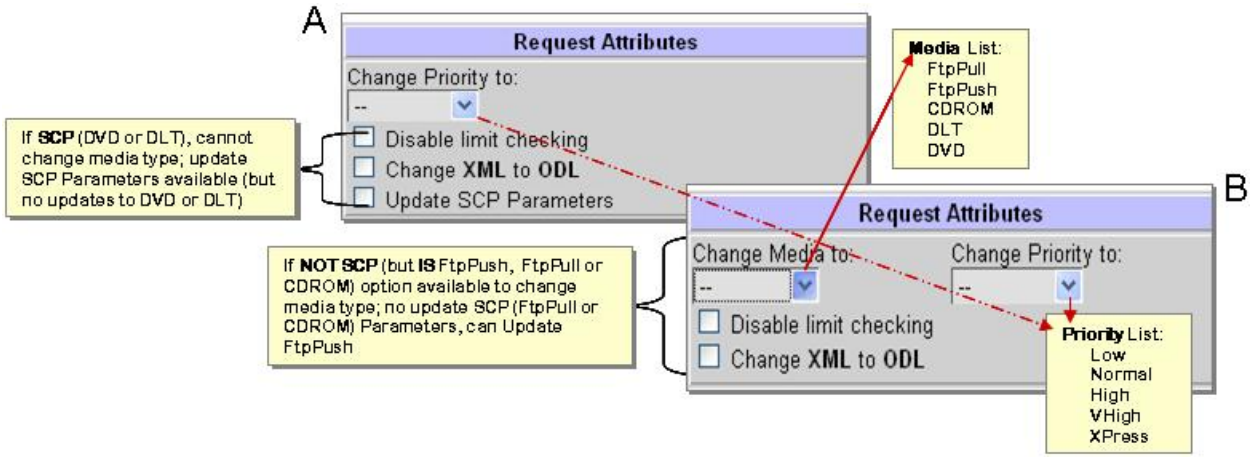


Figure 15.6-7. Request Attributes

Request Attributes: Changing Granule Media Type, Priority and Formats

15 If the distribution medium/media should be changed for those distribution types that are types other than SCP (Secure Copy Protocol), a list of available media types (Figure 15.6-7B Request Attributes) will display under the "Request Attributes" section:

- Click the **Change Media to** listbox arrow to review those choices:
- **FtpPull** (File transfer protocol – Pull Technology)
- **FtpPush** (File transfer protocol – Push Technology)
- Select <**medium**> from list.

16 To change the priority of the request, a list of priorities is available in the "Change Priority to" listbox (Figure 15.6-7B):

- Click the **Change Priority to** listbox arrow to review choices.
- Select **Priority** from list.

17 To **Disable size limit** checking attribute:

- Click the Disable limit checking checkbox.

18 To **change the values** assigned to FtpPush parameters:

- Click the **Update FtpPush Parameters** checkbox.

NOTE: This option will only appear if SCP was the originally media type. When this option is checked, the operator will be prompted to change the existing SCP parameters on the next page.

Request Level Disposition: Changing Request Disposition

19 Changing a request disposition (Figure 15.6-8) will alter the queuing of its distribution or how it is handled. There are several options to change the level disposition:

- **Keep on hold –** Delays applying any intervention action (keeps open the intervention) and dismiss the "Open Intervention Detail" page. This action does not allow changes to the request's attributes, but saves Operator notes and allows intervention to open at a later time (essentially, the intervention is being "saved").
- **Submit –** Applies any actions or changes to the intervention specified in the "Granule List" and "Request Attributes" sections of the "Open Intervention Detail" page and then dismisses the page.
- **Fail Request –** Fails the entire request (including all associated granules) and dismiss the "Open Intervention Detail" page.
- **Partition –** This option will start the process of partitioning a request that exceeds maximum request size. The process will perform the distribution of granules in Intervals (days and hours) over a period of time (Figure 15.6-8 Request Level Disposition).

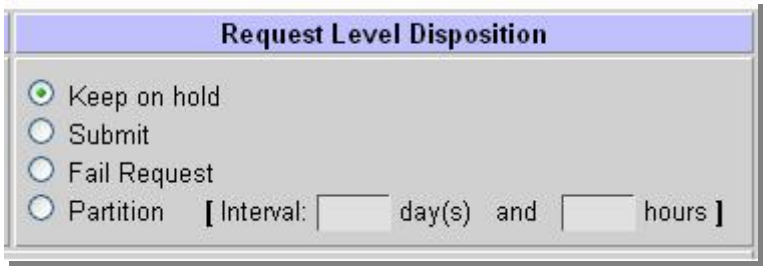


Figure 15.6-8. Request Level Disposition

20 To **select a disposition**, click the option button (⦿) from the list of dispositions.

- To Fail Request, click the **Fail Request** option button.
- Click the **Apply** button to commit change.

NOTE: The Apply and Reset buttons at bottom of the Open Intervention Detail page will commit change. The "Reset" button does not cancel any changes made to the request or changes made to the DBIDs (changed or failed). It simply resets the form's option buttons for the Request Level Disposition section to its original state.

- **Close Confirmation for Intervention** (Figure 15.6-9, Frame A) page displays.

Request Level Operator Notes: Close Interventions

NOTE: The Close Confirmation page displays varying actions to be taken; for example, the following types of actions may be displayed:

- **Disposition** [e.g., keep on hold, submit, fail, or partition]
- **Limit Checking Disabled [yes, no,** or **blank]**
- **New Media [no, yes: (type),** or **blank]**
- **New Priority [no, yes: (type),** or **blank].**

21 If the intervention involved **changing the medium to FtpPush/SCP or updating the values assigned to FtpPush/SCP parameters**, textboxes for the following FtpPush/SCP parameters are displayed on the Close Confirmation page:

- **Ftp or SCP node [Destination host name].**
- **Ftp Username.**
- **Password.**
- **Confirm Password.**
- **User String [message to be sent to the user].**
- **Destination Directory [full path].**

22 If **a failed request or granule(s) within a request's partition or to modify granules in a request**, the **Close Confirmation** page (Figure 15.6-10) includes two options:

- **To append additional text** to the default e-mail message sent to the requester:
- An **Additional e-mail text** textbox for appending text (if desired) to the standard (default notification of failure) e-mail text is displayed on the **Close Confirmation** page (shown in Figure 15.6-10).
- **To choose not to send an e-mail message** to the requester:
- A **Don't send e-mail** box to suppress the sending of an e-mail message indicating request/granule failure is displayed on the **Close Confirmation** page (Figure 15.6-9).

- Type <**appropriate values**> in the required text boxes for input/update to mailing/delivery label (Figure 15.6-10, Frame A close).

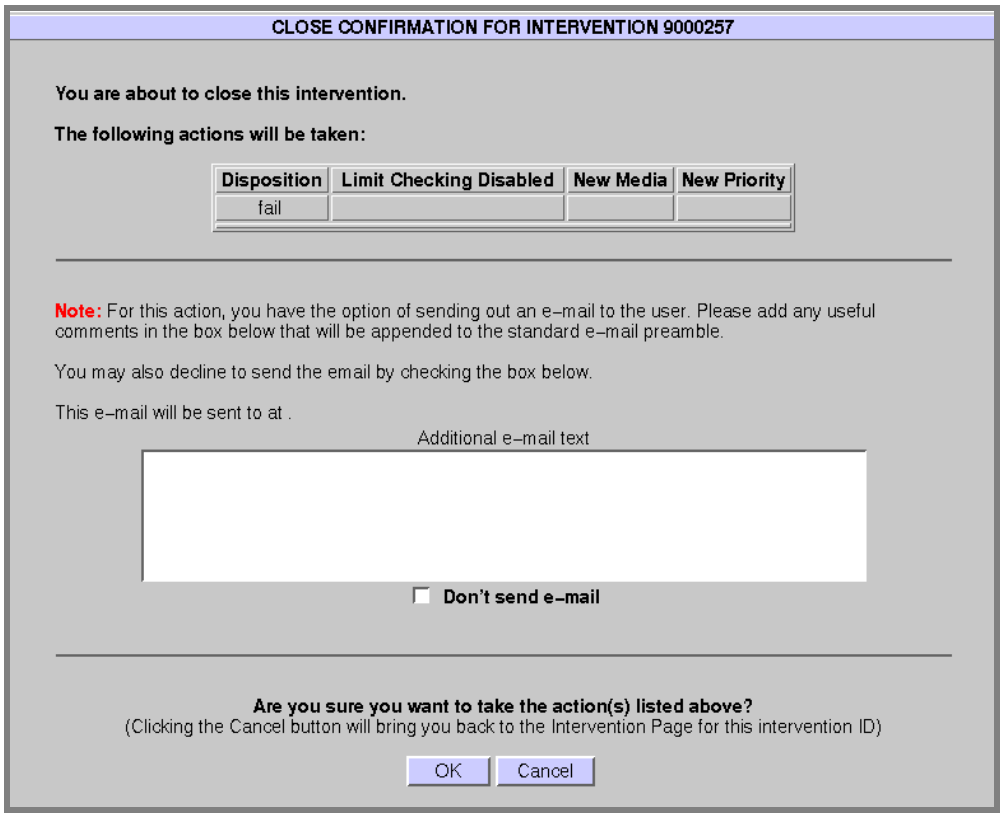


Figure 15.6-9. Close Confirmation for Intervention <ID> with E-Mail

23 To **Close the Intervention**, click on the appropriate button from the following selections:

- **OK** - to apply the specified intervention actions (if any) and dismiss the "Intervention Closed" dialog box.

- An **Intervention Closed** dialog box (Figure 15.6-10) displays.
  - **Cancel** - to dismiss the **Intervention Close** dialog box, without applying the specified intervention actions.

NOTE: A warning dialog box is displayed with the message "WARNING: The disposition and actions you have taken for this intervention will be lost. Continue?"

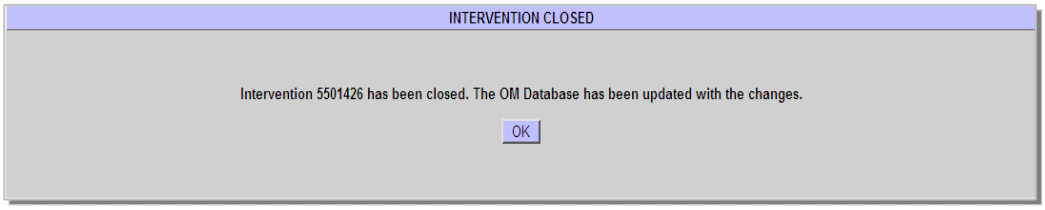


Figure 15.6-10. Intervention Closed

24 If a warning dialog box is displayed with the message "**WARNING**: The disposition and actions you have taken for this intervention will be lost. Continue?"

- **OK** - to dismiss the warning dialog box and the close confirmation.

- The **Open Interventions** detail page returns.

25 To exit the **Intervention Closed** prompt and display the **Open Interventions** detail page:

- Click the **OK** button.

26 On the OM GUI left pane menu options, click the **Home** link to return to the **Order Manager Home** page.

- The **Order Manager Home** page (Figure 15.4-2) displays.

15.6.2 Request Management Submenu Page – HEG Interventions

HEG Interventions processing involve "line items" and associated detail links. Although a HEG order may contain a mix of granule types (i.e., those with and without line items), an additional column will show in the granule list containing the number of line items and its details link. The **Open HEG Interventions** page (Figure 15.6-11) is a hard-coded display that provides the Operators (either full-capability or limited-capability) the option to only view HEG interventions. The **HEG Intervention For Request <ID>** page (Figure 15.6-14) provides the full-capability operator with a means of performing the following kinds of interventions:

- Assign/Change Worker.
- Fail selected granule(s).
- Fail a request.

15.6.2.1 Viewing and Responding to Open HEG Interventions

1 Click **Request Management** menu option to expand its submenu.

2 Click **HEG Interventions** submenu option to display the **Open HEG Interventions** page (Figure 15.6-11).

- The **Open HEG Interventions** page (Figure 15.6-11) displays.

Figure 15.6-11. Open HEG Interventions Page

The **Open HEG Interventions** page has three working parts:

1 - Current Filters – describes the set of pre-defined criteria (Figure 15.6-12, Frame 1) on which the list of distribution requests are to display.

2 - Options – has several features (Figure 15.6-12, Frame 2) to allow Operator to:

- **Change Filter** – define or redefine the criteria for displaying the list of distribution request on a page.
- **Bulk Fail** – provides capability to fail "All" or "None" (checkbox) of the eligible selected intervention(s) requests on a page.
- **Bulk Submit** – provides capability to submit "All" or "None" (checkbox) of the eligible selected intervention(s) requests on a page.

3 - Listing – captures the requested distribution output (Figure 15.6-12, Frame 3) of what is being filtered.

- The **Sel Fail Sub** column provides checkboxes to mark request to be submitted or failed.
- It displays several **underscored column headings** that if clicked, will display additional information regarding the request.

NOTE: It is important to check the filter settings when opening the Open HEG Interventions page to clear filter settings from one session to another.

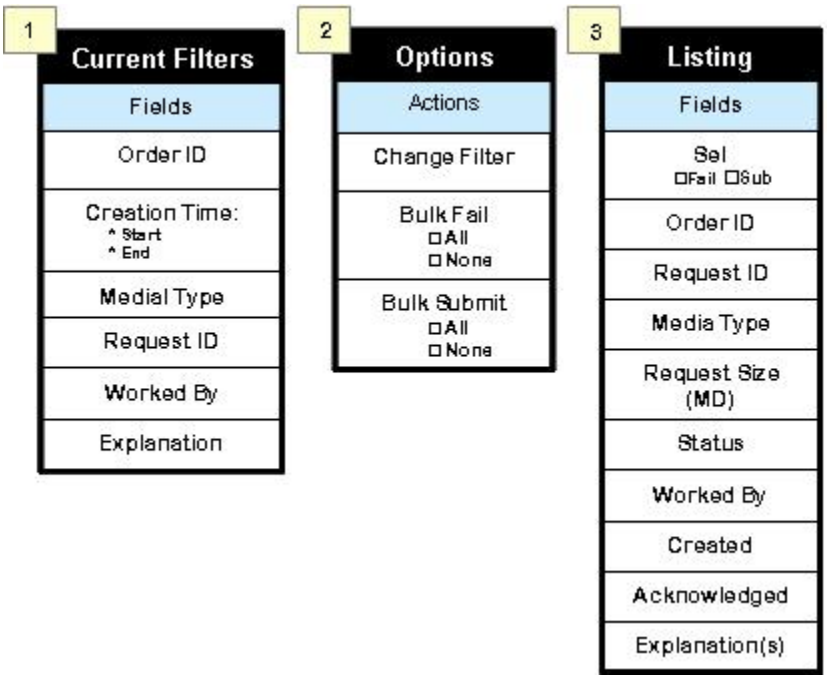


Figure 15.6-12. Open HEG Interventions – Fields and Options

3 Observe information in the **Listing** section of the **Open HEG Interventions** (Figure 15.6-12) page:

- Set the **Show <number> rows at a time** to equal **20**.
- If **AutoRefresh** is **ON**, the **Open HEG Interventions** page refreshes automatically as often as specified in the **Refresh screen every *x* minutes** window. Click on the ↺ icon, on the **OM GUI** navigation tool, to manually refresh.
- The Netscape browser **Edit → Find in Page** menu provides keyword searches of the currently displayed data.
- Click on an **underscored column header** of the table to sort column's content.

- **Order ID** to sort data and line items in ascending order.

4 To observe detailed information for particular line item on the **Open HEG Interventions** page, click on the **associated detail link** under the column header**:**

- **Order ID <number>** to display detailed data related to that particular order number.
- **Request ID <number>** to display detailed data related to the intervention for that particular request.
- The **Open HEG Intervention For Request <ID>** detail page (Figure 15.6-13) displays.

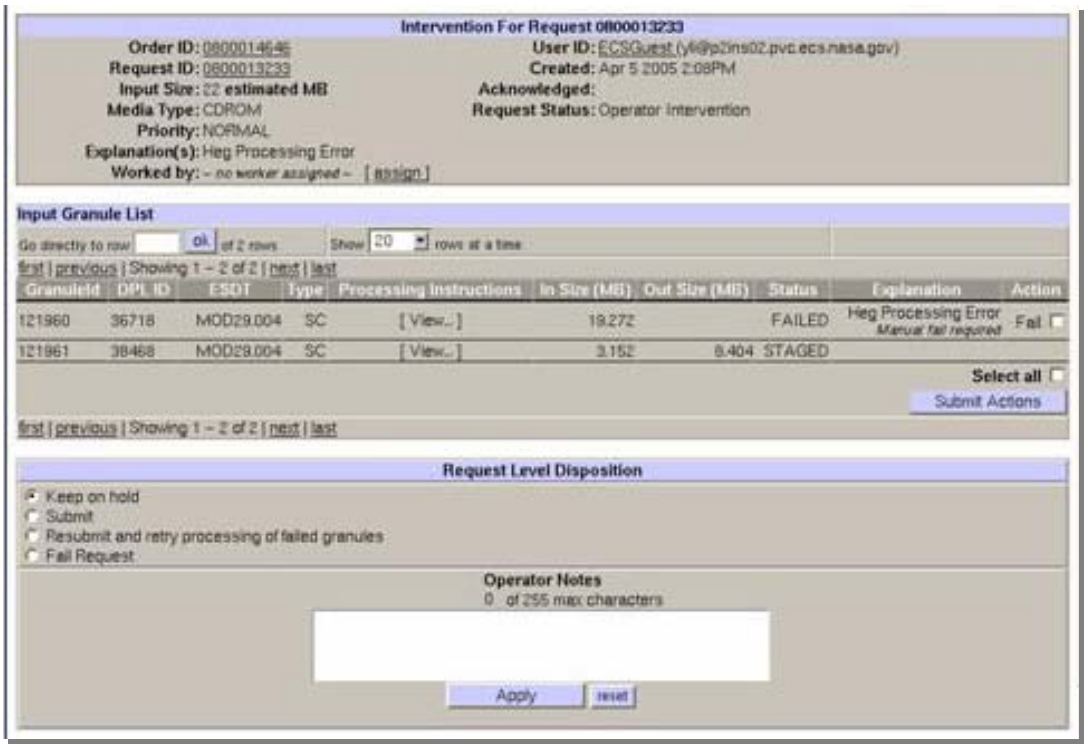


Figure 15.6-13. Open HEG Intervention For Request <ID> Detail Page

The **Interventions For Request <ID> detail** Page has three working parts:

1 - **Intervention For Request <number>** – displays data (Figure 15.6-14, Frame 1) that identify the attributes of the specified (filtered) request.

2 - **Input Granule List –** features a read-only list of input granules (Figure 15.6-14, Frame 2) which allows operator to submit action against on or more granules in list.

3 - **Request Level Disposition –** provides several disposition options which include the collection of Operator notes and ability to set/reset disposition of granules (Figure 15.6-14, Frame 3).

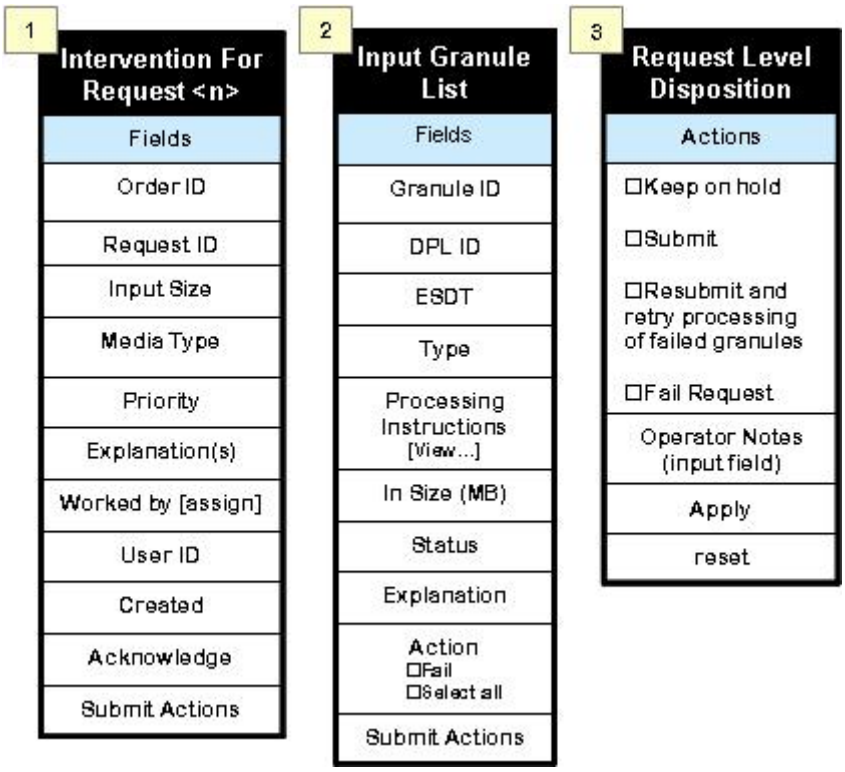


Figure 15.6-14. Open HEG Interventions for Request <ID> Detail – Fields and Options

5 From the OM GUI menu, click the **previous page icon (⮜)** to return to the **Open HEG Interventions** page.

- The **Open HEG Interventions** page (Figure 15.6-12) displays.

6 To view processing instructions detailed data related to a particular granule ID:

- ▸ Click **[View…]** link associated with the specific GranuleID, under the column heading "Processing Instructions" in the **Input Granule List** section of the **Open HEG Intervention Detail** page.

- The **Processing Instructions for Request ID** <number> displays (Figure 15.6-15).

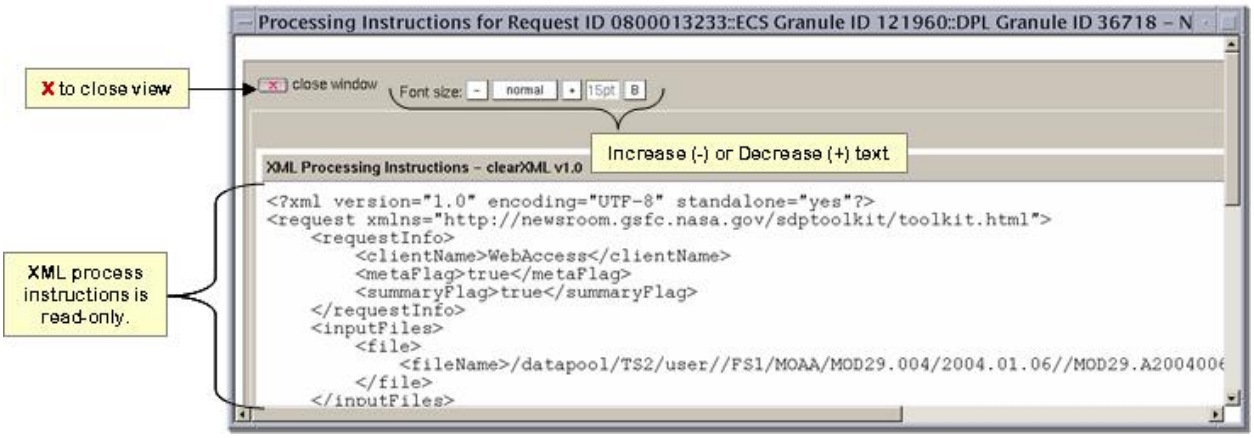


Figure 15.6-15. Processing Instructions Window

- The Processing Instructions is read-only, using clearXML application.
- Operator can use the Font size tool to increase or decrease text size of the instructions. Although the text is not modifiable, Operator can highlight text, copy and paste into a software editor.
- To close the **Processing Instructions for Request ID <number>** window, click on the **close window** button.

7 Click the red **X** close window button to **close the processing instructions window** and return to the **Open HEG Interventions for Request <ID>** detail page.

Intervention For Request <number>: Assign/Change Worker

8 From the **Open Interventions** page, click on the desired **Request< ID>:**

- Observe the information displayed in **Worked by** input box**,** of the **Open HEG Intervention For Request <ID>** detail page:
- The userid of the user currently working on the intervention appears in the **Worked by** field of the **Open HEG Intervention for Request <ID>** detail page.
- Ensure appropriate User is assigned to work on the intervention.

9 To assign or reassign user to work on the intervention:

- Click on the **assign** or **change** link of the **Worked by** (input box displays).
- Click the **change** link, to modify/change current user (input box displays).
- Enter **appropriate worker's id** in the input box.
- Click the **green checked button** to confirm entry (or to cancel input).

Input Granule List: Fail Action on Request

10 The operator can fail intervention(s) using the **checkbox** options located under the **Action** column of the **Input Granule List** section. If "fail" and/or "accept" actions are to be taken, with respect to one or more granules in the request (e.g., "fail" a granule

because of an “Invalid UR” entry in the Explanation column of the Granule List). There are two possible checkbox options that can be implemented from this section:

- **Fail** – fails an individual granule in the specified row.
- **Select All** – fails all actions for granules with Accept/Fail options.

11 To implement one or all action(s) to fail intervention(s) on the **Open HEG Interventions For Request <ID>** page:

- Select the **Fail** checkbox, on the row of a specific granule, to fail “individual” granules.
- Select the **Select all** (bulk fail) checkbox to fail “all” interventions displayed on the page.

NOTE: Set options in the Request Level Disposition section before submitting action.

Request Level Disposition: Fail Request

12 Select one or more of the following requests in the **Request Level Disposition** section:

- **Submit** - to apply any changes of failing granule(s), which are not reprocessed.
- **Keep on hold** – to delay applying any intervention action (retain as open).

NOTE: Placing an intervention on hold does not allow changing the request's attributes, but saves the operator notes and allows opening the intervention at a later time (essentially, the intervention is being “saved”).

- **Resubmit and retry processing of failed granules** – to submit the request with any changes and retry HEG processing of failed granules.
- **Fail Request** – to fail the entire request (including all granules) and dismiss the Open HEG Intervention Detail page.

13 Enter **Operator Notes**, if more details should be communicated concerning the request (e.g., the reason for making a particular type of intervention).

14 Click **Apply** to commit/submit action.

NOTE: The reset button does not cancel any changes made to the request (changed or failed). It simply resets the form buttons for the Request Level Disposition section to their original states.

- The **Close Confirmation for Intervention <ID>** displays (Figure 15.6-16)

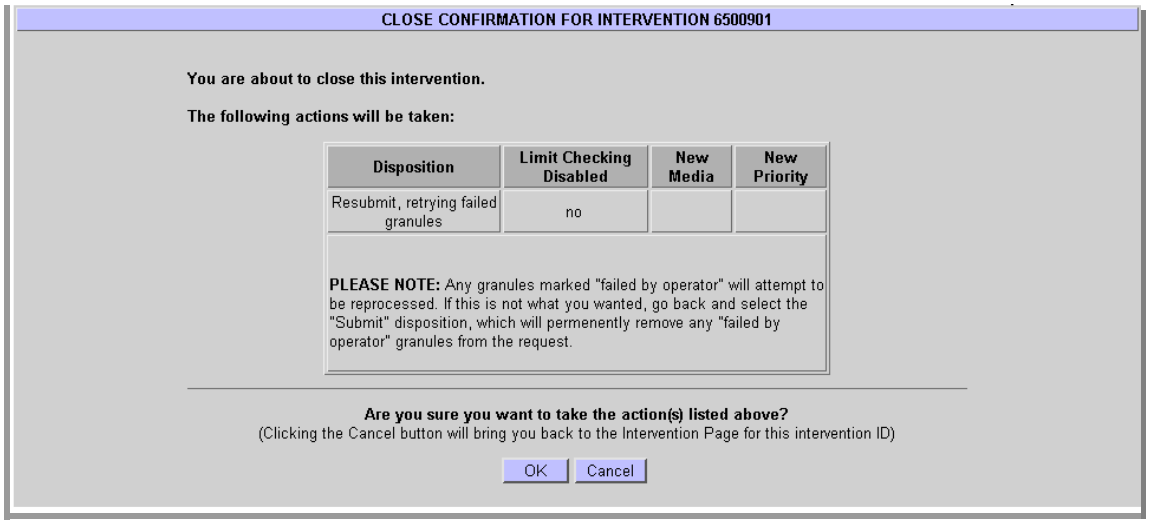


Figure 15.6-16. Close Confirmation for Intervention <ID> Page

15 Click **OK** to complete and confirm the process of failing intervention(s) or to take action(s) listed on the closed confirmation:

- **Intervention Closed** confirmation displays.

16 Click **OK** to acknowledge confirmation.

- The **Open HEG Interventions** page is returned.

NOTE: Granule replacement is not permitted for a HEG intervention.

15.6.3 Request Management Submenu Page – Completed Actions and Interventions Filter

The Completed Action and Interventions page displays all Operators (either full-capability or limited-capability) recently closed interventions, including those that have been resubmitted, partitioned, or failed.

The **Completed Action and Interventions** page (Figure 15.6-18) displays filter results of the Operator defined options and fields (Figure 15.6-17):

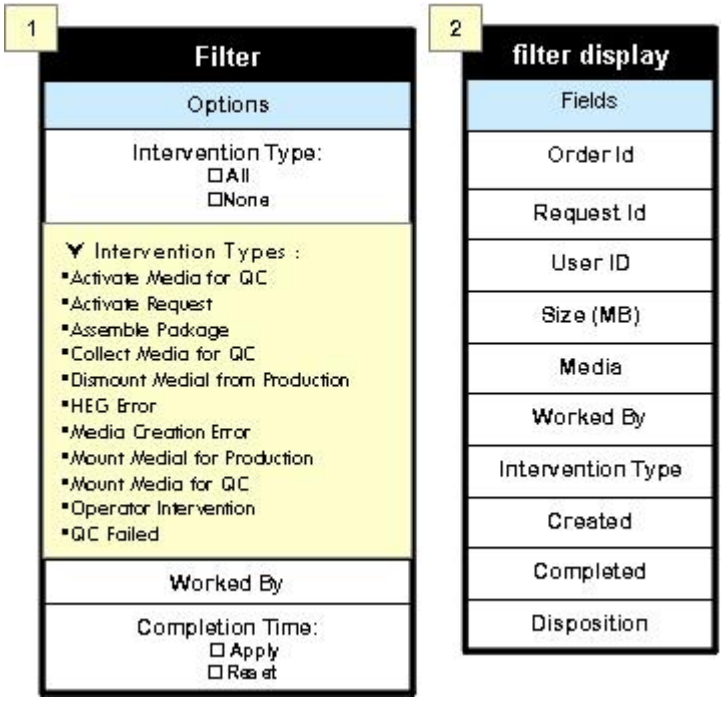


Figure 15.6-17. Completed Action and Interventions – Fields and Options (NOTE: Hard Media actions obsolete in 8.1)

15.6.3.1 Filtering Data on Completed Actions and Interventions Page

1 Click **Request Management** menu option to expand its submenu.

2 Click **Completed Actions and Interventions** submenu option to display its page (Figure 15.6-18).

3 Define the **filter criteria** as follows:

- Select one or more **Intervention Type** from the filter section list.
- Select an available User or All Users from the **Worked By** listbox.
- Define the **Completion Time**.

4 To apply the filter, click the **Apply** button.

- The **Completed Operator Actions and Interventions** page refreshes with results.

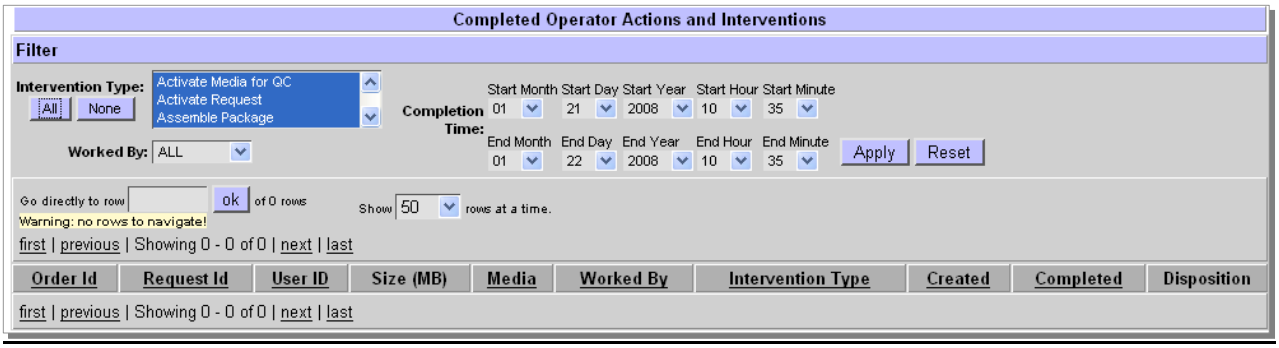


Figure 15.6-18. Completed Action and Interventions Page (NOTE: only two types of interventions exist post 8.1)

15.6.4 Request Management Submenu Page – Distribution Requests [filter]

The Distribution Request page allows Operators (either full-capability or limited-capability) the ability to filter and view lists of all currently distributed requests processed through Order Manager from all order sources. The data distribution function will also allow the Operator to perform the following actions (on eligible requests):

- suspend new request processing.
- suspend or cancel individual requests.
- and change the priority of any request.

In addition to these capabilities, the Operator can view extensive details of FtpPush distribution and staging requests by selecting column links of the order id or request id.

NOTE: Filter settings can persist from session to session when opening the Distribution Request page.

15.6.4.1 Filtering Data on Distribution Requests Page

1 Click **Request Management** menu option to expand its submenu.

2 Click **Distribution Requests [filter]** submenu option to display its.

- The **Distribution Requests [filter]** page (Figure 15.6-19, Frame A) displays.

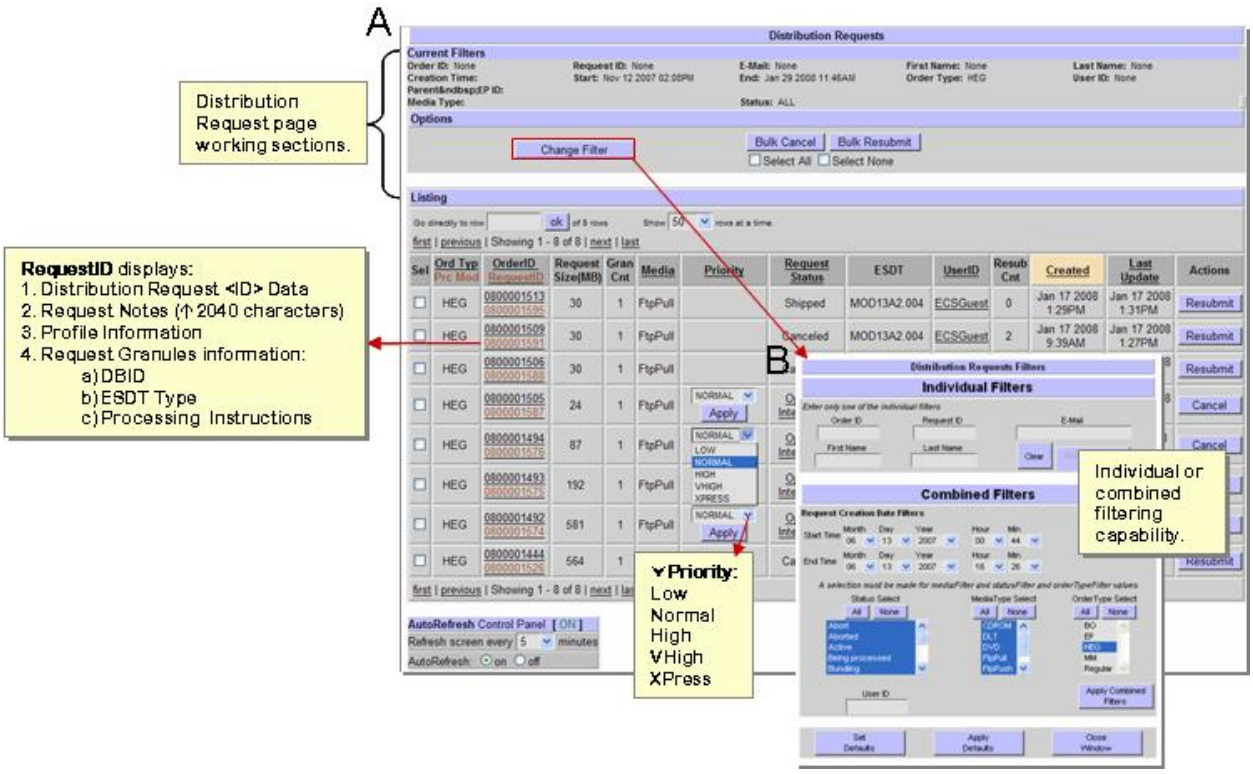


Figure 15.6-19. Distribution Requests Page and Filter Window

3 Observe the **Distribution Requests** page**,** which has three working parts:

1 - **Current Filters** – displays data (Figure 15.6-20, Frame 1) by the set of pre-defined criteria specified (Figure 15.6-19, Frame B) by the Operator.

2 - **Options** – has three features (Figure 15.6-20, Frame 2) to allow operator to:

- **Change Filter –** define or redefine the criteria for displaying the list of distribution request on a page.
- **Bulk Cancel –** provides capability to cancel "All" or "None" (checkbox) of the eligible selected requests on a page.
- **Bulk Resume** – provides capability to submit "All" or "None" (checkbox) of the eligible selected requests on a page.
- **Bulk Claim** – provides capability to claim "All" or "None" (checkbox) of the eligible selected intervention(s) requests on a page.

3 - **Listing –** captures the distribution requests filter output (Figure 15.6-20, Frame 3):

- The **Sel** column provides checkboxes to mark or select a single request (row) to be resubmitted, suspended or canceled.
- **Ord Typ/Prc Mod** represents the Order Type or Processing Mode.

- Several underscored **column headings**, when clicked, displays additional information regarding the details of a request.
- The **Priority** column allows Operator to change a request priority using the options listed in the drop-down listbox on a row.
- The **Actions** checkbox permits Operator to resubmit, cancel, suspend or resume eligible request(s).

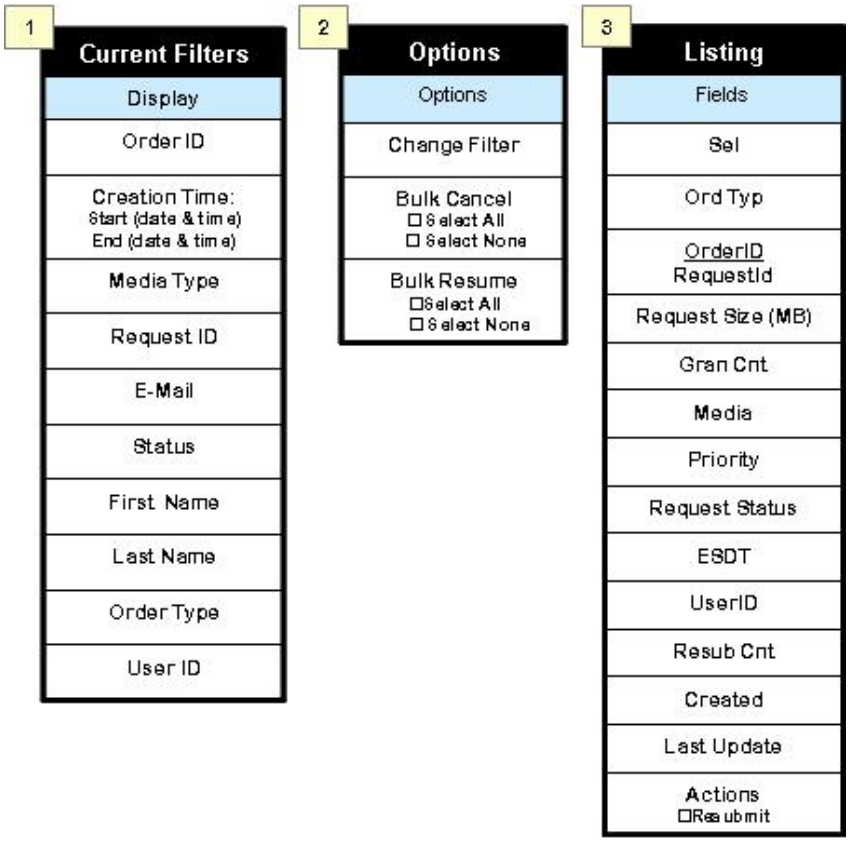


Figure 15.6-20. Distribution Requests Page – Fields and Options

4 To define the filter criteria:

Click the **Change Filter** button, in the **Options** area (Figure 15.6-20, Frame A).

- The **Distribution Requests Filters** window appears.

5 Observe the **Distribution Request Filter** window**,** which has two working parts:

1 - **Individual Filters** – displays limited options (Figure 15.6-19, Frame B) to set a defined criterion specific to a request (Figure 15.6-19, Frame B). Those options are:

- **Order ID**
- **Request ID**
- **E-Mail**
- **First Name**
- **Last Name**

NOTE: Operator can apply only one option of the individual filter.

2 - **Combined Filters** – has several options (Figure 15.6-19, Frame B) to allow operator to combine multiple criteria to define the filter.

6 Create a **combined filter** by performing the following:

- Select a **Start Time** (Month, Day, Year).
- Select an **End Time** (Month, Day, Year) ensuring different that start time.
- Depressing the **<Ctrl>** keep, make multiple **Status Select** selections: **Cancelled, Completed processing, Pending, Shipped.**
- Select **All** for **Media Type Select (**can include FtpPull, FtpPush, SCP (Secure Copy Protocol).
- Select **HEG** for **Order Type Select (**can include Order types "Regular," "BO" (Bundled Order), DA (ESI DataAccess Processing) and "HEG" (HDF-EOS to GeoTIFF Conversion requested through DPL Web Access).
- Select All for the Order Source Select (can include Order Sources "DataPool," "Echo," "SCLI," "SSS").
- Click **Apply Combined Filters** button to generate filter.

- The **Distribution Requests Filters** window closes and the Distribution Requests window displays with the applied combined filter results.

7 Click the **request <ID>** under the **Request ID** column to view the distribution request profile information, request notes, addresses (mailing, shipping, billing) and granule information for the request.

- The **Distribution Request <ID> Profile** appears displaying its multiple parts of information (Figure 15.6-22).

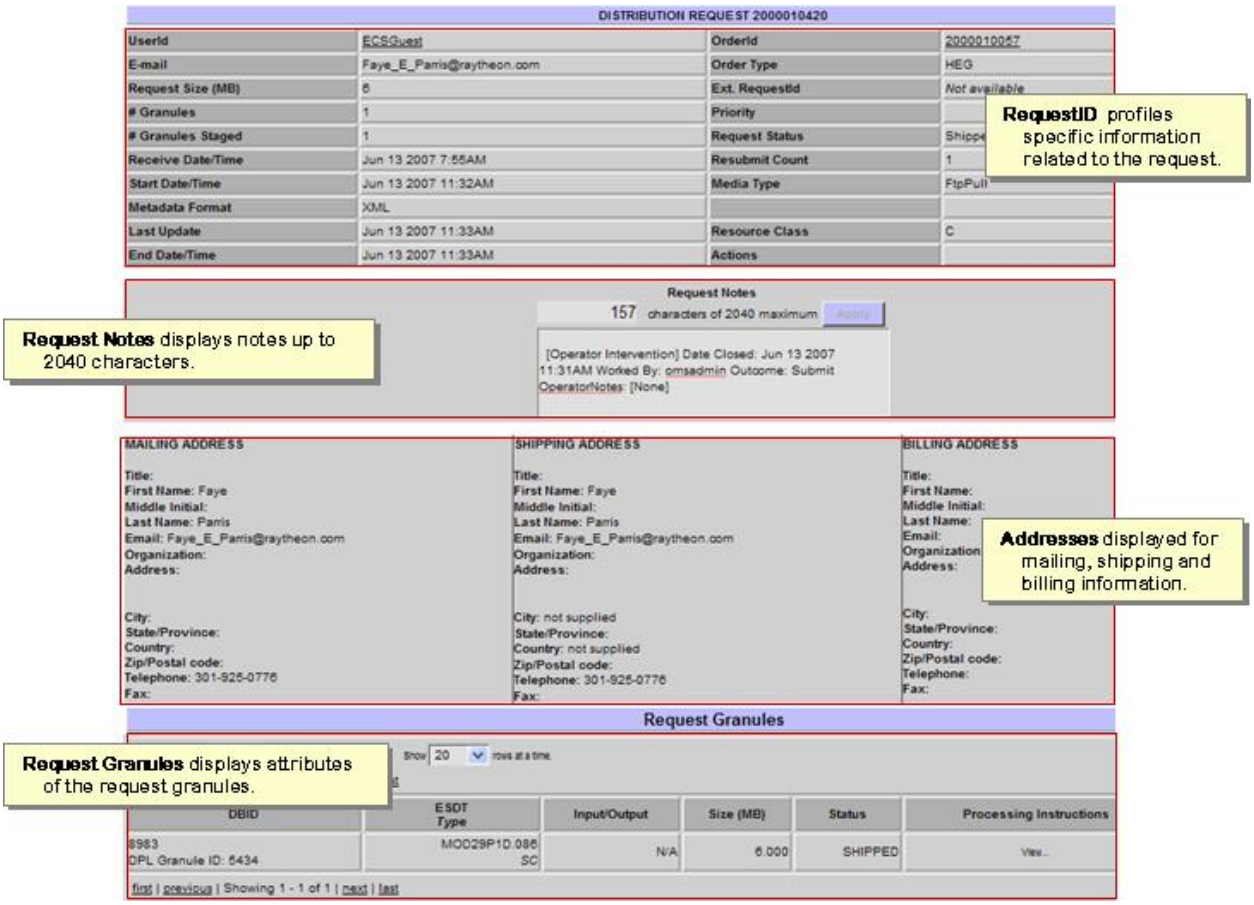


Figure 15.6-21. Distribution Requests <ID> Profile

NOTE: The Profile For ECSGuest can also be reviewed from this window by selecting the ECSGuestID.

8 Click the **Home** link on the left pane of the OM GUI menu option to return to the **Order Manager Home** page.

- The **Order Manager Home** page (Figure 15.4-2) displays.

15.6.5 Request Management Submenu Page – FtpPush/SCP Requests Filters and Staging Requests Filters

The distribution requests filtering allow Operators (either full-capability or limited-capability) the ability to view extensive details of FtpPush/SCP and Staging distribution requests currently processed through Order Manager from all order sources. The limited-capability Operator is not allowed to edit FtpPush parameter values for distribution requests using the OM GUI.

The FtpPush/SCP and Staging distribution requests pages allows the Operator to:

- Change the priority of or suspend a distribution request while the requested granules are in a staged or pushed waiting state.
- Resume a request that was suspended by the OM GUI operator or while the processing of new requests by the OMS is suspended.
- Resubmit a request in a terminal state (e.g., aborted, cancelled, terminated, or shipped).
- Cancel a request that is not in a terminal state and while the requested granules are in a staged or pushed waiting state.

15.6.5.1 Filtering FtpPush/SCP Requests or Staging Requests Page

1 Click **Request Management** menu option to expand its submenu.

2 Click **FtpPush/SCP Requests [filter]** submenu option to display its page.

- The **FtpPush/SCP Distribution Requests** page (Figure 15.6-22) displays.

(Or to view **Staging Distribution Requests** page:

- Click **Staging Requests [filter]** submenu option to display its page.
- The **Staging Distribution Requests** page displays.)

3 To define the **filter criteria**:

- Click on the **Change Filter** button, from the Options section of the FtpPush/SCP (or Staging) Distribution Requests page.
- The **FtpPush/SCP (or Staging) Distribution Requests Filters** window (Figure 15.6-22, Frame A (or Frame B) appears.

4 Observe the **FtpPush/SCP (**or **Staging) Distribution Requests Filters** window**,** which has two working parts:

1 - **Individual Filters** – displays limited options (Figure 15.6-22, Frame A (or B) to set a defined criteria specific to a distribution request. Those options are:

- **Order ID**
- **Request ID**
- **E-Mail**
- **First Name**
- **Last Name**

NOTE: Operator can apply only one option of the individual filter.

2 - **Combined Filters** – has several options (Figure 15.6-22, Frame A (or B) to allow operator to combine multiple criteria to define the filter.

5 Create a **Combined Filter** by performing the following:

- Select a **Start Time** (Month, Day, Year)
- Select an End Time (Month, Day, Year) ensuring different that start time
- Depressing the **<Ctrl>** keep, make multiple **Status Select** selections: **Cancelled, Completed processing, Pending, Shipped**
- Select **All** for **Media Type Select** option**:**

- For **FtpPush/SCP** distribution requests, media options include FtpPush or SCP (Secure Copy Protocol), Figure 15.6-22, Frame A.
- For **Staging** distribution requests, media options include FtpPull, FtpPush, SCP (Secure Copy Protocol), Figure 15.6-22, Frame B.
  - Select **HEG** for **Order Type Select** option**:**
- For **Staging** distribution requests, order type options include, "Regular," "BO" (Bundled Order), "EP" (Extended Play), "HEG" (HDF-EOS to GeoTIFF Conversion), Figure 15.6-22, Frame B.

NOTE: FtpPush/SCP distribution requests do not support Order Type options.

6 Click **Apply Combined Filters** button to generate filter.

- The **FtpPush/SCP (or Staging) Distribution Requests Filters** window closes and the **FtpPush/SCP (or Staging) Distribution Requests** page displays with the applied combined filter results.

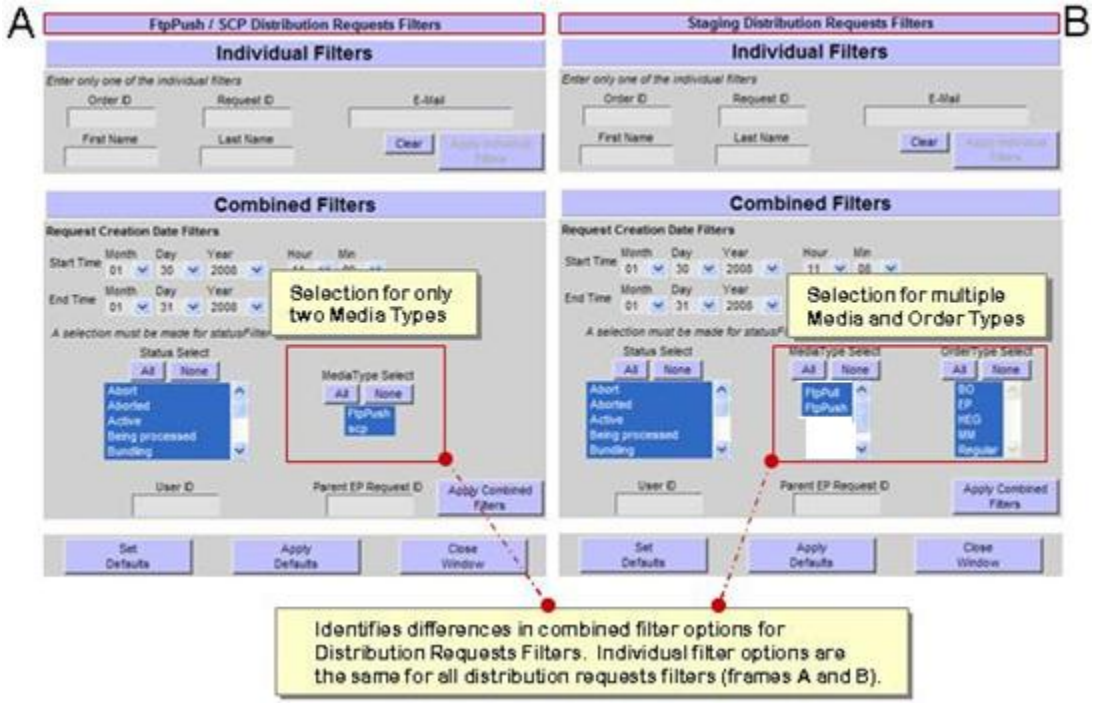


Figure 15.6-22. FtpPush/SCP (A) and Staging (B) Distribution Requests Filters

15.6.6 Request Management Submenu Page – Processing Service Requests [filter]

The Processing Service Requests [Filter] page (Figure 15.6-23, Frame A) allows an Operator to cancel or suspend the external processing requests while those requests are under OMS control. The external processing requests do not have any actions (cancel or suspend) while under the control of the external system. The processing services filter includes HEG, all external subsetter requests and a "Processor" column which indicates the processor name (which includes HEG). The Processing Service Request page does not include filter for media type and order type. It has a processing filter instead. The "Actions "column in the Listing section of the page displays an "InActive" button. For release 8.2 DataAccess processing requests are viewed through the regulare distribution request screen with a filter of OrderType = "DA".

15.6.6.1 Filtering Processing Service Requests Page

The Processing Service Requests page now reflects options allowing the Operator to filter on external processing service or HEG in addition to the offered selections. The Operator can filter any selected external processing service or HEG.

To filter external processing service requests perform the following:

1 Click **Request Management** menu option to expand its submenu.

2 Click **Processing Service Requests [filter]** submenu option to display it's page (Figure 15.6-24, Frame A).

3 Observe the **Processing Service Request** page, which has three working parts:

- **Current Filters** – describes the set of pre-defined criteria.
- **Options** – has a "Change Filter" button to allow operator to define display criteria for the page (Figure 15.6-23, Frame B).
- **Listing –** captures the requested output of what is being filtered.

4 To define the **filter criteria**:

- Click the **Change Filter** button from the Options section of the page.
- Under the **Combined Filter** section, change the **Request Creation Date** year to equal "**01 01 2007**".
- Select **All** options from the listboxes:
  - Status.
  - Media Type.
  - Process Service.

5 To apply the combined filters, select the **Apply Combined Filters** button.

- The **Processing Service Requests** page refreshes with results.

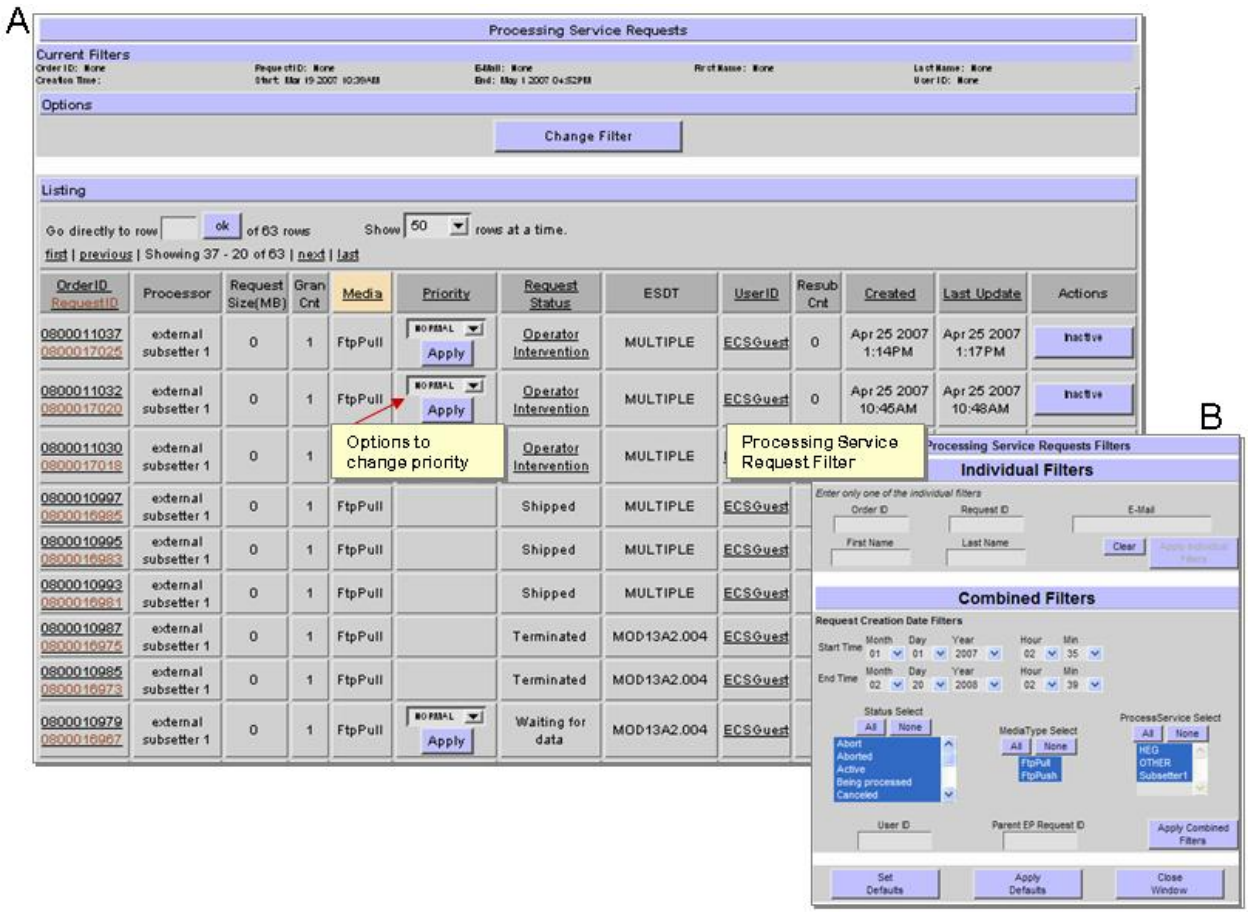


Figure 15.6-23. Processing Services Requests Page and Filter

15.6.7 Request Management Submenu Page – Operator Alerts

The Operator Alerts are valuable non-fatal warnings or errors concerning distribution resources and will not cause an Operator intervention. Once the error is corrected, the alert automatically clears the alerts page.

The Operator Alerts page (Figure 15.6-24) allows the Operator (full or limited capability) to view four alert types detected by the Order Manager Server:

1 - **FtpPush/SCP Destination Alerts** – destination problems not sufficient to cause an Operator Intervention.

2 - **Data Pool File System Alerts** – generated warnings regarding malfunctions of the DPL file system:

- **Unavailability (down).**
- **No free space.**

NOTE: The alerts clears automatically after system functions are up or space is freed.

NOTE: The alerts clears automatically after the quick server resumes functionally, but the achieve server must be manually resumed on the OM Queue Status page to clears alerts.

3 - ECS Server Alerts (AIM database errors warnings) – detected warnings regarding the AIM malfunctions or OMS resources:

- **Unavailability (down).**

15.6.7.1 Handling Operator Alerts

1 Click **Request Management** menu option to expand its submenu.

2 Click **Operator Alerts** submenu option to display its page.

- The **Operator Alerts** page displays.

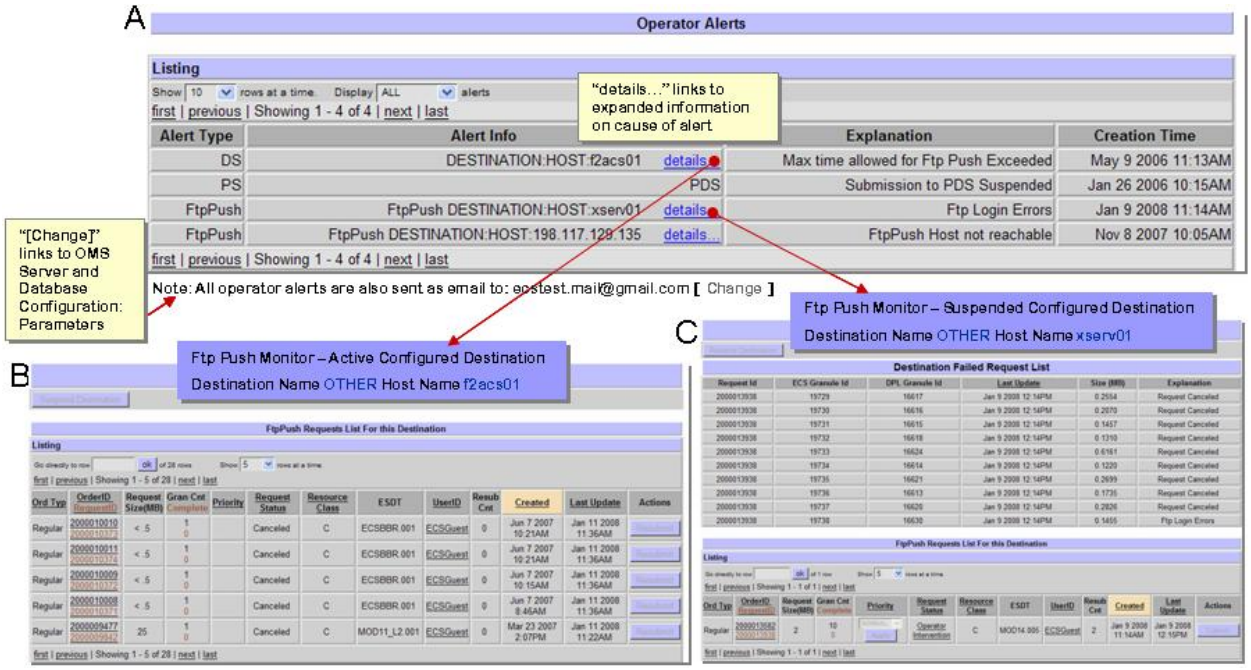


Figure 15.6-24. Operator Alerts Page (A) and Alert Details Page (B-C)

3 Observe the alerts listed on the **Operator Alerts** page (Figure 15.6-24, Frame A). It displays the Order Manager Server's detected system malfunctions in the following fields (Figure 15.6-24, Frame 1 Operator Alerts Page – Fields and Options) of the **Listing section.** This section has two display options:

1 - Show <number> rows at a time – displays limited records (values 5 to 100) on the Operator Alerts Page.

2 - Display <list> alerts – displays selection of several alerts types by groups.

4 At the bottom of the Operator Alerts Page, a note indicates, "All operator alerts are also sent as email to :<email address> [Change]" when an alert or intervention is generated. This email address is configured using the "OMS Server and Database Configuration: Email parameters" page, under the OMS Configuration submenu.

- Click **[Change]** to view the configured Operator Alert Email address.

- The **OMS Server and database Configuration: Email** parameters page displays.
  - Click the navigation **Previous Page (◄)** button, to return to the **Operator Alerts Page.**

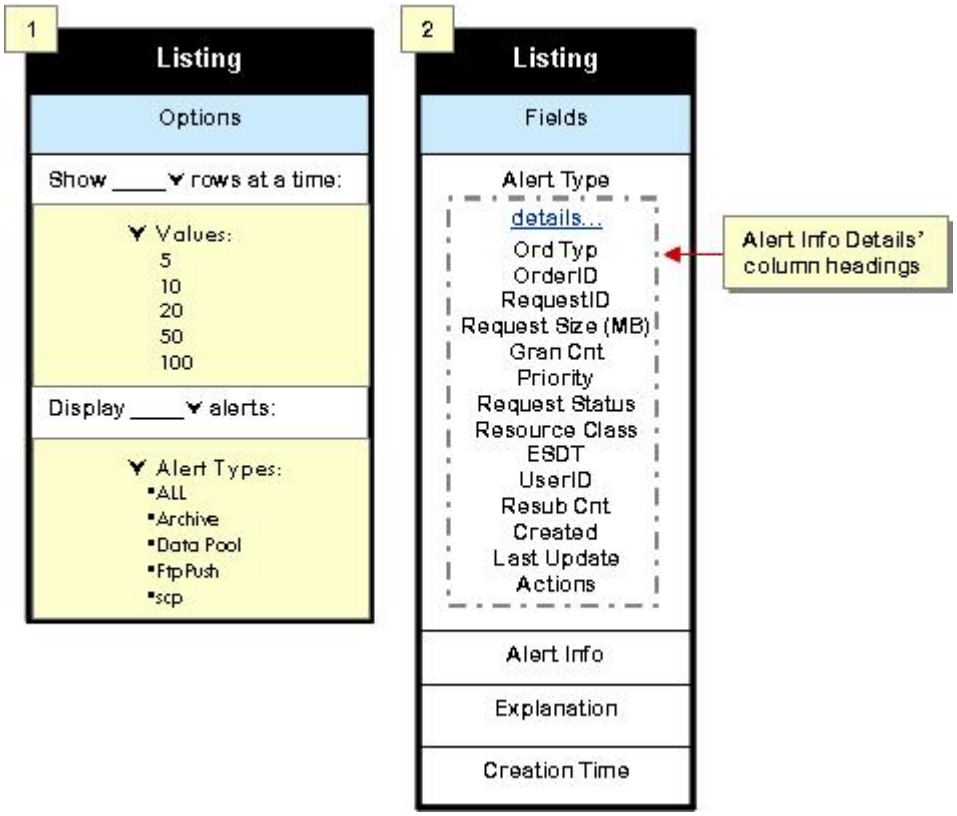


Figure 15.6-25. Operator Alerts Page – Fields and Options

5 Select **FtpPush** using from the **display <list> alerts** option to display all FtpPush Requests.

NOTE: Operator Alerts are displayed in ascending order by Creation Time. Operator can use the browser (Edit, Find in Page) menu option to perform keyword searches on displayed data on current page.

6 Select **details…** under the **Alert Info** column to display extended details affecting the request (Figure 15.6-24 Alert Details Page, Frame B-C).

NOTE: Unlike an Operator Intervention, no specific action can be taken to close an alert. The Order Manager Server automatically clears each alert when the condition(s) causing the infarction is satisfied or is in a satisfactory state.

15.6.8 Exiting the OM GUI

The procedure for closing Request Management submenu pages on the **OM GUI** will log-out the Operator. This is necessary for meeting security requirements. The Operator can still view the pages of the submenus, but will not be able to perform any actions. The Operator will use the log out option found in the left-panel of the menu to invoke the following:

- Operator is logged out from the OM GUI.

15.6.8.1 Logging Out of OM GUI

1 To logout of the OM GUI, locate the **Log Out** link on the left-pane navigation frame:

- Click the **Log Out** link.
- A log-out dialog box message, "**Are you sure you want to** log out? This will close your browser displays.
- Click **OK** - to dismiss the dialog box and to complete the log-out.
- Click **Cancel** – to dismiss the dialog box without logging out.

15.7 OM GUI – Destination Monitor

The OM GUI menu, Destination Monitor page provides the full-capability Operator with monitoring capability to suspend distributions.

The Destination Monitor submenu options will be examined using the following checklist in Table 15.7-1:

Table 15.7-1. Destination Monitor - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Viewing and Responding to Suspended FtpPush Distribution Destinations	(P) 15.7.1.1	
2	Distribution Technician	Viewing and Responding to Destination Details	(P) 15.7.1.2	

15.7.1 Destination Monitor Submenu Page – Suspended Destinations

The "Suspended Destinations" (Monitor) page provides the full-capability operator with a means of viewing suspended FtpPush/SCP Destinations and performing several kinds of actions, with respect to suspended FtpPush/SCP Destinations:

- Resume suspended destinations.

- Suspend active destinations.
- View details of active or suspended destinations.

15.7.1.1 Viewing and Responding to Suspended FtpPush Distribution Destinations

1 Click **Destination Monitor** menu option to expand its submenu.

2 Click **Suspended Destinations** submenu option to display its page.

3 Observe information displayed on the **Suspended Destination Monitor** page (Figure 15.7-1, Frame A).

- The **Suspended Destinations** page has the following columns:
  - **Media Type.**
  - **Destination Name**.
  - **Host Name.**
  - **Time of Suspension** (if applicable, date and time when the destination was suspended).
  - **Granules Queued Count** (number of granules that are queued).
  - **Granules Queued Size MB** (total size in MB of all granules that are queued).
  - **Suspend Reason** (why the destination was suspended).
  - **Resume** (buttons for resuming the destination).

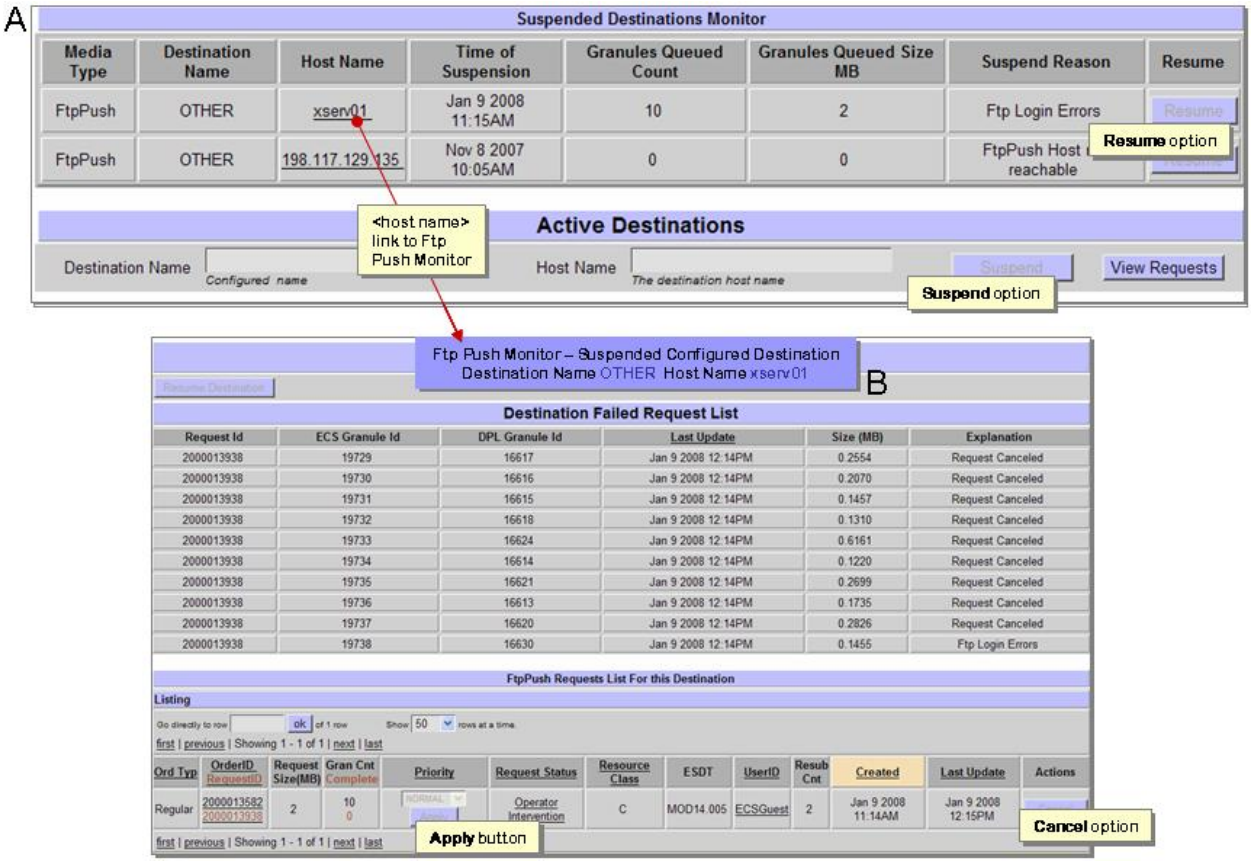


Figure 15.7-1. Suspended Destinations Monitor (A) and Ftp Push Monitor-Suspended Configured Destination (B) Pages

4 To resume a **suspended destination:**

- Click the **Resume** button in the destination's **Resume** column (if applicable).

- The destination is resumed.
- The **Suspended Destinations** page refreshes and the resumed destination is no longer on the list of suspended destinations.

5 To suspend an **active destination or view destination** details of an active or suspended destination:

- In the **Active Destination** section of the screen, enter the **Destination Name** or the destination **Host Name (FTP Node**) in appropriate text field.
- Click applicable button:
  - **Suspend** – to suspend an active destination and refresh the page. The suspended destination is included in the list of suspended destinations.
  - **View Requests** - to view ftp push requests associated with an active destination or a suspended destination.
    - The **FtpPush Requests List For this Destination** page (Figure 15.7-1, Frame B) displays.

NOTE: The data displayed in the Ftp Push Requests List For this Destination section are not in a terminal state.

The **Host Name Details** (Destination Details) page (Figure 15.7-1, Frame B) provides the full-capability Operator the ability to view detailed data of a particular destination and can perform the following actions:

- Suspend an active destination.
- Resume a suspended destination.
- Change the priority of a distribution request associated with the FtpPush destination while granules for the request still need to be staged or while granules for the request still need to be pushed.
- Suspend a request that still needs to be staged or while granules for the request still need to be pushed.
- Resume a request that was suspended by the **OM GUI** operator or while the processing of new requests by the OMS is suspended.
- Cancel a request that is not in a terminal state and while granules for the request still need to be staged or while granules for the request still need to be pushed.

15.7.1.2 Viewing and Responding to Destination Details

1 Click the **Host Name link** on the **Suspended Destinations Monitor** page to display the Destination Details page (if not already being displayed).

- The **Ftp Push Monitor-Suspended Configured Destination** page displays (Figure 15.7-1, Frame B).

2 Observe information displayed on the **Ftp Push Monitor-Suspended Configured Destination** page.

- The page displays the **associated destination and host names** in its title.
- The **Destination Failed Request List** section has the following columns:
  - **Request Id.**
  - **ECS Granule Id.**
  - **DPL Granule Id.**
  - **Last Update.**
  - **Size (MB).**
  - **Explanation.**
- Click the underscored **column header** causes table contents to be sorted on that column.
  - For example, clicking on the **Last Update** link causes the table to be organized in numerical order by last date updated.
- The **FtpPush Requests List For This Destination Listing** has the following:
- The **Show <number> rows at a time** window to minimize or maximize number of data rows to be displayed at a time.
  - For example, if a **Show <number> row at a time is** being displayed, selecting **50** from the option button would result in the display of a page of data containing up to 50 rows of data.
- The **Go directly to row…** window provides a means of displaying a page of data starting with a particular row of the table.
  - For example, if **Go directly to row <number> of 415 rows** is being displayed, typing **315** in the window and clicking on the **ok** button would result in the display of a page of data containing rows 315 through 364.

3 To **suspend an active destination** (if applicable), click on the **Suspend** button:

- The destination is suspended.
- The **Suspend Destination** button becomes a **Resume Destination** button.

4 To **resume a suspended destination**, click on the **Resume Destination** button:

- The destination is resumed.
- The **Resume Destination** button becomes a **Suspend Destination** button.

5 Click **Home** link on the OM GUI menu, to return to the home page.

15.8 OM GUI – Archive Data

The Operator (whether full-capability or limited capability) is provided with the option of viewing the repository for all historical distributed and processed requests on the OM GUI using filters.

The Archive Data submenu options will be examined using to the following checklist in Table 15.8-1:

Table 15.8-1. Archive Data - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Filtering Historical Distribution Requests	(P) 15.8.1.1	
2	Distribution Technician	Filtering Historical Processing Requests	(P) 15.8.2.1	

15.8.1 Archive Data Submenu Page – Historical Distribution Requests Filter

The Historical Distribution Requests page (Figure 15.8-1, Frame A) provides the full-capability or limited capability operator the tool to view, by filtering (Figure 15.8-1, Frame B), archived distributed requests information on the OM GUI.

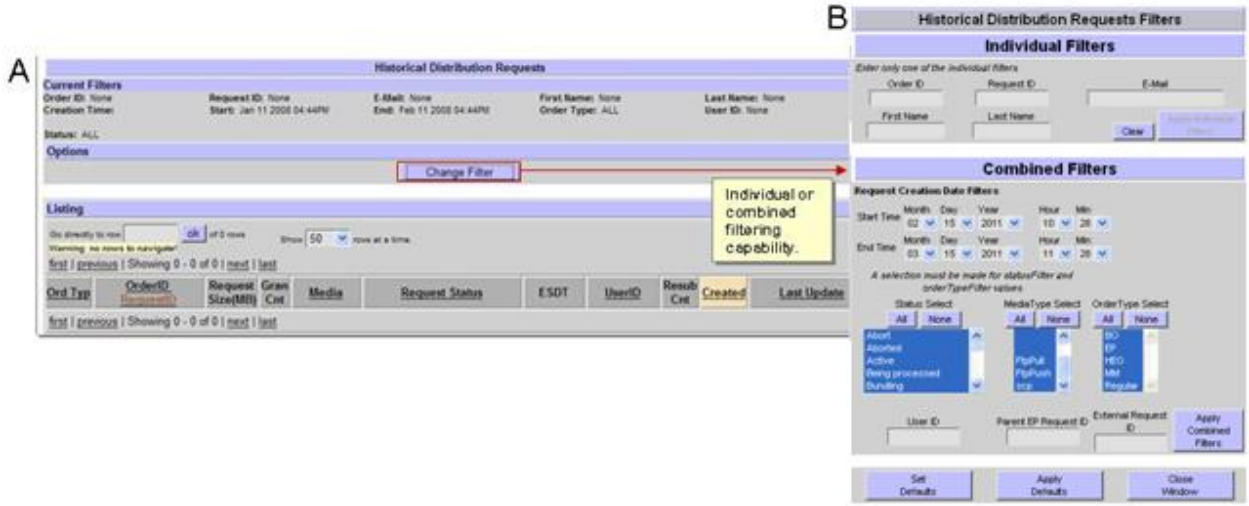


Figure 15.8-1. Historical Distribution Requests Page (A) and Filter (B)

15.8.1.1 Filtering Historical Distribution Requests

1 Click **Archive Data** menu option to expand its submenu.

2 Click **Historical Distribution Requests [filter]** submenu option to display the **Historical Distribution Requests** page (Figure 15.8-1, Frame A).

- The **Historical Distribution Requests** page displays.

3 Observe the historical information displayed in the three working parts of the **Historical Distribution Requests** page (Figure 15.8-2):

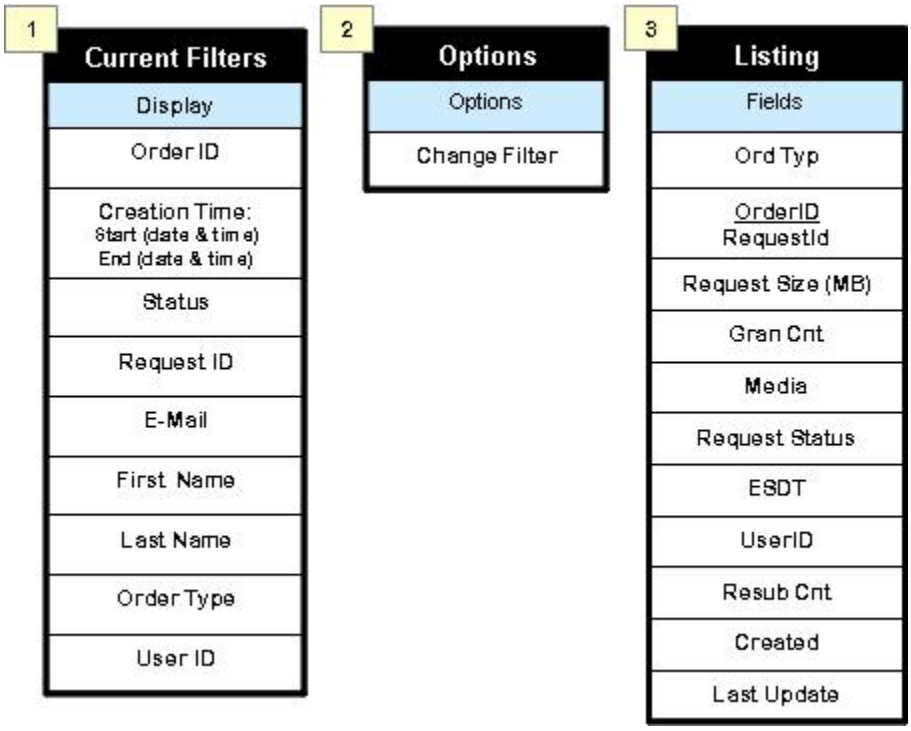


Figure 15.8-2. Historical Distribution Requests Page – Fields and Options

4 Click on an underscored **column header** to sort page by that column:

- Click the **Request Status** to organize the table, alphabetically by the status of the requests in the list.
- Click on a specific **Order ID or Request ID** to display more detailed data concerning that particular order or request on another page.

5 To filter the **Historical Distribution Requests Listing** to display details of a desired request(s), perform the following:

- Click the **Change Filter** button, in the **Options** section of the page.

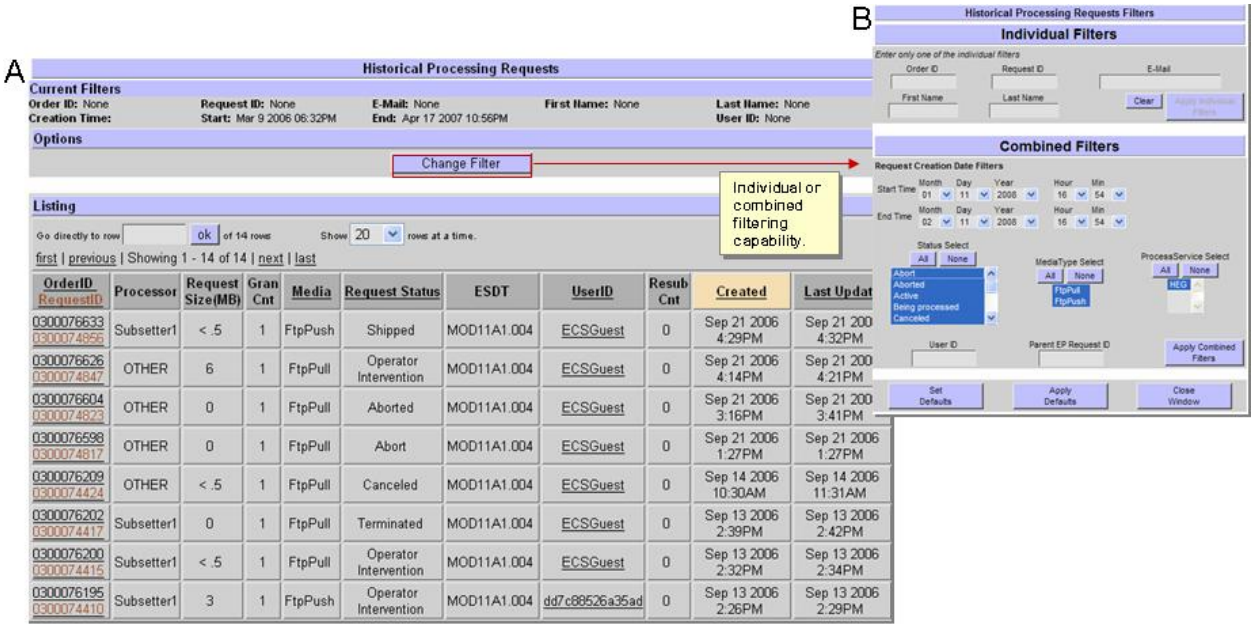
- The **Historical Distribution Requests Filters** window (Figure 15.8-1, Frame B) displays.

- Define **filter criteria**:
  - Enter search data for any one field of the **Individual Filter**.
  - Select multiple options for one or more fields of the **Combined Filter**.
- Click **Apply Combined Filter** (or Apply Individual Filter) button to apply the filter criteria.
  - The **Historical Distribution Requests** page displays.

6 Observe results of the filter change on the **Historical Distribution Requests** page.

15.8.2 Archive Data Submenu Page – Historical Processing Requests Filter

The **Historical Processing Requests** page (Figure 15.8-3, Frame A) provides the full-capability or limited capability operator the tool to identify the archived external processing requests, by filtering (Figure 15.8-3, Frame B), archived processing requests information on the OM GUI. The Operator can filter any specific external processing services or HEG through the historical processing services request filter.



OrderID RequestID	Processor	Request Size(MB)	Gran Cnt	Media	Request Status	ESDT	UserID	Resub Cnt	Created	Last Updat
0300076633 0300074856	Subsetter1	< .5	1	FtpPush	Shipped	MOD11A1.004	ECSGuest	0	Sep 21 2006 4:29PM	Sep 21 200 4:32PM
0300076626 0300074847	OTHER	6	1	FtpPull	Operator Intervention	MOD11A1.004	ECSGuest	0	Sep 21 2006 4:14PM	Sep 21 200 4:21PM
0300076604 0300074823	OTHER	0	1	FtpPull	Aborted	MOD11A1.004	ECSGuest	0	Sep 21 2006 3:16PM	Sep 21 200 3:41PM
0300076598 0300074817	OTHER	0	1	FtpPull	Abort	MOD11A1.004	ECSGuest	0	Sep 21 2006 1:27PM	Sep 21 2006 1:27PM
0300076209 0300074424	OTHER	< .5	1	FtpPull	Canceled	MOD11A1.004	ECSGuest	0	Sep 14 2006 10:30AM	Sep 14 2006 11:31AM
0300076202 0300074417	Subsetter1	0	1	FtpPull	Terminated	MOD11A1.004	ECSGuest	0	Sep 13 2006 2:39PM	Sep 13 2006 2:42PM
0300076200 0300074415	Subsetter1	< .5	1	FtpPull	Operator Intervention	MOD11A1.004	ECSGuest	0	Sep 13 2006 2:32PM	Sep 13 2006 2:34PM
0300076195 0300074410	Subsetter1	3	1	FtpPush	Operator Intervention	MOD11A1.004	dd7c88526a35ad	0	Sep 13 2006 2:26PM	Sep 13 2006 2:29PM

Figure 15.8-3. Historical Processing Requests Page (A) and Filter (B)

15.8.2.1 Filtering Historical Processing Requests

1 Click **Historical Processing Requests [filter]** submenu option to display the **Historical Distribution Requests** page.

- The **Historical Processing Requests** page (Figure 15.8-3, Frame A) displays**.**

2 Observe the historical information displayed in the three working parts of the **Historical Processing Requests** page and its options (Figure 15.8-4).

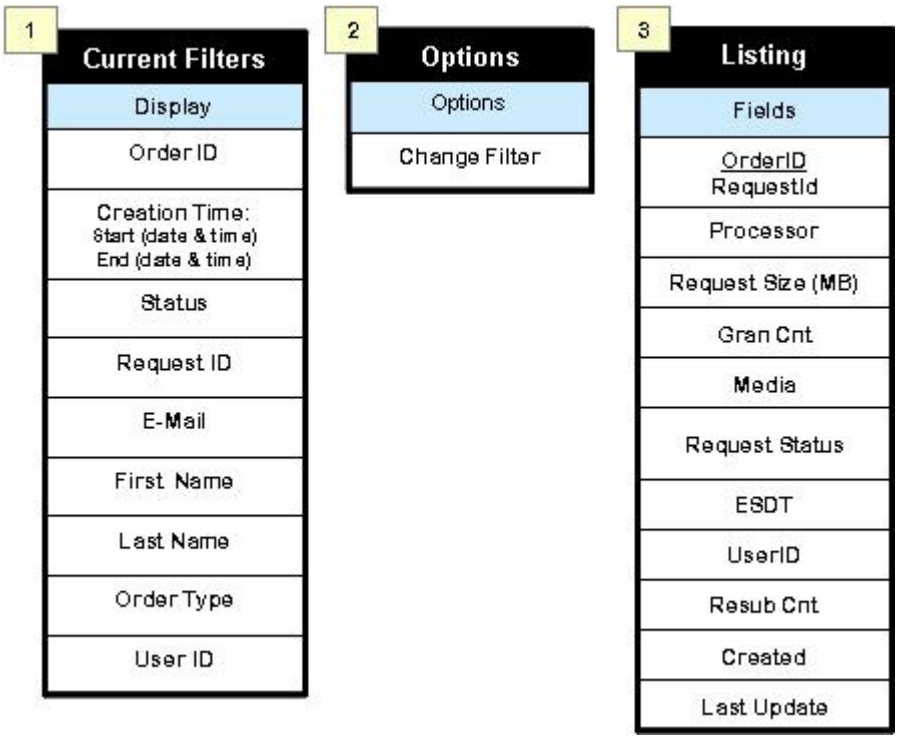


Figure 15.8-4. Historical Processing Requests Page – Fields and Options

3 Click on an underscored **column header** to sort page by that column.

4 To filter the **Historical Processing Requests Listing** to display details of a desired request(s), perform the following:

- Click the **Change Filter** button, in the Options section of the page, to define the filter criteria.
  - The **Historical Processing Requests Filters** window (Figure 15.8-3, Frame B) displays.
- Define **filter criteria**:
  - Enter search data for any one field of the **Individual Filter**.
  - Select multiple options for one or more fields of the **Combined Filter**.
- Click **Apply Combined Filter** (or Apply Individual Filter) button to apply filter criteria.
  - The **Historical Processing Requests** page displays.

5 Observe results of the defined filter criteria on the **Historical Distribution Requests** page.

15.9 OM GUI – OM Status Pages

The Operator (full or limited capability) is provided summary information on current requests processing states, with the option of invoking queries to view the statuses on the on the OM Status pages. The parameters for these status pages are modifiable using the OM Configuration Server/Database submenu options.

NOTE: Use the Server/Database Configuration menu to set database and server parameters to "fine tune" the Order Manager Server and the database. These are general parameters that affect the entire system, but no particular media types.

The OM Status Pages submenu options will be examined using to the following checklist in Table 15.9-1:

Table 15.9-1. OM Status Pages - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Viewing/Modifying OM Queue Status	(P) 15.9.1.1	
2	Distribution Technician	Viewing HEG Order Status	(P) 15.9.2.1	
4	Distribution Technician	Viewing Pending HEG Granules	(P) 15.9.4.1	
5	Distributed Technician	Viewing Data Pool File System Status	(P) 15.9.5.1	

15.9.1 OM Status Pages Submenu Page – OM Queue Status

The **OM Queue Status** page (Figure 15.9-1) provides the full-capability operator with a means to monitor and modify the current status of request queues for all media as well as the request queues for OMS, e-mail, staging, and HEG. (The limited-capability operator can monitor but cannot change the status of queues.) In addition, the **OM Queue Status** page allows both full-capability and limited-capability Operators to determine the status (“up” or “down”) of the Order Manager Server.

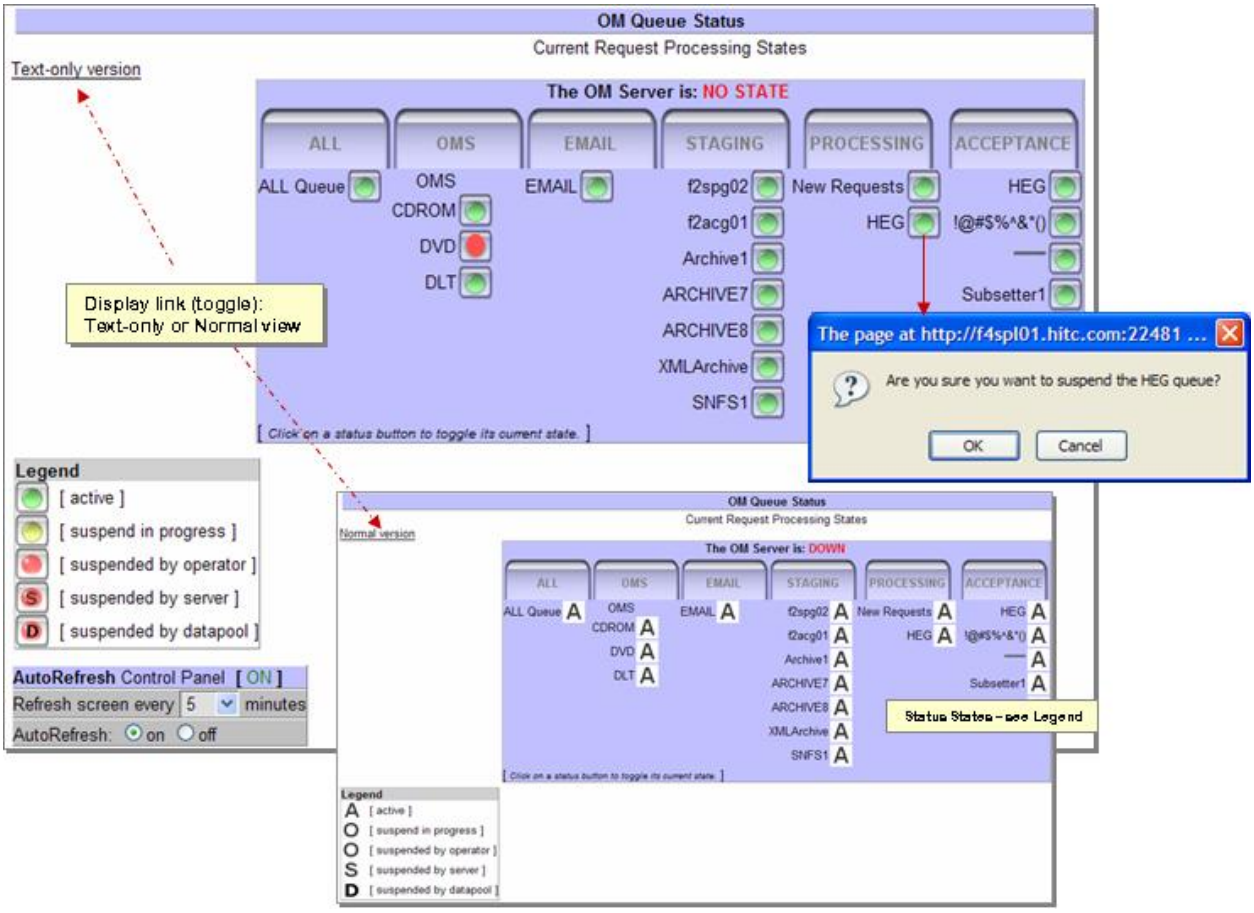


Figure 15.9-1. OM Queue Status Page

15.9.1.1 Viewing/Modifying OM Queue Status

1 Click **OM Status Pages** menu option to expand its submenu.

2 Click **OM Queue Status** submenu option to display its page (Figure 15.9-1).

- If the **OM Queue Status** page is not displayed within a minute, it is likely that the OM Server is not operating properly.
  - For example, it may have stalled while trying to process requests.
- The **OM Queue Status** page displays in Text-only version.

3 Observe displayed information in **Text-only version** (default) of the page.

- Click the **Text-only** link to toggle the view to Normal.

NOTE: The Text-only version was intended for visually impaired Operators.

4 Observe information displayed in the **Current Request Processing States** table.

- The OM Server status is indicated by one of two states:
  1 - **The OM Server is: (**green) **UP** [OM Server is currently operating].
  2 - **The OM Server is: (**red) **DOWN** [OM Server is not currently operating].

The status indicators (legend colors or letters) on the **Current Request Processing States** page are labeled (by color circles or a letter, based on display version) to indicate the status of the request queues. If clicked, the Operator can toggle states from "activate" to "suspend" or vice versa. The Text-only versions indicators represents:

- **Green (no letter or A)** – the queue is active (or resumed). The queue is currently active or was resumed by either Operator or Server (automatic) intervention.
- **Red (no letter or O)** – indicates that the queue was manually suspended by Operator or if yellow, that the queue is suspend in progress.
- **Red (S)** – indicates that the queue was automatically suspended by OM Server. This is a non-Operator controlled event.
- **Red (D)** – indicates that the queue has been suspended by Datapool.

5 To toggle the queue state, click on the **queue status indicator/button:**

- A confirmation dialog box displays asking, **Are you sure you want to <state> the <queue type> queue?** (Figure 15.9-1)
  - Click **OK** to change the state of the queue and dismiss the dialog box.

15.9.2 OM Status Pages Submenu Page – HEG Order Status

The **HEG Order Status** page (Figure 15.9-2) allows the full-capability Operator to monitor the number of HEG requests and data volume currently in HEG processing. The information is displayed on the HEG Order Status page is as follows:

- **Total HEG Requests Queued**.
- **Total HEG Granules Queued**.
- **Total Input Data (MB)**.

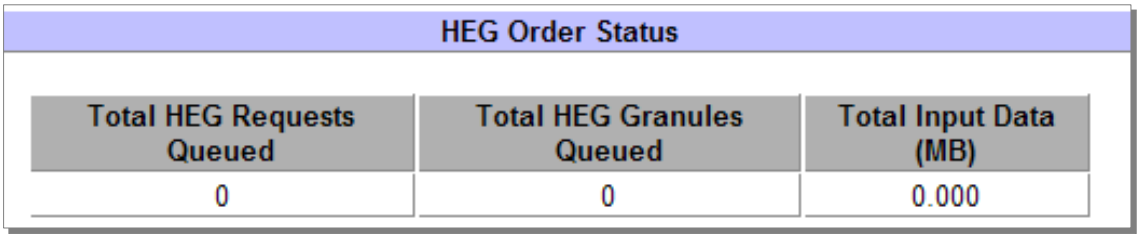


Figure 15.9-2. HEG Order Status Page

15.9.2.1 Viewing HEG Order Status

1 Click OM Status Pages menu option to expand its submenu.

2 Click **HEG Order Status** submenu option to display its page (Figure 15.9-2).

- The **HEG Order Status** page displays.

3 Observe information displayed on the **HEG Order Status** page.

- The **HEG Order Status** page has the following columns:
  - **Total HEG Requests Queued.**
  - **Total HEG Granules Queued.**
  - **Total Input Data (MB).**
- If **AutoRefresh** is **ON**, the HEG Order Status page refreshes automatically as often as specified in the "Refresh screen every <number> minutes" window.

15.9.3 OM Status Pages Submenu Page – Staging Status (Media Type, FTP Push Destination and SCP Destination)

The **Staging Status** pages (three types), shown in Figure 15.9-3, allows the Operator (full or limited capability) to monitor the number of granules and data volume currently in staging states.

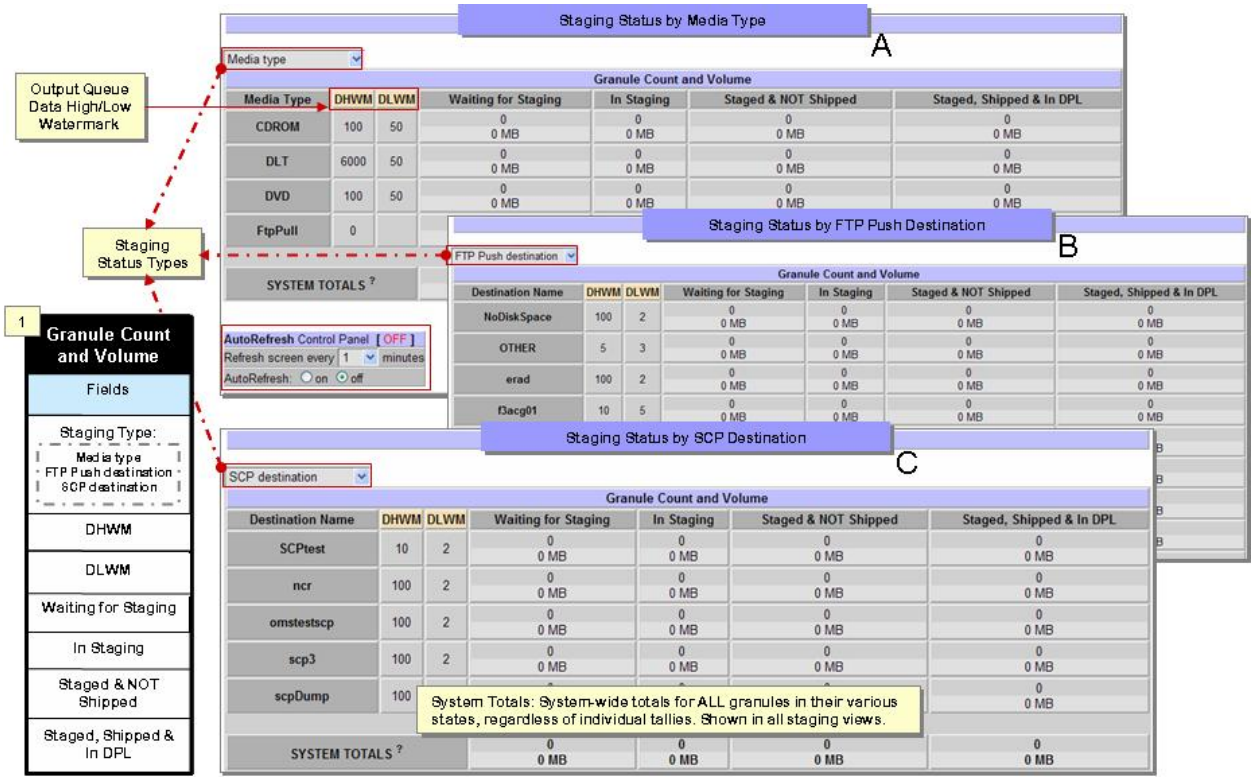


Figure 15.9-3. Staging Status Pages and Table (Fields)

Staging Status pages (Figures 15.9-3, Frames A, B, C) displays status in ALL or three ways:

1 - Media Type (Figures 15.9-3, Frames A).

2 - FTP Push Destination (Figures 15.9-3, Frames B).

3 - SCP Destination (Figures 15.9-3, Frames C).

The granules staging information (Figure 15.9-3 Staging Status Pages and Table (Fields) is arranged in four categories:

1 - Granules **Waiting for Staging**.

2 - Granules **In Staging**.

3 - Granules that have been **Staged and NOT Shipped**.

4 - Granules that have been **Staged, Shipped and In DPL**.

15.9.3.1 Viewing Staging Status

1 Click **OM Status Pages** menu option to expand its submenu.

2 Click **one of three Staging Status** submenu options (Media Type, FTP Push Destination or SCP Destination) to display its page (Figure 15.9-3: Frame A-Media Type; Frame B-FTP Push Destination; Frame C-SCP Destination).

- The **Staging Status by <staging type>** status page displays.

3 To view another staging status page, select **staging type** from the list box on the currently displayed page.

4 Observe displayed information (Figure 15.9-3) of the Granule Count and Volume section on the **Staging Status** page as follows:

- The **Staging Status** pages, each displays same information columns, except that data is either media or destination generated.
- **The System Totals** are system-wide totals for ALL granules in their various states, regardless of individual tallies.
- If **AutoRefresh** is **ON**, the **Staging Status by <staging type>** page refreshes automatically as often as specified in the **Refresh screen every <n> minutes**.

15.9.4 OM Status Pages Submenu Page – Pending HEG Granules

The **OM GUI** displays pending HEG granules. The **Pending HEG Granules** (Figure 15.9-4, Frame A) page provides Operator (with either full or limited capability) with a means of viewing pending HEG granules.

15.9.4.1 Viewing Pending HEG Granules

1 Click **OM Status Pages** menu option to expand its submenu.

2 Click **Pending HEG Granules** submenu option to display its page (Figure 15.9-4, Frame A).

- The **Pending HEG Granules** page displays.

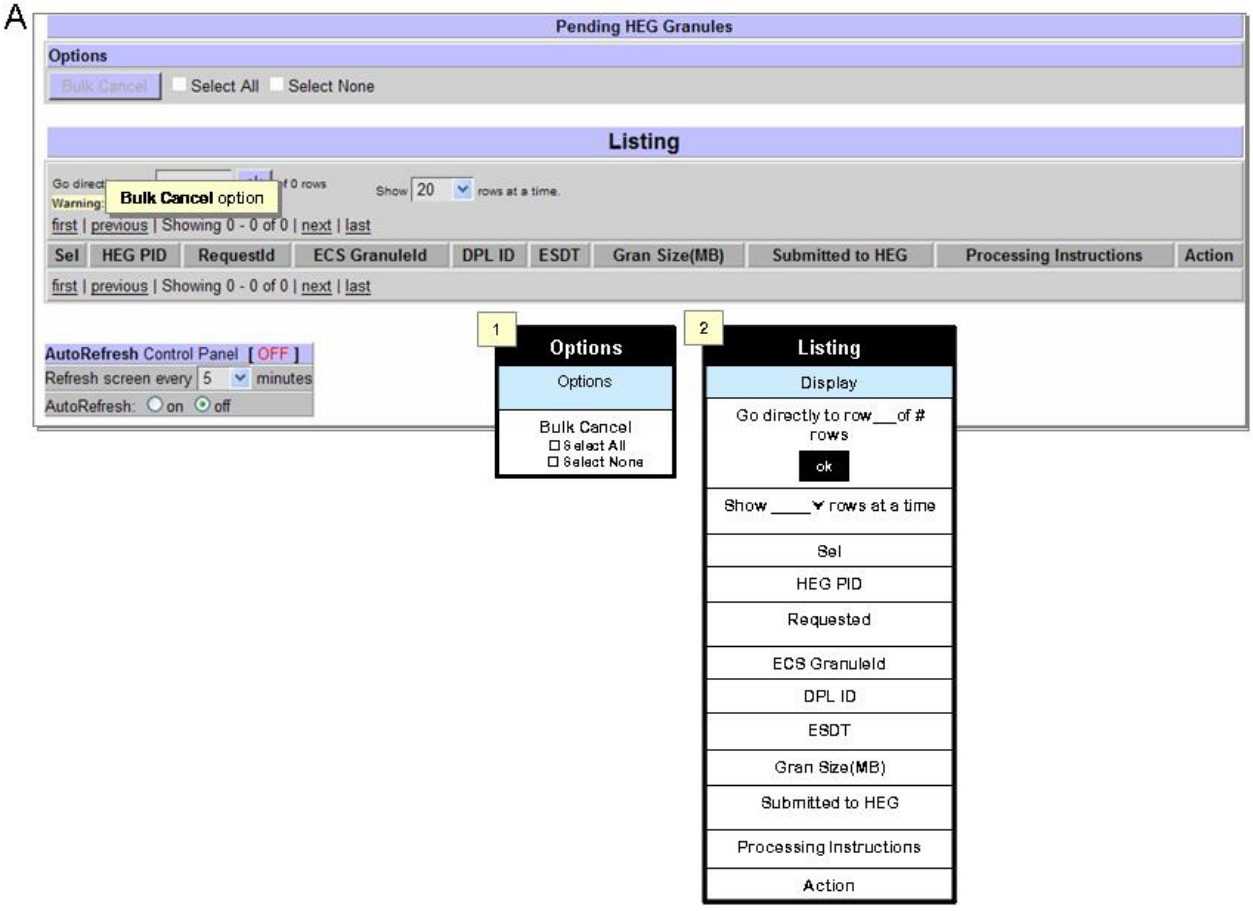


Figure 15.9-4. Pending HEG Granules Page (Frame A) and Tables (Frames 1-2)

3 Observe information displayed on the **Pending HEG Granules** page and its sections:

- The **Options** section of the **Pending HEG Granules** page has the following button and selection boxes (Figure 15.9-4, Table 1):
  - **Bulk Cancel** button [for canceling selected pending HEG granule(s)].

- **Select All** box [for selecting all eligible items for **Bulk Cancel**].
- **Select None** box [for selecting none of the eligible items for **Bulk Cancel**].

4 Observe the information displayed in the **Listing** section (Figure 15.9-4, Table 2) of the **Pending HEG Granules** page:

- Click on a specific **Request ID** in the Listing table of the **Pending HEG Granules** page to bring up a screen containing detailed data concerning that particular request.
- To view the processing instructions for a particular granule, click on the **View…** link in the **Processing Instructions** column in the **Pending HEG Granules** page to bring up a **Processing Instructions** window to view the processing instructions for the line item.
- Click the **Close Window** button to **close the Processing Instructions** window.

5 To **cancel pending** HEG granule(s):

- In the **Options** section, select either the **Select All** check box (if all pending HEG granules are to be failed) or the individual check boxes in the **Sel** column associated with the specific pending HEG granules.
- Click the **Bulk Cancel** button in the **Options** section of the **Pending HEG Granules** page, to complete the cancel pending HEG granule(s) process.
  - The specified pending HEG granules are failed.

15.9.5 OM Status Pages Submenu Page – DPL File System Status

The OM Status menu option provides Operator (full or limited capability) the ability to view-only the ongoing activities of the Data Pool (DPL) File System (Figure 15.9-5). This status page displays the Data Pool File System Status in two categories:

1 - Data Pool File Systems

2 - Archive File Systems

The sections display activity for data pool files' data space (free or used) usage/availability; cache threshold (alerts and suspended); granules file size and processing status.

NOTE: This status page is Read-Only.

15.9.5.1 Viewing Data Pool File System Status

1 Click **OM Status Pages** menu option to expand its submenu.

2 Click **DPL file System Status** submenu option to display the **Data Pool File System Status** page (Figure 15.9-5).

- The **DPL File System Status** page displays.

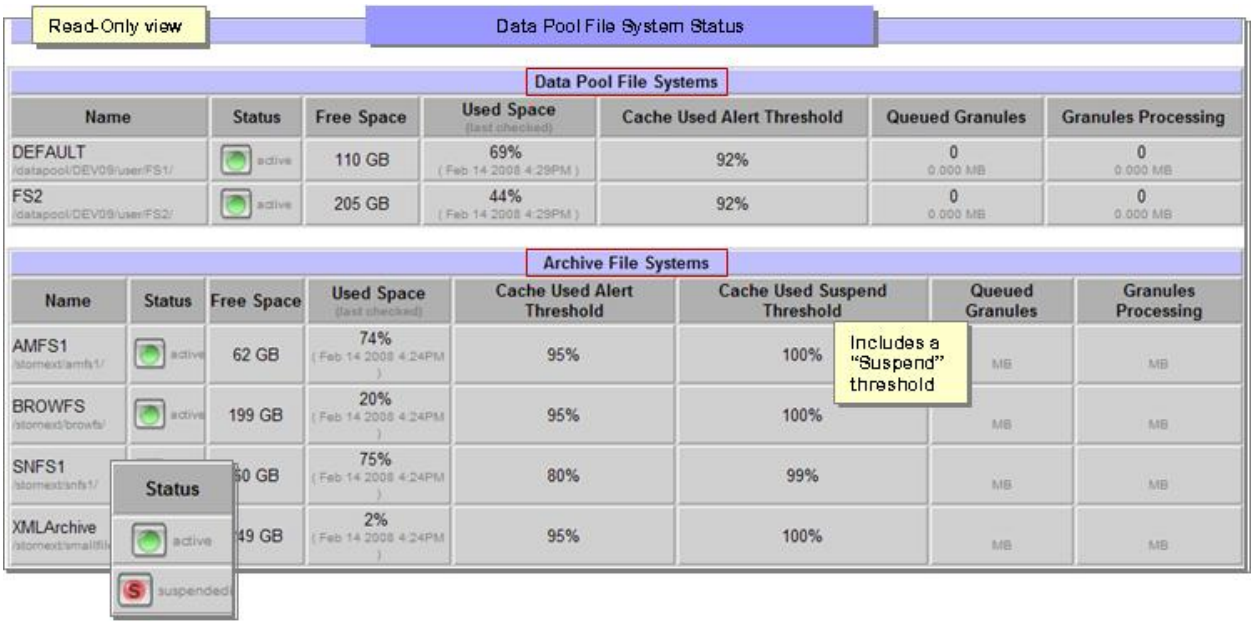


Figure 15.9-5. Data Pool File System Status Page

3 Observe both sections of the **Data Pool file System Status** page, noting that the Archive File Systems section provides and additional "Suspend Threshold" display.

4 Set the **AutoRefresh** to **ON**, the **Data Pool file System Status** page refreshes automatically as often as specified in the **Refresh screen every *x* minutes** window.

15.10 OM GUI – OM Configuration

The OM Configuration menu option provides Operator (full or limited capability) the ability to configure the OM GUI parameters values.

The **OM Configuration** submenu pages provide the full-capability Operator with features to check and modify (if necessary) the values assigned to the following types of OM configuration parameters:

- **Aging Parameters.**
- **[All] OM Server/Database Parameters:**
  - Queue.
  - Cleanup.
  - Email.
  - Media.
  - Staging.
  - Partition.

  - Misc.
  - HEG.
- **Media Parameters.**
- **ODL Metadata Users**
- **External Processing**
- **FtpPush/SCP Policy**

The limited-capability Operator can use the **OM Configuration** page to view the values assigned to OM configuration parameters, but can not change any parameter values.

The OM Configuration submenu options will be examined using to the following checklist in Table 15.10-1:

Table 15.10-1. OM Configuration - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Checking/Modifying Assigned Values of Aging Parameters	(P) 15.10.1.1	
2	Distribution Technician	Checking/Modifying the Configuration of the Assigned Values of OMS Server and Database Parameters	(P) 15.10.2.1	
3	Distribution Technician	Checking/Modifying Assigned Values of Media Parameters	(P) 15.10.3.1	
4	Distribution Technician	Adding/Deleting User Email Address that will receive ODL Metadata File • Adding User Email Address(es) • Deleting User Email Address(es)	(P) 15.10.4.1	
5	Distribution Technician	Adding/Deleting User Email Address that will receive Checksum File • Adding User Email Address(es) • Deleting User Email Address(es)	(P) 15.10.5.1	
6	Distribution Technician	Checking/Modifying External Processing Services Configurations • Add New (or Edit) External Processing Service • Delete an External Processing Service	(P) 15.10.6.1	
7	Distribution Technician	Viewing/Modifying FTP Push/SCP Policy Configuration	(P) 15.10.7.1	

15.10.1 OM Configuration Submenu Page – Aging Parameters

The **Aging Parameters** submenu option allows the full-capability Operator to configure the aging parameter (rules) for each priority level using the **Aging Parameters Configuration** page (Figure 15.10-1).

Aging parameters affect how Distribution Requests are aged over time. There are three aging parameters, however only two are configurable for each ECS Priority Level (i.e., XPRESS, VHIGH, HIGH, NORMAL, or LOW):

1 - Age Step – is the aging rate (range is 0-255, including decimal fractions) by which the effective priority of a request increases for every hour it has been waiting. If the parameter is set to zero (0), waiting requests never increase in priority. However, the priority will not exceed the "Maximum Priority".

For example, if the Age Step is set to 5.5 and a request with an initial priority of 100 waits 10 hours to be pushed, the request increases in priority by a factor of 5.5 every hour until it has been delivered:

Hour 0: priority = 100
Hour 1: priority = 105.5
Hour 2: priority = 111
.
.
.
Hour 10: priority = 155

2 - Maximum Priority – is the maximum priority a request can attain through the aging process. For example, if Maximum Priority were set to 130, once the request had reached a priority of 130, it would not go any higher [e.g., if a Maximum Priority of 130 were applied to the previous example, at Hour 6 the priority would become 130 and at every hour thereafter (if not delivered) it would still be 130].

3 - Starting Priority – is a non-configurable arbitrary value that represents the priority.

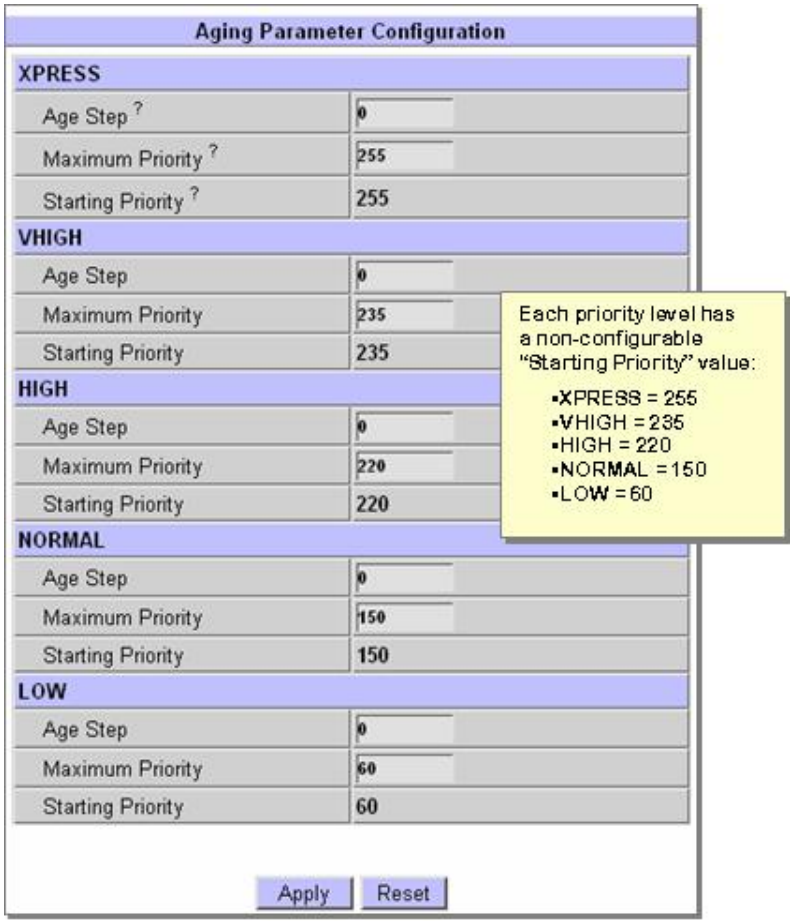


Figure 15.10-1. Aging Parameters Page

15.10.1.1 Checking/Modifying Assigned Values of Aging Parameters

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **Aging Parameters** submenu option to display the **Aging Parameters Configuration** page (Figure 15.10-1).

- The **Aging Parameters Configuration** page displays.

3 Observe the **Aging Parameters Configuration** page aging steps and priority levels values.

- The table is divided into sections for the various distribution request priorities (e.g., XPRESS) and within each section there are rows that indicate the identity and value of each of the following parameters associated with the priority:
  - **Age Step.**
  - **Maximum Priority.**
  - **Starting Priority** (cannot be changed).

4 If aging parameter value(s) is modified (and is authorized):

- Type the **new value(s)** in the text entry box(s) for the relevant parameter(s).
- Click the appropriate button:
  - **Apply -** to apply the new value(s) to the parameter(s)**.**
  - **Reset -** to clear the new value(s) from the text entry box(s) without changing the current value(s). The original value(s) is retained.

15.10.2 OM Configuration Submenu Page – Server/Database

The **OMS Server and Database Configuration** page (Figure 15.10-2) provides the full-capability operator with the capability to check and modify OMS server or database parameter values.

OMS server and database parameters affect functionality of the OM server and database. The parameters are dynamically loaded from the OMS database into the configuration pages on the OM GUI. If a configuration parameter is added to the database, it is subsequently displayed on the OM GUI when the applicable configuration page is requested. If a configuration parameter is deleted from the database, it is no longer displayed on the OM GUI. Consequently, the configuration parameters displayed on the OM GUI are variable.

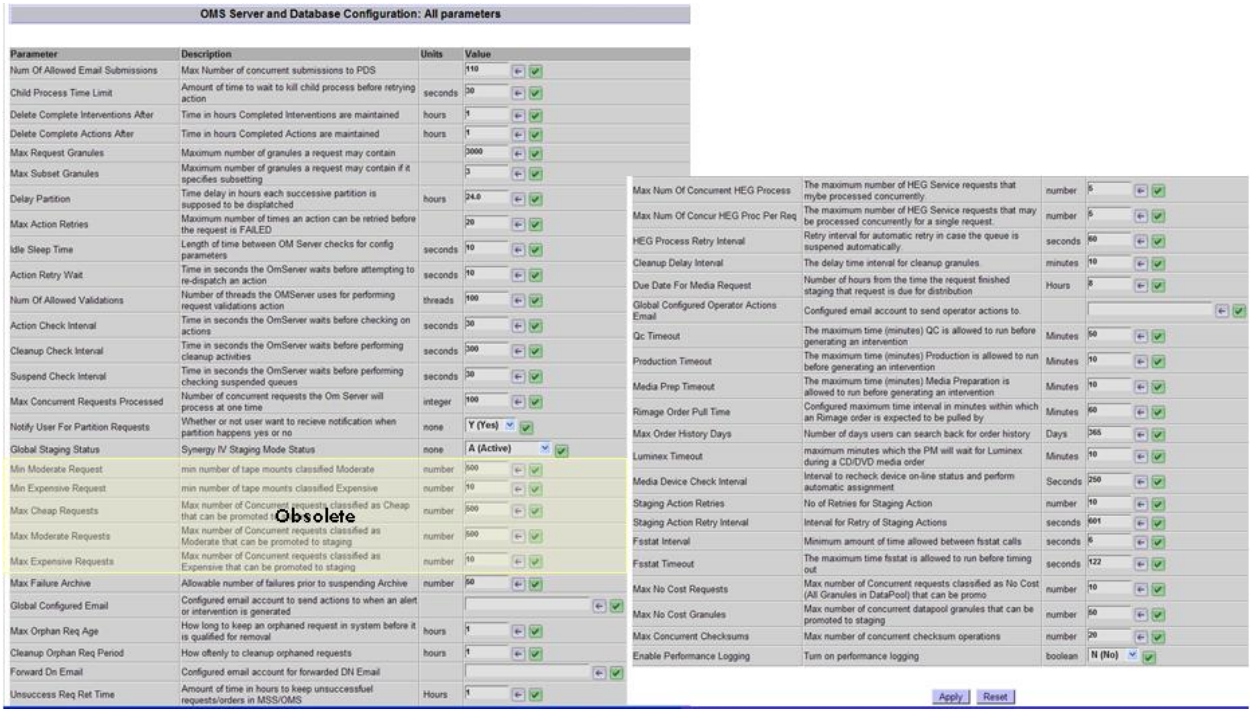


Figure 15.10-2. OMS Server and Database Configuration Page

15.10.2.1 Checking/Modifying the Configuration of the Assigned Values of OMS Server and Database Parameters

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **[All]** submenu option, listed under the **Server/Database** header, to display its page (Figure 15.10-2). To view individual parameter's page click on its associated link:

- To display the **OMS Server and Database Configuration: <name> parameters** page (Figure 15.10-2), click on one of the links listed under the **Server/Database** header of the **OM Configuration** submenu (Example: [**All]**, [**queue parms]**, etc…)
- Links under the **Server/Database** header in the navigation frame of the **OM Configuration** submenu includes the following categories of parameters:
  - **[All]**
  - **[queue parms]**
  - **[cleanup parms]**
  - **[email parms]**
  - **[media parms]**
  - **[staging parms]**
  - **[partition parms]**
  - **[misc. parms]**
  - **[HEG parms].**

NOTE: OMS configuration parameters are dynamically loaded from the OMS database into the configuration pages on the OM GUI. If a configuration parameter is added to the database, it is subsequently displayed on the OM GUI when the applicable configuration page is requested. If a configuration parameter is deleted from the database, it is no longer displayed on the OM GUI. Consequently, the configuration parameters displayed on the OM GUI are variable.

3 Observe information displayed in the table on the **OMS Server and Database Configuration: <name> parameters** page:

- The table on the **OMS Server and Database Configuration: <name> parameters** page has the following columns:
  - **Parameter**
  - **Description**
  - **Units**
  - **Value.**
- The rows in the table indicate the parameter's current values (Figure 15.10-3) and descriptions of the following types of parameters:

Parameters	
Params	Values
queue	Num Of Allowed Email Submissions
queue	Child Process Time Limit
cleanup	Delete Complete Interventions After
cleanup	Delete Complete Actions After
partition	Max Request Granules
partition	Max Subset Granules
partition	Delay Partition
misc.	Max Action Retries
misc.	Idle Sleep Time
misc.	Action Retry Wait
queue	Num of Allowed Validations
misc.	Action Check Interval
misc.	Cleanup Check Interval
misc.	Suspend Check Interval
queue	Max Concurrent Requests Processed
email	Notify User for Partition Request

Parameters (cont)	
Params	Values
staging	Global Staging Status
misc.	Max Failure Archive
email	Global Configured Email
cleanup	Max Orphan Req Age
cleanup	Cleanup Orphan Req Period
email	Forward Dn Email
cleanup	Unsuccess Req Ret Time
HEG	Max Num of Concurrent HEG Process
HEG	Max Num of Concur HEG Proc Per Req
HEG	HEG Process Retry Interval
cleanup	Cleanup Delay Interval
email	Global Configured Operator Actions Email

Parameters (cont)	
Params	Values
misc.	Max Order History Days
staging	Staging Action Retries
staging	Staging Action Retry Interval
staging	Fsstat Interval
staging	Fsstat Timeout
staging	Max No Cost Request
staging	Max No Cost Granules
staging	Max Concurrent Checksums
misc.	Enable Performance Logging

Figure 15.10-3. OM Server/Database Configuration - Parameters

- To manually update (refresh) the data on the screen, click on the **reload** ↺ icon in the **OM GUI** navigation frame.
- The Netscape browser **Edit → Find in Page** menu provides a means of performing a keyword search of the data currently being displayed on the screen.

4 If server or database parameter value(s) is (are) to be modified (and there is authorization to do so), type the **new value(s)** in the text entry box(es) for the relevant parameter(s).

NOTE: Server parameters cannot be set to 0 (zero).

5 Once all desired parameters are updated, click on the **Apply** button to apply new value(s) to the modified parameter(s):

- The **OMS Server and Database Configuration** page refreshes and displays the modified value(s).
- To retain the original value, click the **Reset** button**.** The new value(s) from the text entry box(es) will be reset to the current value(s).

15.10.3 OM Configuration Submenu Page – Media

The **Media** submenu Media Configuration page option (Figure 15.10-4) provides the full-capability Operator the ability to check and modify media parameters.

Media parameters are specific to each kind of distribution medium and affect such things as limit checking against standard media capacity (e.g., minimum request size and maximum request size) and the partitioning of requests (e.g., partition size). The parameters are dynamically loaded from the OMS database into the configuration pages on the OM GUI. If a configuration parameter is added to the database, it is subsequently displayed on the OM GUI when the applicable configuration page is requested. If a configuration parameter is deleted from the database, it is no longer displayed on the OM GUI. Consequently, the configuration parameters displayed on the OM GUI are variables.

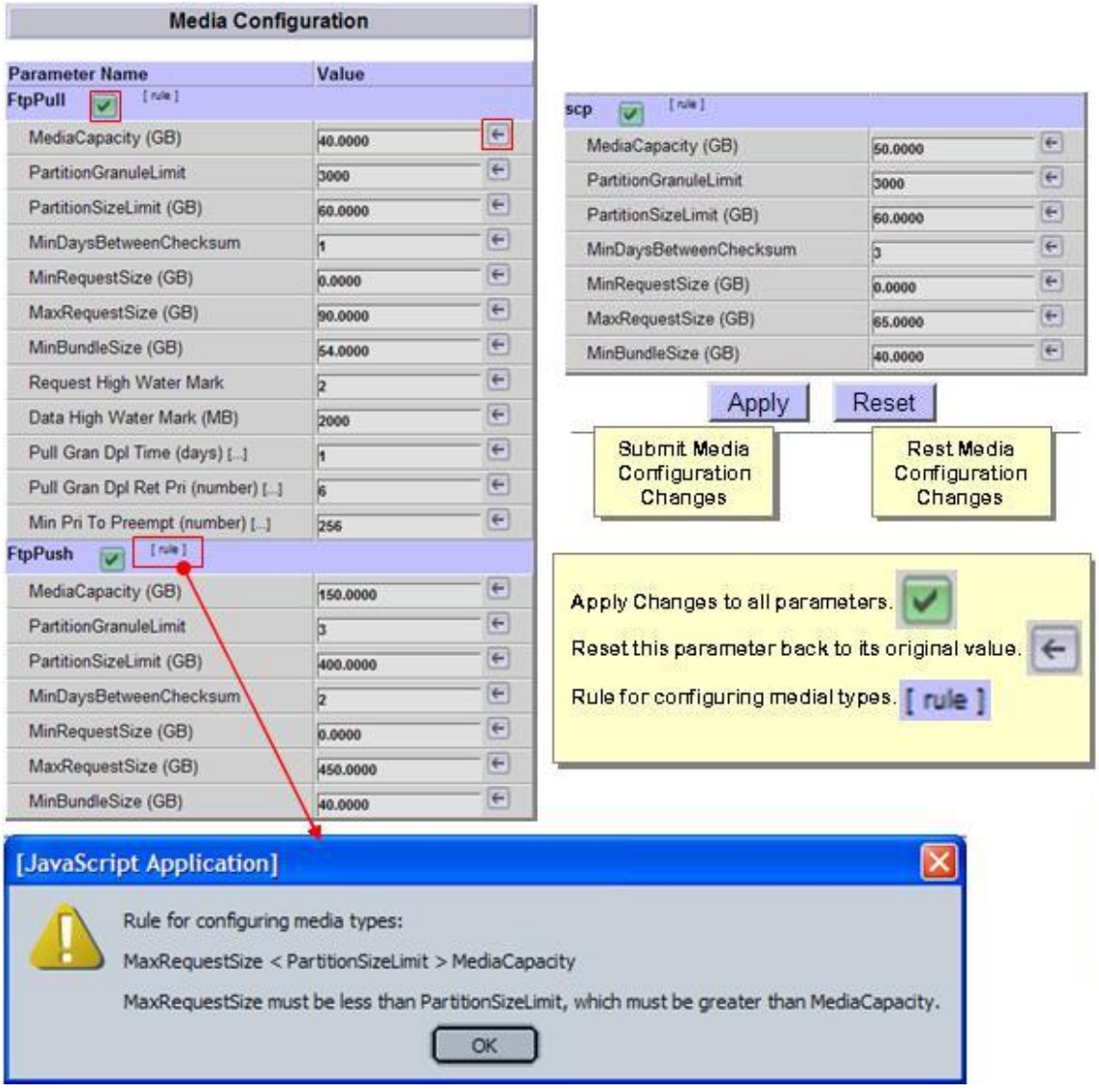


Figure 15.10-4. Media Configuration Page

15.10.3.1 Checking/Modifying Assigned Values of Media Parameters

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **Media** submenu option to display its page (Figure 15.10-4).

NOTE: OMS configuration parameters are dynamically loaded from the OMS database into the configuration pages on the **OM GUI**. If a configuration parameter is added to the database, it is subsequently displayed on the **OM GUI** when the applicable configuration page is requested. If a configuration parameter is deleted from the database, it is no longer displayed on the **OM GUI**. Consequently, the configuration parameters displayed on the **OM GUI** are variable.

3 Observe information displayed on the **Media Configuration** page.

- The **Media Configuration** page has the following columns:
  - **Parameter Name.**
  - **Value.**
- Each of the parameters applies to the following distribution media:
  - **FtpPull.**
  - **FtpPush.**
  - **scp.**
- The rows in the table indicate the current assigned values to the following types of parameters for each type of distribution medium:
  - **PartitionGranuleLimit** – is the maximum number of granules that may be partitioned for the type of medium**.**
  - **PartitionSizeLimit (GB)** – should be the size (in GB) at which point partitioning of a request can occur**.**
  - **MinDaysBetweenChecksum** – the number of days, post-verification of checksum, as defined by Operator, in which the checksum process is again verified.
  - **MinBundleSize (GB) –** is the minimum number of gigabytes in a bundle for the type of medium.
  - **FtpPull (exclusive):**
    - **Request High Water Mark –** The Request High Watermark [RHWM] is the desired maximum number of requests that may be in the Staging state, or that have completed Staging but are not yet in a terminal state (e.g., Shipped).
    - **Data High Water Mark (MB)** – The Data High Watermark [DHWM] is the maximum volume (in MB) of data in staging or already staged but not yet shipped. If the data volume and number of requests is above the DHWM, it is assumed the media devices have plenty of work to keep them busy.
    - **Pull Gran Dpl Time (days) […] –** The pull granule Data Pool time is the number of days a granule for an FtpPull request would normally remain in the Data Pool.

- **Pull Gran Dpl Ret Pri (number) […] –** The pull granule Data Pool retention priority is the normal retention priority for a granule for an FtpPull request.
- **Min Pri To Preempt (number) […] –** The minimum priority to preempt applies to granules put in the Data Pool for an FtpPull request.

- To manually update (refresh) the data on the screen, click on the **reload** ↻ icon on the **OM GUI** navigation frame.
- The Netscape browser **Edit → Find in Page** menu provides a means of performing a keyword search of the data currently being displayed on the screen.

4 If media parameter value(s) is (are) to be modified, type the **new value(s)** in the text entry box(es) for the relevant parameter(s).

5 After all desired parameters have been updated; select the **Apply** button to submit the media configuration changes.

- Select the **Reset** button to clear the new value(s) from the text entry box(es) and reset the parameter(s) back to its original value(s).
  - The value(s) displayed in the text entry boxes return to the original value(s).

15.10.4 OM Configuration Submenu Page – ODL Metadata Users

Limited-capability Operator is limited to viewing Metadata File Users configuration only. The Operator cannot add, or delete email addresses.

The **ODL Metadata File Users Configuration** page (Figure 15.10-5) allows the full-capability Operator to configure a list of Email addresses that signifies users that need to receive metadata in ODL .met file format.

NOTE: If the list is changed, currently active requests' metadata format will not change. For example, if a user's email address is deleted from the list; active requests issued for that user subsequent to the deletion will still distribute the metadata files in ODL format.

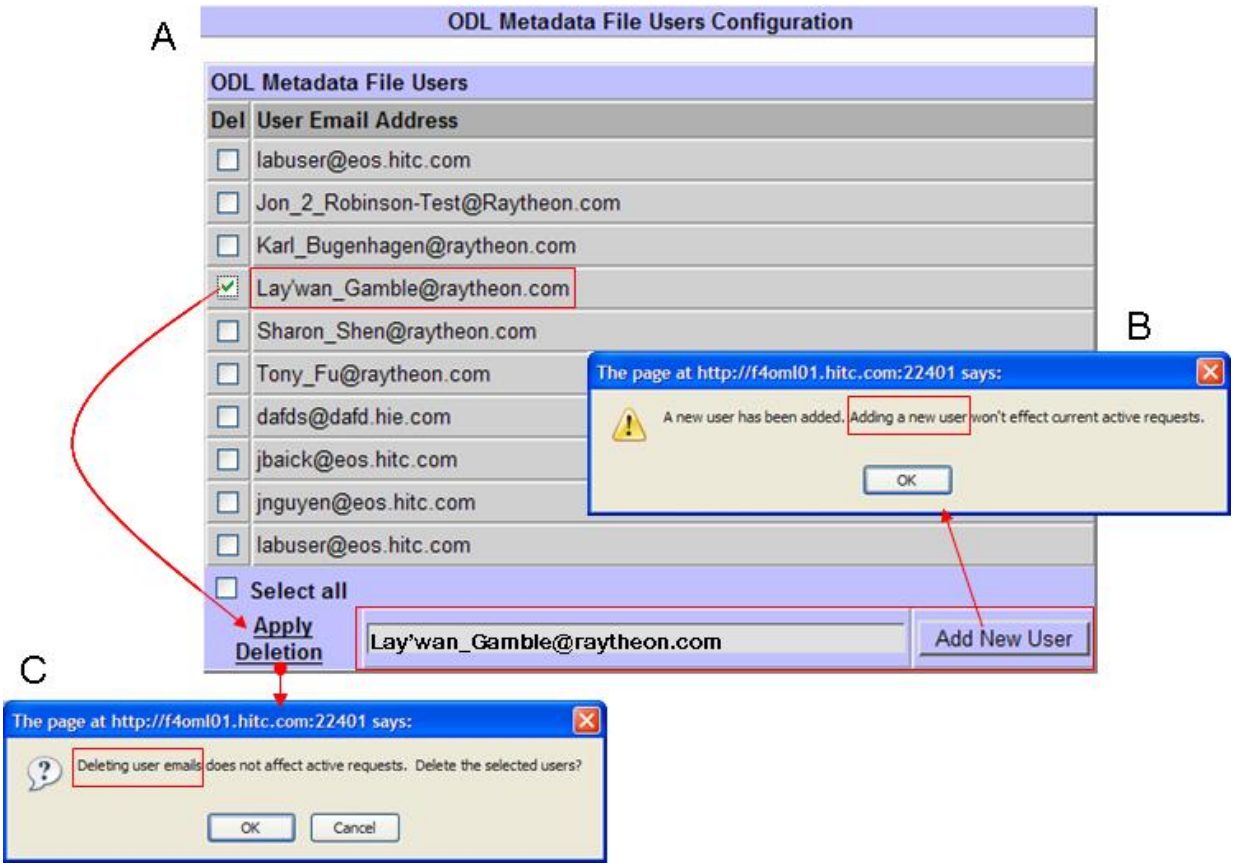


Figure 15.10-5. ODL Metadata File Users Configuration Page

15.10.4.1 Adding/Deleting User Email Address that will receive ODL Metadata File

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **ODL Metadata Users** submenu option to display the **ODL Metadata File Users Configuration** page (Figure 15.10-6, Frame A).

- The **ODL Metadata File Users Configuration** page displays.

Adding User Email Address(es)

3 Enter the new user's **email address** to the **add new user textbox.**

4 Click the **Add New User** button to submit the change to the database**.**

- The confirmation dialog box (Figure 15.10-6, Frame B) confirming the change displays.

5 Click **OK** to acknowledge the change.

Deleting User Email Address(es)

6 To delete User email address(es), click on the **Del** (or Select all) check box next to the user(s) to be deleted.

- A green check mark displays in the box(es).

7 Select the **Apply Deletion** link to submit change(s) to the database.

- The confirmation dialog box (Figure 15.10-6, Frame C) confirming the change displays.

8 Click **OK** acknowledge the deletion.

15.10.5 OM Configuration Submenu Page – Checksum Users

A **checksum** is a computed value associated with a data file, which can be used to verify data validity on files distributed by OMS. This will allow Users to perform data validity tests on the granule files they receive. Limited-capability Operator is limited to viewing Checksum Users configuration only. The Operator cannot add, or delete email addresses.

The **Checksum Users Configuration** page (Figure 15.10-6) allows the full-capability Operator to configure a list of email addresses of users that will receive a checksum in the form of a request. If the email address for a Distribution Notice (DN) contain one of these addresses, the distribution notice will contain checksum values for each of the distributed files.

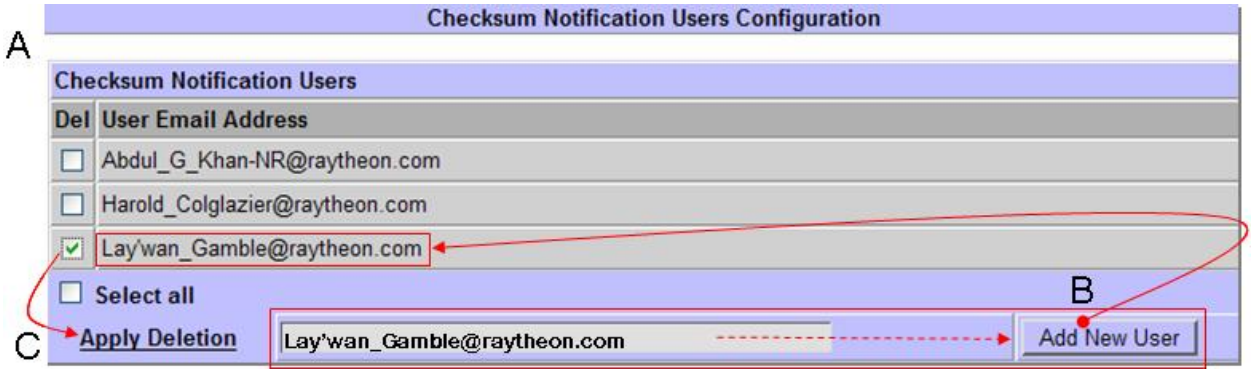


Figure 15.10-6. Checksum Notification Users Configuration Page

15.10.5.1 Adding/Deleting User Email Address that will receive Checksum File

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **Checksum Users** submenu option to display the **Checksum Notification Users Configuration** page (Figure 15.10-6, Frame A).

- The **Checksum Notification Users Configuration** page displays.

Adding User Email Address(es)

3 Enter the new user's **email address** to the **add new user textbox.**

4 Click the **Add New User** button to submit the change to the database**.**

- The new user email address (Figure 15.10-6, Frame B) displays on the page.

Deleting User Email Address(es)

5 To delete User Email Address(es), click on the **Del** (or **Select all**) check box next to the User(s) Email Address(es) to be deleted.

- A green check mark displays in the selected box(es).

6 Select the **Apply Deletion** link (Figure 15.10-6, Frame C) to make change(s) and remove the User Email Address(es).

15.10.6 OM Configuration Submenu Page – External Processing

Limited-capability Operator is limited to only viewing External Processing Configuration. The Operator cannot edit, add, or delete destinations. This page allows the full-capability Operator to define and configure the parameters of an external processing service as follows:

- View the external processing services parameters.
- Delete a selected external processing service that has no pending requests for an external processing service.
- Add a new external processing service.
- Edit existing processing service configuration.

Special configuration parameters that control external processing requests are displayed on the **External Processing Services Policy Configuration** page (Figure 15.10-7, Frame A).

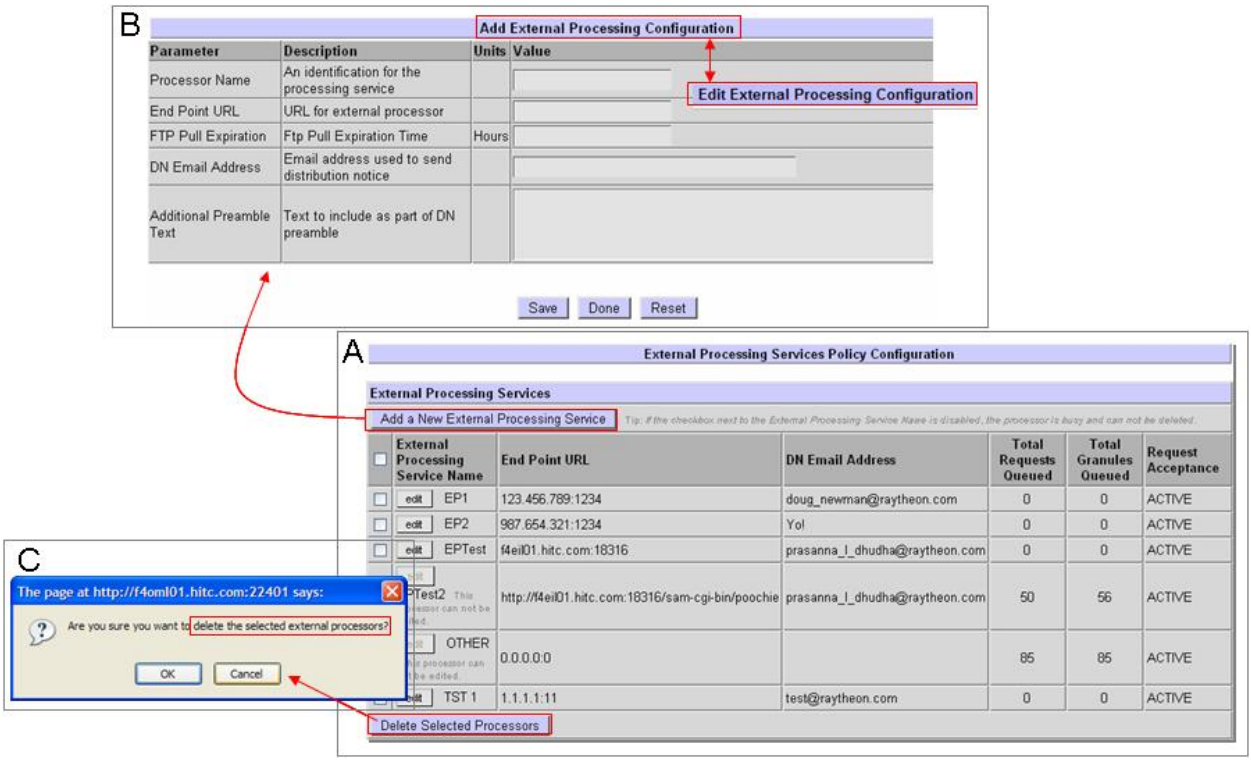


Figure 15.10-7. External Processing Services Policy Configuration Page

The descriptive listing for External Processing Services parameters are described in the following table (Table 15.10-2):

Table 15.10-2. External Processing Services Parameters

PARAMETER	DESCRIPTION
External Processor Service Name	A unique name for the external processing service.
End Point URL	Host URL address for external processing service as configured in the ECS registry.
DN Email Address	DN Email Address used by the external processing service.
Total Requests Queued	Total number of queued requests.
Total Granules Queued	Total number of queued granules.
Request Acceptance	The acceptance of the request.

15.10.6.1 Checking/Modifying External Processing Services Configurations

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **External Processing** submenu option to display its **External Processing Services Policy Configuration** page (Figure 15.10-8, Frame A).

3 Observe the **External Processing Services Policy Configuration** page:

Add New (or Edit) External Processing Service

4 Select the **Add a New External Processing Service** button, (or if editing, select the **edit** button next to the processing service to be edited).

- The **Add External Processing Configuration** page (Figure 15.10-8, Frame B) displays (if editing, the **Edit External Processing Configuration** page displays).

5 Add/Edit required data of the **External Processing Configuration parameters**, as needed.

6 Click **Save** to submit the input.

7 Click **Done** to return to the **External Processing Services Policy Configuration** page

Delete an External Processing Service

8 To delete and external processing service, select the **checkbox** of the **External Processing Service** to be deleted.

9 Click the **Delete Selected Processors** button at bottom of the page.

10 Click **OK** to confirm deletion, at the deletion prompt (Figure 15.10-8, Frame C) dialog box and to delete selected external processors.

15.10.7 OM Configuration Submenu Page – FtpPush/SCP Policy

The **FtpPush/SCP Policy Configuration** page (Figure 15.10-8, Frame A) provides the full-capability Operator the ability to define, configure and fine-tune parameter values of FtpPush/SCP destinations.

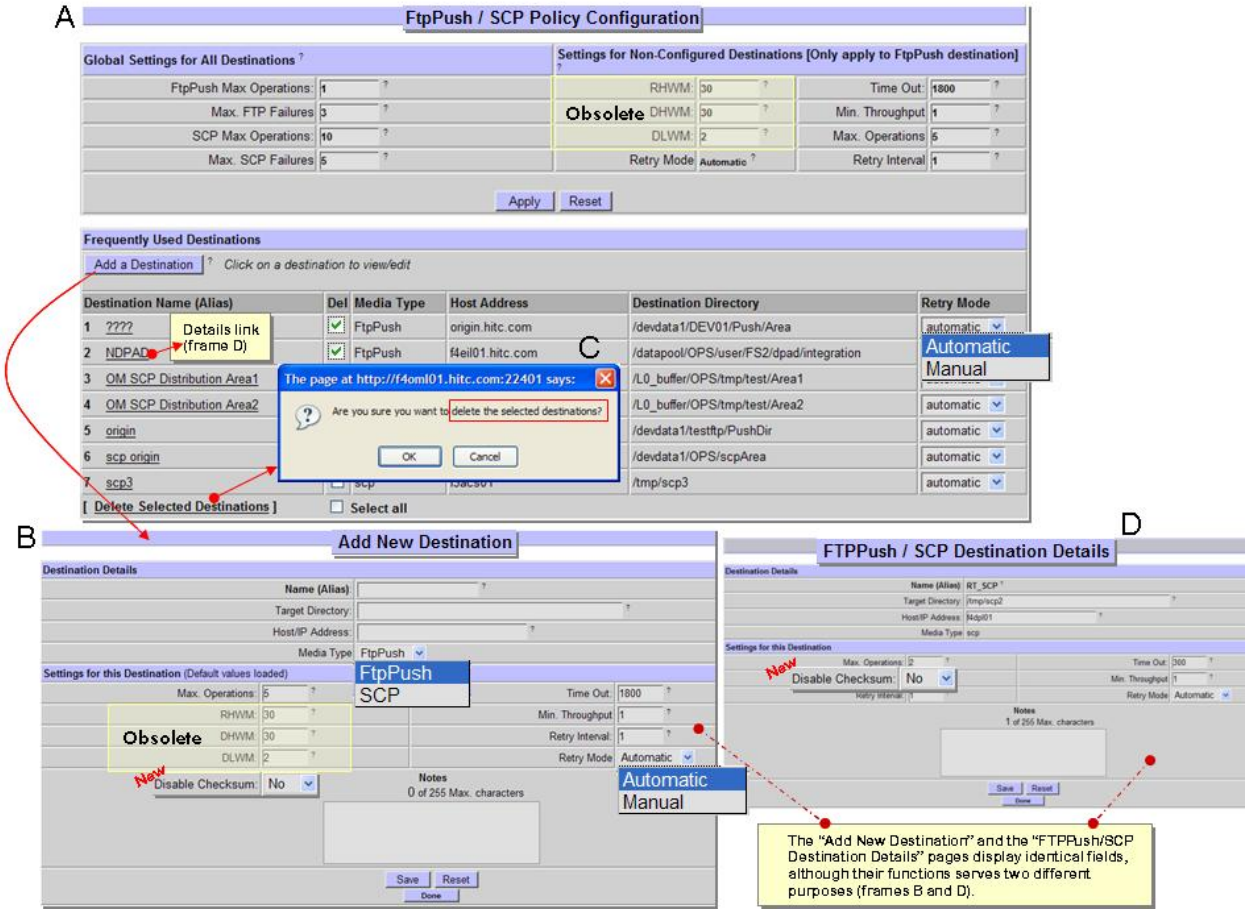


Figure 15.10-8. FtpPush/SCP Policy Configuration Page

Configuration parameters on the **FtpPush/SCP Policy Configuration** page are grouped in the following three working parts (Figure 15.10-9, Frames 1, 2, 3):

1 - **Global Settings for All Destinations** (Figure 15.10-9, Frame 1)**.**

2 - **Non-Configured Destinations [Only apply to FtpPush destinations]** (Figure 15.10-9, Frame 2)**.**

3 - **Frequently Used Destinations** (Figure 15.10-9, Frame 3)**.**

All FtpPush destinations belong to either the Frequently Used group or the Non-Configured (general) group. All FtpPush destinations not specifically defined as **Frequently Used Destinations** (Figure 15.10-9, Frame 3) are considered "non-configured". Non-configured groups use the parameter values in the **Settings for Non-Configured Destinations [Only apply to FtpPush destinations]** section (Figure 15.10-9, Frame 2). All "new" destinations use the Settings for Non-Configured Destinations [Only apply to FtpPush destinations] as their default values until other values are specifically assigned.

Global Settings for All Destinations (Figure 15.10-9, Frame 1) are parameters that apply to all destinations (both frequently used and non-configured), regardless of their individual settings.

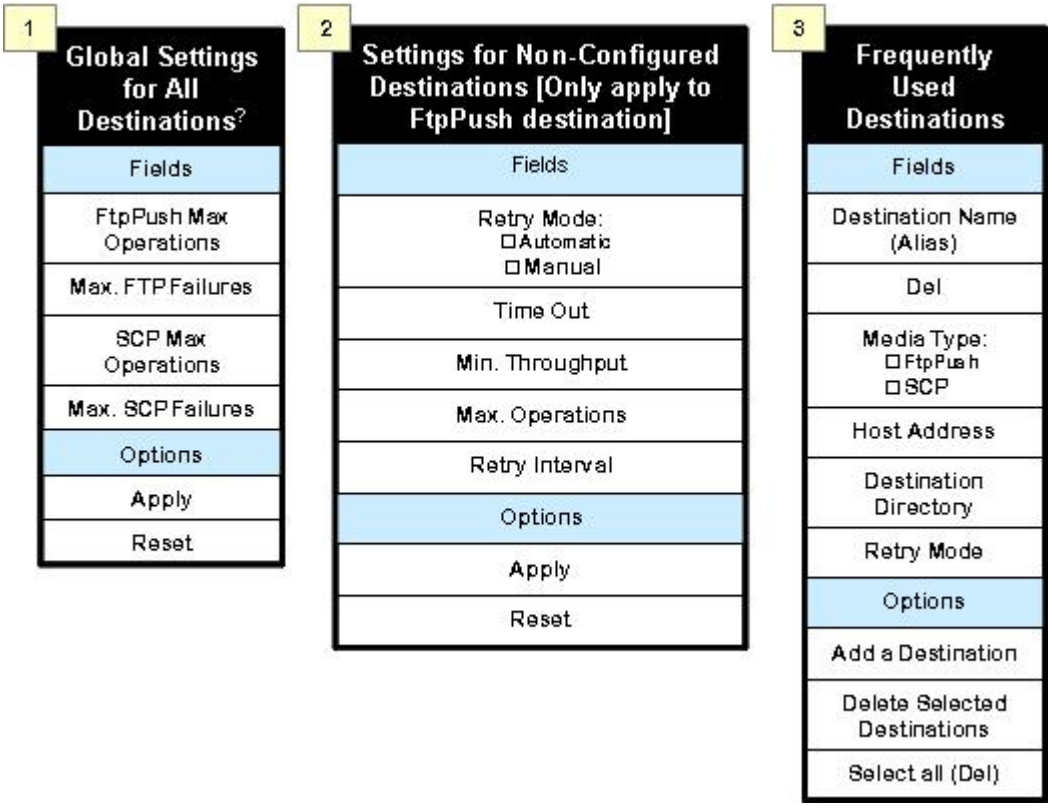


Figure 15.10-9. FtpPush/SCP Policy Configuration Page – Fields and Options

15.10.7.1 Viewing/Modifying FtpPush/SCP Policy Configuration

1 Click **OM Configuration** menu option to expand its submenu.

2 Click **FtpPush/SCP Policy** submenu option to display the **FtpPush/SCP Policy Configuration** page (Figure 15.10-9).

3 Observe/Modify settings displayed on the **FtpPush/SCP Policy Configuration** page:

- If parameter value(s) in either the **Global Settings for All Destinations** section or **Settings for Non-Configured Destinations** section is (are) to be modified, click the Apply button to submit the change.
- Click the **Reset** button to reset values back original entry.
- If the retry mode for a destination in the **Frequently Used Destinations** section should be changed, click on the **option button** (in the **Retry Mode** column) associated with the destination to display a menu of retry modes, then click the **mode**:
  - **Automatic.**
  - **Manual.**
  - Selected mode displays in the **Retry Mode** column.

NOTE: The Retry Mode for the "OTHER" FTPPush Destination group is always "Automatic".

4 Click the **context-sensitive help** icon (?) of the **Retry Interval parameter** label, to review the information and description about the Retry Interval parameter.

- The parameter description dialog box displays (Figure 15.10-10).

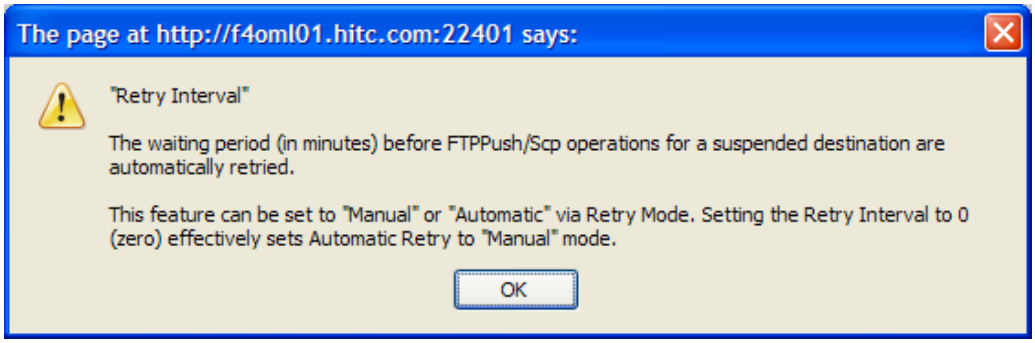


Figure 15.10-10. Context-Sensitive Help for Retry Interval Parameter

5 To review **details of a destination**, click the underscored **Destination Name (Alias)**.

- The **FTPPush/SCP Destination Details** page displays (Figure 15.10-8, Frame D).
  - Observe the **Destination Details** section information of the selected alias.
  - Observe the **Settings for this Destination** section information of the selected alias.
  - To **Disable Checksum**, input **Yes** in the identified textbox.
  - Click the **Done** button to return to the **FTPPush/SCP Policy Configuration** page without saving any possible changes.

6 To **Delete (remove) destination(s)** from the **Frequently Used Destinations** section:

- Click the **Del** checkbox next the destination(s) (or select the **Select all** destinations checkbox to select all listed destinations).
- Click the **Delete Selected Destinations** link near the bottom of the **Frequently Used Destinations** section.

- The **"Are you sure you want to delete the selected destinations?"** dialog box displays (Figure 15.10-8, Frame C).
  - Click **OK** to confirm deletion(s).

NOTE: Removing a destination from the Frequently Used Destinations section does not actually delete the destination; it moves the destination(s) to the non-configured group and erases its individual configuration parameter values.

7 To **Add a new destination** to the **Frequently Used Destinations** section:

- Click the **Add a Destination** button.

- The **Add New Destination** page displays (Figure 15.10-8, Frame B).
  - Enter appropriate **values/data** to the fields/parameters **(**Figure 15.10-9, Frame 1, 2, 3) as follows:

- The **Destination Name (Alias)** is a unique descriptive name which easily identified the destination. For example: **Norford University**
- The **Target Directory** is the directory path of the remote host to which data is to be pushed by ftp. For example**: /sci/data/push**
- The **Host/IP Address** text box is the remote host machine name or IP address where data are to be pushed by ftp. For example: **dsc@nu.edu.**
- The **Max. Operations** value is the maximum number of concurrent FtpPush operations for a particular destination (exclusive of but subject to the global Max Operations). For example: **2.**
- The **Time Out** (extra time allotment (in minutes) is applied to the expected throughput; such expected throughput equals minimum throughput plus timeout. For example: **60.**
- The **Min. Throughput** value **(**megabytes per second) represents the minimum data throughput (in MB/sec) for a particular destination. For example: **100.**

- The **Retry Interval** value (in minutes) represents the waiting period before FtpPush operations for a suspended destination are automatically retried. For example: **60.**
- The **Notes** is general information about the destination (e.g., the justification for adding the new destination, etc.)
- Use the listboxes to select the available options for **Media Type** and **Retry Mode**.
- Click the **Save** button to submit the new destination and to **refresh the FTP Push/SCP Policy Configuration** page.
- The **new destination** displays on the FTP Push/SCP Policy Configuration page.

15.10.8 OM Configuration Submenu Page – DataAccess Processing

The **DataAccess Processing Configuration** page (Figure 15.10-11) provides the full-capability Operator the ability to define, configure and fine-tune parameter values of DataAccess services.

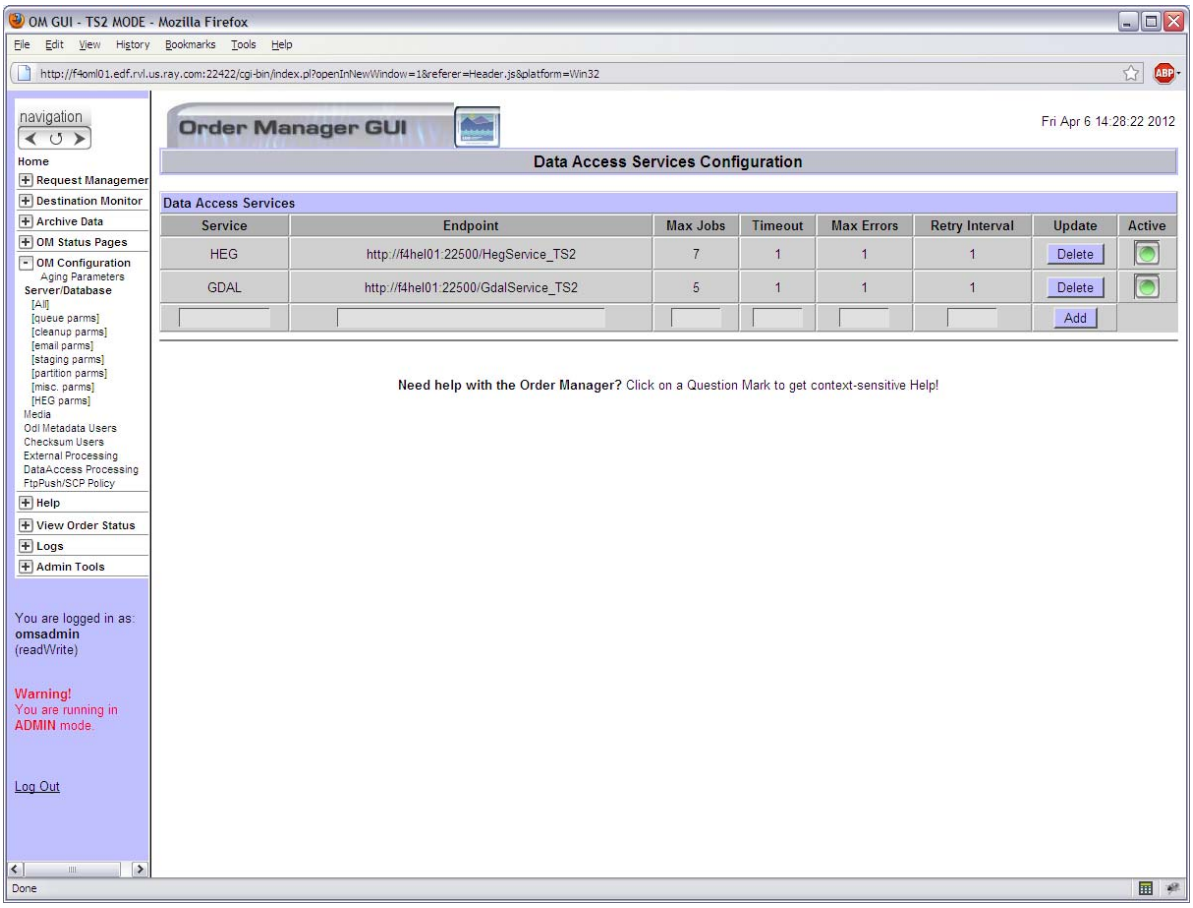


Figure 15.10-11. Data Access Services Configuration

Configuration parameters on the **Data Access Services Configuration** page are grouped by service (Figure 15.10-10).

To add a new service:

- Enter in the service name into the Service box. Examples include HEG, GDAL, etc.
- Enter the endpoint URL of the service that is being added into the box under the column labeled Endpoint.
- To set the maximum jobs allowed, enter in a value to the box under the column labeled Max Jobs.
- To set the timeout for communications between the configured service and OMS enter in a value (seconds) under the column labeled Timeout.
- To set the number of times to retry requests sent to the service, enter in a value under the column labeled Retry Interval.
- To finish, select the Add button on the far right side of the row.

In order to edit the values for service that is already configured, first delete the service then add a new service using the steps above using the desired configuration values.

15.11 OM GUI – Help

There are several ways to get access to help in using the **OM GUI**:

- **HelpOnDemand** – features context-sensitive help for each page, particularly for controls or parameters that may not be entirely self-descriptive. Depicted by a question mark (?) located next to a button or text field on an **OM GUI** page, whenever clicked, a dialog box (Figure 15.11-1, Frame B) opens that describes the item in question.
- **Help** – features help on various topics covering usage of the Order Manager GUI. The **Help** submenu option is access from the **OM GUI** menu home page. (Figure 15.11-1, Frame A) to be displayed.

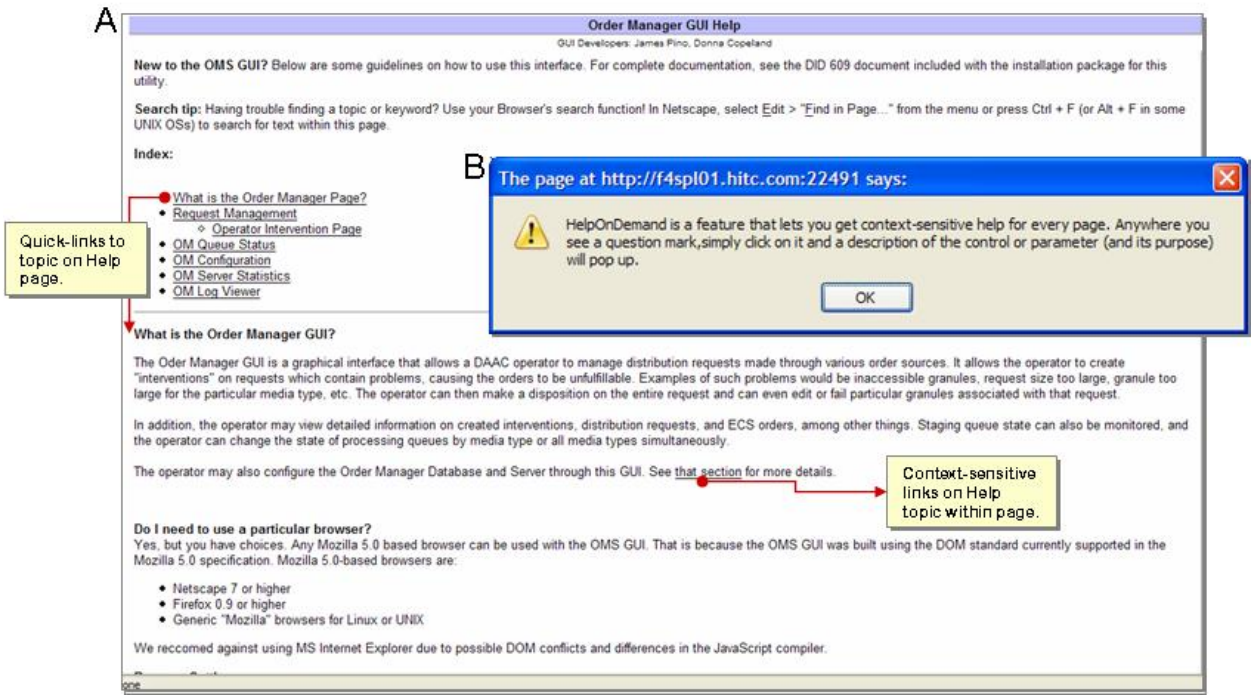


Figure 15.11-1. Help Page (A) and HelpOnDemand Example (B)

15.11.1 Help Submenu Page – About HelpOnDemand…

The **About HelpOnDemand…** allow Operator to get context-sensitive help on every OM GUI page. Signified by a question mark (?), the Operator simply clicks the question mark to get descriptive context of the control or parameter in a pop-up window (Figure 15.11-1, Frame B).

15.11.2 Help Submenu Page – Help

The Order Manager GUI **Help** (Figure 15.11-1, Frame A) submenu feature provides Operator with several guidelines on how to use the OMS GUI. Complete documentation can be found in the DID 609 document which was included with the installation package for the OMS utility.

The submenu features active search function using the current browser (i.e., using Netscape, select Edit →"Find in Page..." from the menu or press Ctrl + F (or Alt + F in some UNIX OSs from within the OM GUI page).

The Help submenu (Figure 15.11-1, Figure A) hypertext-index features the following topics:

- **What is the Order Manager Page?**
- **Request Management**
  - Operator Intervention Page
- **OM Queue Status**
- **OM Configuration**
- **OM Server Statistics**
- **OM Log Viewer**

15.12 OM GUI – View Order Status

The OM GUI Order Status page, Get Order Status (Figure 15.12-1) allows the Operators (full-capacity or limited-capacity) the ability to monitor and/or view the status of orders submitted via the OM GUI.

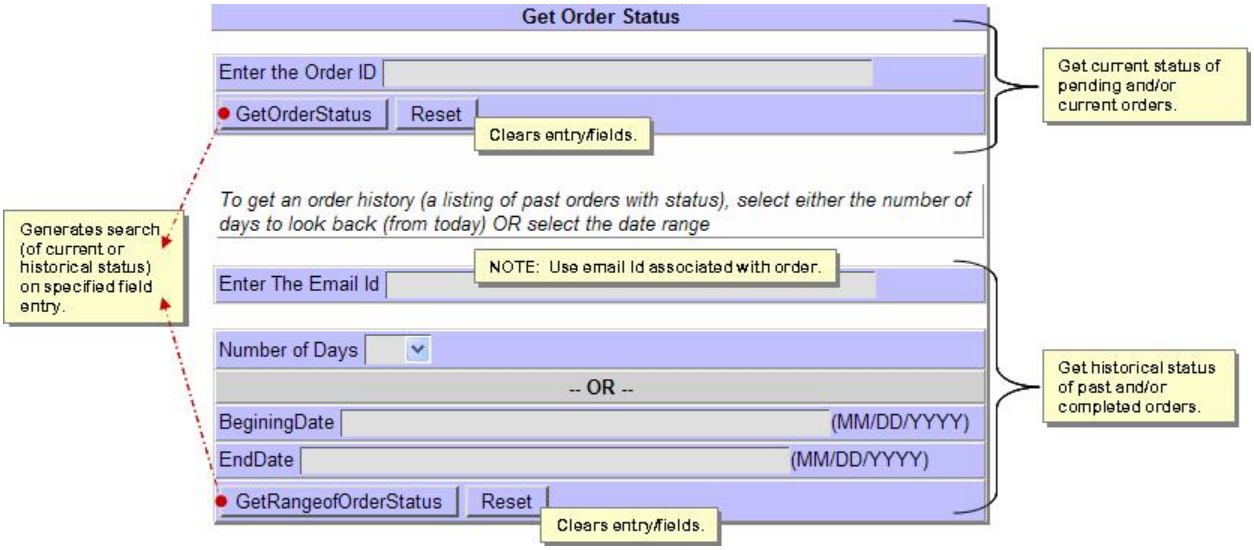


Figure 15.12-1. Get Order Status Page

15.12.1 View Order Status Submenu Page – OM GUI Order Status

The **OM GUI Order Status** provides a visual display of viewing multiple levels of a particular order status. As the Operator search through to the lower levels of the order, the status path is capture as a navigation bar at top of each displayed status page (Figure 15.12-1, Figures A1-A3). The Operator can view the following details at these status levels:

- Order Status (Figure 15.12-1, Frame 1):
- Request Status (Figure 15.12-1, Frame 2)
- Granule Status (Figure 15.12-1, Frame 3).

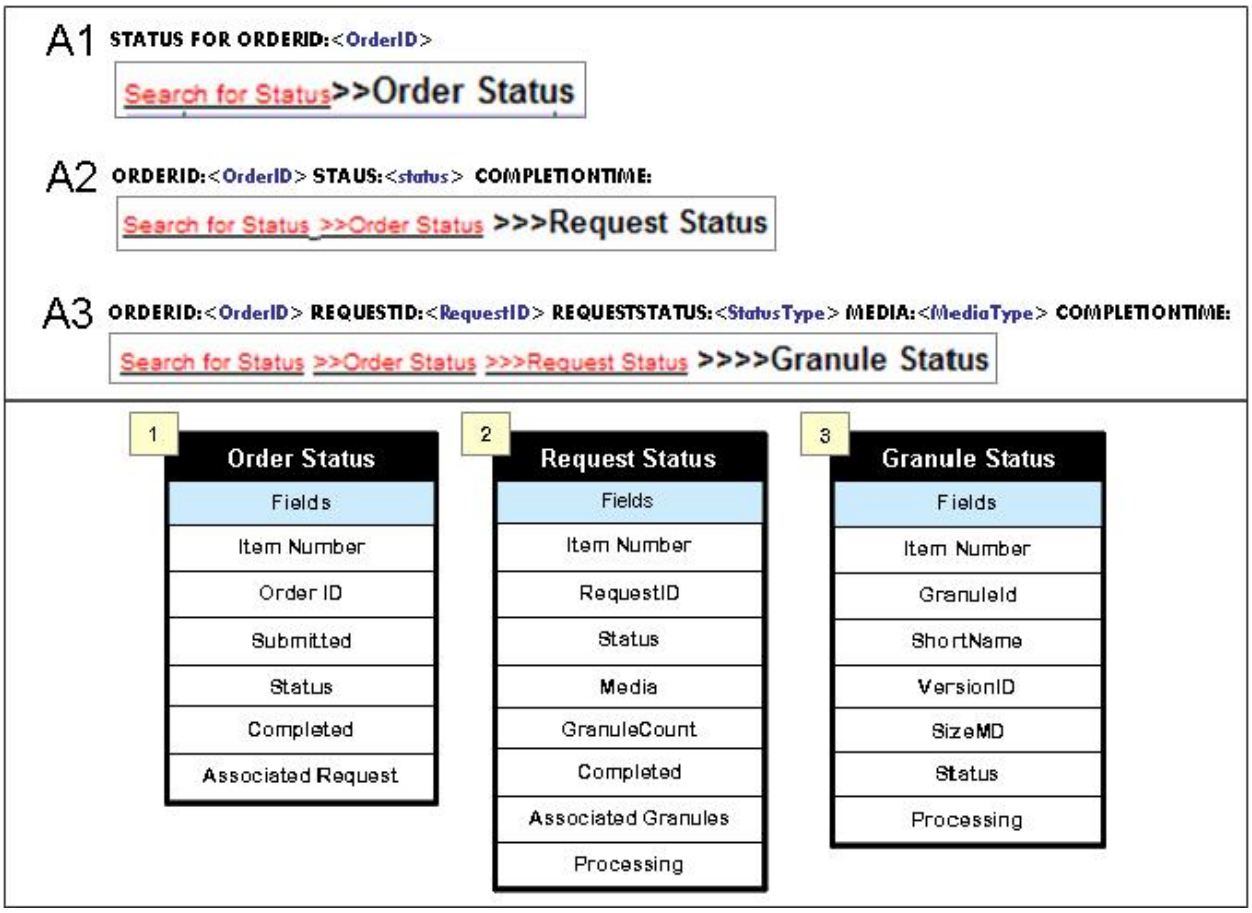


Figure 15.12-2. Get Order Status Pages Navigation Bars and Fields

The OM GUI Order Status submenu options will be examined using to the following checklist in Table 15.12-1:

Table 15.12-1. OM GUI Order Status - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Viewing Distribution Requests Order Status Pages.	(P) 15.12.1.1	

15.12.1.1 Viewing Distribution Requests Order Status Pages

1 Click **View Order Status** menu option to expand its submenu.

2 Click **OM GUI Order Status** submenu option to display its page.

- The **Get Order Status** (Figure 15.12-1) page displays.

3 To retrieve the status of a current order:

- **Enter the Order ID** number (the complete 10-digit order id).
- Click the **GetOrderStatus** button to retrieve the most current status.

- The **STATUS FOR ORDERID:<OrderID>** page displays. (Figure 15.12-3, Frame B1 current)

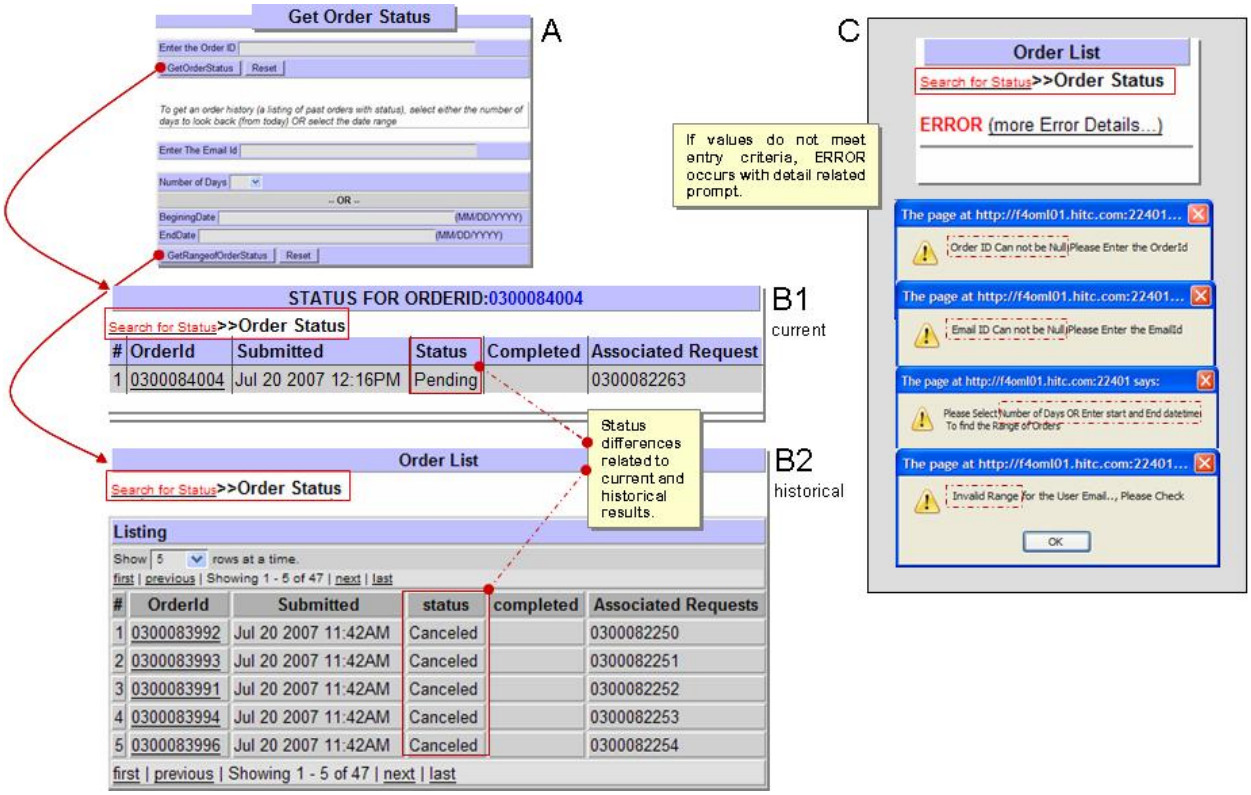


Figure 15.12-3. Order Status Pages (A-B2) and Error Prompts (C)

4 Observe the detailed information listed in Figure 15.12-3, Frame B1 current. The Status fields display the most current activity or status of the order.

5 Using the navigation bar, click the **Search for Status** link to return to the **Get Order Status** page (Figure 15.12-3, Frame A).

6 To retrieve the **status of a historical order**:

- **Enter The Email Id** address (id must be associated with an historical order).
- Select the **Number of Days** from the list box**: 30**
- Or enter a valid range using the **BeginningDate** (MM/DD/YYYY) and **EndDate** (MM/DD/YYYY) text fields.
- Click the **GetRangeofOrderStatus** button to retrieve the most current status.

- The Order List page displays a Listing of related historical status(es). (Figure 15.12-3, Frame B2 historical).

7 Using the navigation bar, click the **Search for Status** link to return to the **Get Order Status** page (Figure 15.12-3, Frame A).

8 To clear the input fields, click the **Reset** button.

NOTE: If the data criteria entered do not match any current or historical orders, an Order List, ERROR (more ERROR Details…) page will display (Figure 15.12-3, Frame C). Click on the **more ERROR Displays…** link to review any one of the following associated error prompts:

- Order ID Can not be Null. Please Enter the Order Id.
- Email ID Can not be Null. Please Enter the Emailid.
- Please Select Number of Days OR Enter start and End datetime. To find the Range of Orders.
- Invalid Range for User Email…, Please Check.

9 To retrieve the **status of a current order details**:

- From the **Get Order Status** page (Figure 15.12-4, Frame A), **Enter the Order ID** number (the complete 10-digit order id). Example: 03000084004 given.
- Click the **GetOrderStatus** button to retrieve the most current **STATUS FOR ORDERID:<OrderID>** page (Figure 15.12-4, Frame B).
- Click the **OrderId <number>** under the OrderId column of the page to display the **Listing** details of the **Request Status** (Figure 15.12-4, Frame C).
- Click the **RequestId <number>** under the **RequestId** column to display the details of the **Granule Status** (Figure 15.12-4, Frame D).

10 Using the navigation bar, click the **Search for Status** link to return to the **Get Order Status** page (Figure 15.12-4, Frame A) and to continue searching other order statuses.

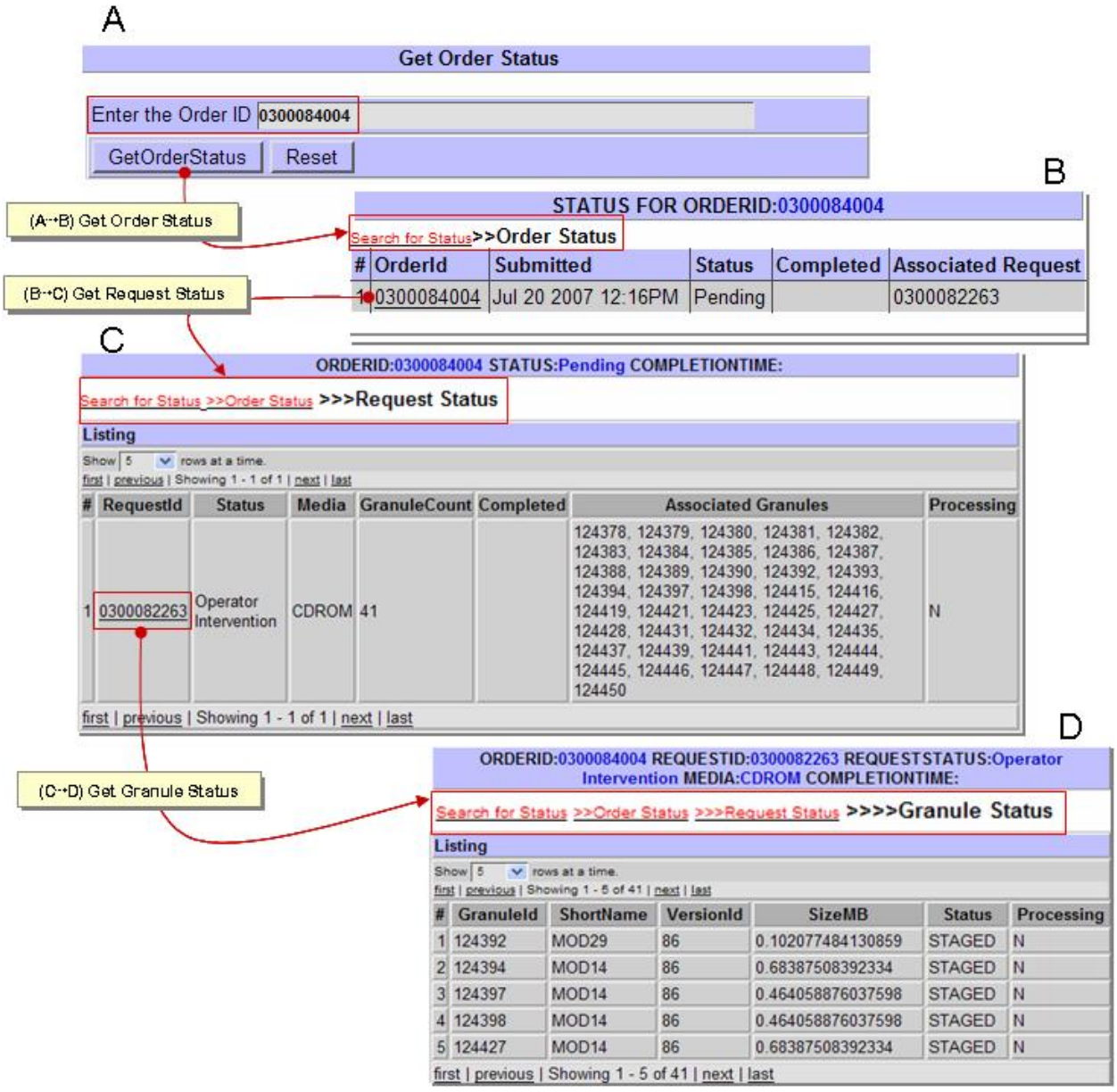


Figure 15.12-4. Order Status Details Pages (A-D)

11 On the OM GUI left pane menu options, click the **Home** link to return to the **Order Manager Home** page.

- The **Order Manager Home** page (Figure 15.4-2) display.

15.13 OM GUI – Logs

The **OM GUI Log** keeps a record of every page that runs and every stored procedure that is called within those pages. It is proven helpful when encountering an error and can aid the System Administrator in fixing the problem.

- The actual log file (EcOmGui.log) is typically located in the /usr/ecs/MODE/CUSTOM/WWW/OMS/cgi-bin/logs directory on the Data Pool Server host (x0dps01) where the OM GUI is installed.

The **OM GUI Log Viewer** page (Figure 15.13-1, Frame A) provides the Operator the capability to view entries captured in the OM GUI log file.

15.13.1 Logs Submenu Page – OM GUI Log Viewer

The **OM GUI Log Viewer** log file is located under the "cgi-bin/logs" install directory of the OM GUI. It is neither the web server log nor SYSLOG, but a log specifically generated by/for the OM GUI. It works similar to the UNIX <tail> command. If preferred, the log file can be viewed with any UNIX editor or visualizing command (e.g., **pg, vi**, **view, more**).

The OM GUI Log Viewer submenu options will be examined using to the following checklist in Table 15.13-1):

Table 15.13-1. OM GUI Log Viewer - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Viewing the OM GUI Log	(P) 15.13.1.1	

15.13.1.1 Viewing the OM GUI Log

1 Click **Logs** menu option to expand its submenu.

2 Click **OM GUI Log Viewer** submenu option to display its page.

- The **OM GUI Log Viewer** (Figure 15.13-1, Frame A) page displays.

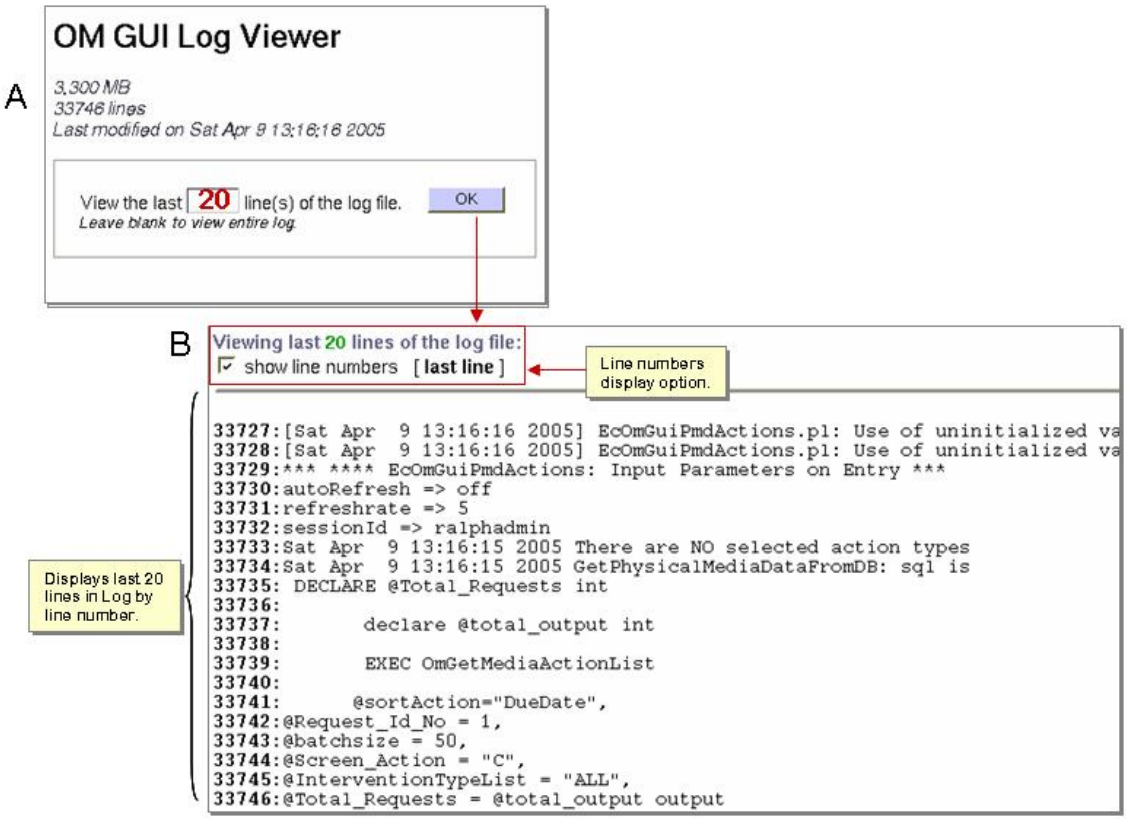


Figure 15.13-1. OM GUI Log Viewer Page

3 To view the log file:

- Enter **20** in the **View the last ___ line(s) of the log file** text box.
- Click **OK.**
  - The OM GUI Log Viewer 20 line "log file" (Figure 15.13-1, Frame B) displays.

4 Observe information displayed in the **Log File** such as**:**

- Size (size of the log file).
- Lines (number of lines in the log file).
- Last Modified (when the log file was last modified).
- Action Taken within the OM GUI.
- The log viewer's functioning is similar to that of the UNIX "tail" command: to see a particular number of lines at the end of the log, specify the number of lines in the **View the last ___ line(s) of the log file** text box.
- Entering 0 (zero) or leaving the text box blank indicates that the entire log file should be displayed.

- It is possible to specify a number that is equal to or greater than the total number of lines in the log file.
- After long periods of usage, the log file may grow to considerable size and it may take some time to load the entire log into the **OM GUI Log Viewer** page.
  - In most cases, viewing the last 100 - 500 lines would be adequate to assess recent activity and would greatly decrease the amount of time to load the file.

5 On the OM GUI left pane menu options, click the **Home** link to return to the **Order Manager Home** page.

- The **Order Manager Home** page (Figure 15.4-2) display.

15.14 OM GUI – Admin Tools

The Admin (Administrator) Tools page controls Operators' profiles and configurations for every field, on every page that is generated within the OMS GUI. This tool is restricted for use by the site Administrator only, as it can substantially change the functionality of data generated within the OMS GUI.

The OM GUI Admin Tools submenu options will be examined using the following checklist in Table 15.14-1:

Table 15.14-1. Admin Tools – Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Setting Permissions for OM GUI Action Pages	(P) 15.14.5.1	
2	Distribution Technician	Setting Operator Profile	(P) 15.14.6.1	
3	Distribution Technician	Preparing Input Files for Use with the OM Configuration CI	(P) 15.14.7.1	
4	Distribution Technician	Starting the OMS Configuration CI	(P) 15.14.7.2	
5	Distribution Technician	Configuring How Long Order-Tracking Infromation is Kept in the OMS Database	(P) 15.14.8.1	
6	Distribution Technician	Getting OMS Configuration CI Help	(P) 15.14.9.1	
7	Distribution Technician	Preparing Input Files for Use with the SCLI	(P) 15.14.10.1	
8	Distribution Technician	Run the OMS SCLI	(P) 15.14.10.2	

15.14.1 Admin Tools Submenu Page – Server/Database Parameters

Reference Section 15.10.2 OM Configuration Submenu Page – Server/Database to check and modify server/database parameters values.

15.14.2 Admin Tools Submenu Page – Media Parameters

Reference Section 15.10.3 OM Configuration Submenu Page – Media to check and modify media parameters values.

15.14.3 Admin Tools Submenu Page – Aging Parameters

Reference Section 15.10.1 OM Configuration Submenu Page – Aging Parameters to configure aging parameters (rules) values.

15.14.4 Admin Tools Submenu Page – FtpPush Policy

Reference Section 15.10.8 OM Configuration Submenu Page – FtpPush/SCP Policy to set permissions for FTP Push Policy Configuration Pages. These Global Settings (for all destinations) includes Non-Configured Destinations and Actions for Frequently Used destinations.

15.14.5 Admin Tools Submenu Page – Action Pages

Provides the Administrator with a set of predefined permissions to set, remove, suspend or resume any/all related actions and/or related configurations on any/all related OM GUI pages.

These predefined set of permissions for the OM GUI action pages are identified in Figure 15.14-1, OM GUI Admin Tools Action (Permissions) Pages.

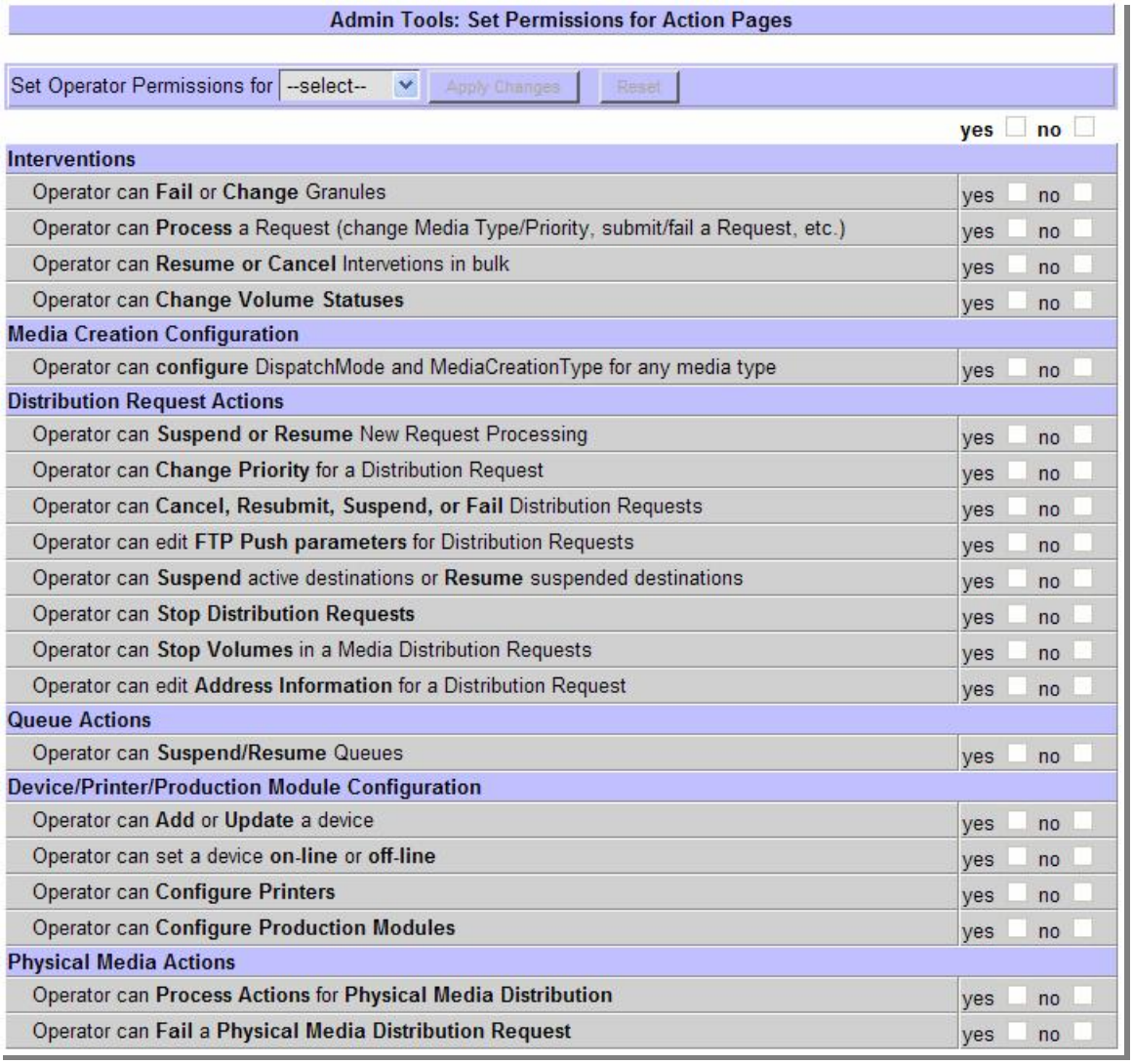


Figure 15.14-1. OM GUI Admin Tools Action (Permissions) Pages

15.14.5.1 Setting Permissions for OM GUI Action Pages

1 Click **Admin Tools** menu option to expand its submenu.

2 Click **Action Pages** submenu option to display its page.

- The **OM GUI Admin Tools Action (Permissions) Pages** page displays.

3 Observe information displayed on the **Action Pages** page.

4 To **Set Operator Permissions for** a User, select the <**Userid**> from the list box:

- Click the appropriate **checkboxes (yes** or **no)** to define the User's permissions.
- Click the **Apply Changes** button (or the **Reset** button to cancel actions and reset to original).

15.14.6 Admin Tools Submenu Page – Profile Management

Provide the Administrator with the ability to manually remove an Operator's profile. The tool can automatically search and remove obsolete profiles and/or remove permission settings of profiles.

15.14.6.1 Setting Operator Profile

1 Click **Admin Tools** menu option to expand its submenu.

2 Click **Profile Management** submenu option to display its page (Figure 15.14-2, OM GUI Admin Tools Profile Management Page).

- The **OM GUI Admin Tools Profile Management** page displays.

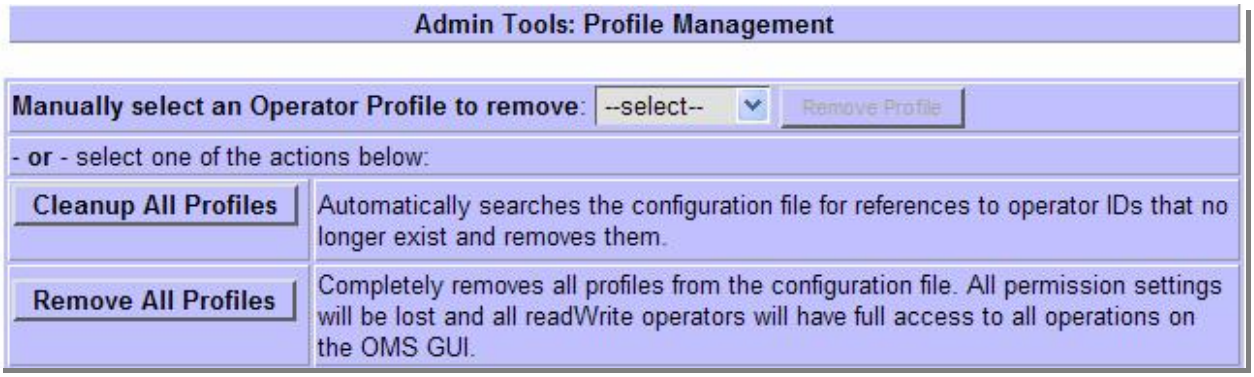


Figure 15.14-2. OM GUI Admin Tools Profile Management Page

3 Observe information displayed on the **Profile Management** page.

4 To **Manually select an Operator Profile to remove:**

- Select the <**Userid**> from the list box.
- Click the **Remove Profile** button.
- The profile is removed.

5 Click the **Cleanup All Profiles** button to automatically remove obsolete Operator IDs.

6 Click the **Remove All Profiles** button to completely remove all profiles from the configuration file, including related permission settings.

7 On the OM GUI left pane menu options, click the **Home** link to return to the **Order Manager Home** page.

- The **Order Manager Home** page (Figure 15.4-2) display.

15.14.7 Science Command Line Interface (SCLI) in OMS

The Science Command Line Interface (OmSCLI) allows the operator to acquire products by sending orders to the Order Manager Server given a operator's file of granule identifiers and a file of media options. The operator can request products by FtpPush, FtpPull, and secure copies specified in the media parameter file. The OmSCLI will not generate Metadata Control Files (MCFs) since that functionality is performed by the ESDT Maintenance GUI.

The OmSCLI is installed on the same host as the Order Manager Server. It includes a wrapper script acquire, a perl module containing database connection functionality, and a C++ -based executable which interfaces with the OrderManager client. It has its own configuration file containing database environment parameters. It is invoked with arguments that are described in the following section.

There are four/five command line parameters and they are used in combination with each other. Table 15.14-2 describes these parameters.

Table 15.14-2. Command Line Parameters of the SCLI Tool

Parameter Name	Description
mode	The mode in which the tool runs (i.e. OPS, TS1)
parameterfile	A file containing all of the information required to acquire and distribute the request submitted.
file	A file that can contain up to 100 granules to be acquired.
tag	Unique request identification, used to track request in system.
decrypt	An optional flag to indicate that the password passed in is encrypted and needs to be decrypted in SCLI.

15.14.7.1 Preparing Input Files for Use with the SCLI

1 Access a terminal window logged into the host where Order Manager is installed x4oml01.

2 Create the Parameter File using **vi** editor commands.

- There are brackets ([]), and braces ({}) around some of the lines and groups
- Brackets indicate optional entries containing content that is subject to change.
- Braces indicate entries that are required but the content is subject to change.

Sample Parameter File:

Example 1: PullMediaParameterFile:

ECSUSERPROFILE = ECSGuest
PRIORITY = NORMAL
DDISTMEDIATYPE = FtpPull
DDISTMEDIAFMT = FILEFORMAT
USERSTRING = JoeUser_PULL
DDISTNOTIFYTYPE = MAIL

NOTIFY = email@raytheon.com

Example 2: PushMediaParameterFile.input is:
ECSUSERPROFILE = labuser
FTPUSER = labuser
FTPPASSWORD = Feb7A02
FTPHOST = f4eil01
FTPPUSHDEST = /usr/ecs/formal/<MODE>/CUSTOM/scli/PushArea
PRIORITY = HIGH
DDISTMEDIATYPE = FtpPush
DDISTMEDIAFMT = FILEFORMAT
USERSTRING = TomRoegner_Push
DDISTNOTIFYTYPE = MAIL
NOTIFY = user@eos.hitc.com

Example 3: SCPMediaParameterFile.input is:
PRIORITY=VHIGH
DDISTMEDIATYPE=scp
DDISTNOTIFYTYPE=MAIL
DDISTMEDIAFMT=FILEFORMAT
ECSUSERPROFILE=labuser
FTPUSER=labuser
FTPHOST=f4spl01
USERSTRING=scp_Request_by_User_XXXX
FTPPUSHDEST=/home/labuser/tomr/scp
FTPPASSWORD=<password>
NOTIFY=email@raytheon.com

3 **Type** ZZ

- **vi** exits and the edited file is saved.
  - To exit **vi** without saving the new entries in the file type **:q!**
  - Press **Return/Enter**.
- The UNIX command line prompt is displayed.

4 Create the Granule File using vi editor commands. This file can contain up to 100 granules and should adhere to the following format:

- **The ListOfGranules can be include one granule per line in the file. There are two types:**

  1) geoid - a specific granule <data type>:<ShortName>.<VersionId>:<dbID>

  2) LocalGranuleId - looks like the file name of the data before it was ingested in ECS

Sample Granule File:

SC:MOD02HKM.002:2020633145 (a geoID)

MYD29P1N.A2007266.h10v08.005.2007267221028.hdf (a Local Granule Id)

Etc….

5 **Type** ZZ

- **vi** exits and the edited file is saved.
  - To exit **vi** without saving the new entries in the file type **:q!**
  - Press **Return/Enter**.

15.14.7.2 Run the OMS SCLI

---

1 Access a terminal window logged in a host.

2 Type **cd /usr/ecs/*MODE*/CUSTOM/utilities** then press **Return/Enter**.

- The ***MODE*** will most likely be one of the following operating modes:
  - OPS
  - TS1
  - TS2

3 Enter the following command:

acquire <mode> -p <parameterfile> -f <file>-t <tag> [-decrypt]

- The –p parameter file is the file containingmedia options.
- The –f <file> is the file containing the granule identifiers.
- The –t <tag> is the unique request identification to the Order Manager.

Note: For each LocalGranuleId listed in the file, the OmSCLI will invoke a search for that LocalGranuleId in the AIM inventory database (via a EcOmDb stored procedure) and return all rows in a format that is a geoID.

15.15 OMS Database Cleanup Guidelines

From the perspective of system performance it is very important to clean up the OMS database on a regular basis. Not cleaning up the database tables would have the following effects:

- Overall order-processing throughput would slow down due to the deterioration of OMS response times.
- Response time of the OMS GUI would increase.

If order information must be kept for extended periods of time (e.g., for reporting purposes), it is recommended that on a regular basis information be copied (via scripts or Sybase replication) from the operational tables to a separate set of historical tables. The OMS database itself is an operational database and is not suited for long-term retention of order information.

To assist with database cleanup, the OMS provides the following two levels of cleanup:

- Removal of completed OMS actions, interventions and notifications.
- Removal of order-tracking information for completed orders.
  - Order-tracking information for completed orders includes order, request, and granule information.

15.15.1 Removal of Completed OMS Actions, Interventions and Notifications

The removal of completed OMS actions, interventions and notifications is configured by setting the values of the following parameters on the **OM GUI**:

- **Delete Complete Interventions After**.
- **Delete Complete Actions After.**

Except for special circumstances when the DAAC needs to retain information for subsequent analysis by system support staff or DAAC performance engineers, the parameter settings should be as short as possible (e.g., two hours).

For detailed instructions on how to modify OMS parameter values using the **OM GUI** refer to the procedure for **Checking/Modifying Values Assigned to OMS Server or Database Parameters** (previous section of this lesson).

15.15.2 Removal of Order-Tracking Information for Completed Orders

The removal of order-tracking information for completed orders is configured using the **OMS GUI. There are two parameters that will cause the OMS archive scripts to move data from the OMS tables to the OMS Archive tables. Archive Reqeust Age is the maximum number of days that a completed requests will stay in the regular OMS table before being moved to the archive tables. Archive Incomplete Request Age is the maximum number of days a request will be left in the regular OMS table even if it was not appropriately completed.**

15.15.3 Fault Handling

Failure events are classified according to the following three severity levels:

- Fatal error.
  - Returned when a request cannot be serviced, even with operator intervention.
  - For example, if a request is made to distribute data via ftp to a non-existent host, the request is failed with a fatal error.
- Retry error.
  - Potentially recoverable error.
  - Normally, a retry error would be returned to the client only when the server cannot recover from the error automatically.
  - A retry error may require operator assistance during recovery.
- Warning.
  - Provided when operations can proceed without interruption, but an unexpected circumstance was detected.

  - For example, if a client requests a file to be removed but the file does not exist, there is no error per se; however, a warning is generated to caution the client that the file to be removed did not exist in the first place.

Transient errors (such as network errors) are always retry errors.

- In general, clients and servers that experience transient retry errors first attempt to recover by retrying the operation automatically.
- One special case of this is "rebinding," which refers to the process by which a client automatically attempts to re-establish communication with a server in the event communication is disrupted.
  - The disruption may be caused by transient network failure, or by the server crashing or being brought down.
  - In any case, the client automatically attempts to reconnect to the server for a configurable period of time on a client-by-client basis.

System processes encountering an error or receiving an error from a server request can either pass the error back to a higher-level client or present it to the operator for operator intervention.

15.16 Troubleshooting a Order Manager GUI Failure

Table 15.16-1 contains the activity checklist for Troubleshooting the Order Manager. Actions to be taken in response to some common OM GUI problems are described in Table 15.16-2 Order Manager GUI User Messages.

If the problem cannot be identified and fixed without help within a reasonable period of time, the appropriate response is to call the help desk and submit a trouble ticket in accordance with site Problem Management policy. Table 15.16-1 shows the activity checklist for Troubleshooting Order Manager.

Table 15.16-1. Troubleshooting Order Manager - Activity Checklist

Order	Role	Task	Section	Complete?
1	Distribution Technician	Checking Log Files	(P) 15.16.1.1	
2	Distribution Technician	Checking Database Connections	(P) 15.16.2.1	
3	Distribution Technician	Determining the Permissions for Creating an FTP Pull Subdirectory	(P) 15.16.4.1	
4	Distribution Technician	Troubleshooting a HEG Failure	(P) 15.16.5.1	
5	Distribution Technician	Checking HEG Server Log Files	(P) 15.16.6.1	
6	Distribution Technician	Checking Files in the HEG Tempfiles Directory	(P) 15.16.7.1	

Table 15.16-2. Order Manager GUI User Messages (1 of 13)

Message Text	Impact	Cause and Corrective Action
!!! ERROR: It appears that all granules have been failed. You can not submit or partition a request with all FAILED granules. This request should be failed. To do this, Select "Fail Request" from the Request Disposition section and try again. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page. If all the granules in a request have been failed, the request can no longer be submitted or partitioned. The only corrective action is to fail the entire request or place it on hold. 1. Click on the **OK** button to dismiss the dialog box. 2. Either fail the entire request or place it on hold. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
All of the granules for this request have been failed. You can not submit or partition the request because the submission will fail and another operator intervention will be created for it. This request should be failed. Return to the previous page and select "Fail Request" under the Request Disposition section.	Intervention cannot be resolved.	The operator failed all the granules for a particular request and tried to submit or partition it. Since there are no granules, there is nothing to submit or partition. The entire request should be failed. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** (**Intervention for Request *x***) page. 2. Fail the entire request. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (2 of 13)

Message Text	Impact	Cause and Corrective Action
An error has occurred with the page you are requesting. Error Message: <message>	Various.	The message appears on the **Error** page and is displayed in response to a stored procedure or system fault. Although the previously attempted operation can be retried, in most cases the error is a fatal one (e.g., a binary was installed incorrectly or is missing). 1. If feasible, retry the operation that resulted in the error message. 2. If repeated attempts to perform the operation fail, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
An error message was not available. Please contact the system administrator for further assistance.	Various.	The message appears on the **Error** page when there is a problem with the Perl code or a stored procedure that did not give a specific reason as to why it failed. There is no operator-level corrective action to take in this case. Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
An undefined error occurred executing the stored procedure	Various.	The problem is an internal error due to a bad database connection, incorrect stored procedure arguments, or a system fault. It is not due to operator error. The first possible solution is to resubmit the changes for the Intervention (essentially retrying the database connection). 1. Resubmit the changes for the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).] 2. If resubmitting the changes for the intervention is not successful, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
Error executing SweeperStart: <message>	Server Statistics or Queue Status page does not display correct information, or the affected pages do not display at all.	The message appears either on the **Error** page, **OM Queue Status** page, or **OM Server Statistics** page. **SweeperStart** is a shell script that runs the Sweeper binary, which tells the system whether or not certain servers are up and running. If either the shell script or the Sweeper binary is corrupt, missing, not executable, or has the wrong permissions, the error message is displayed. The **OM GUI** must be reinstalled or the binary or shell script must be manually copied to its proper location and given the proper permissions. Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-2. Order Manager GUI User Messages (3 of 13)

Message Text	Impact	Cause and Corrective Action
Error: <VALUE> is an invalid number for this parameter." [Displayed in a dialog box]	A parameter value does not get modified.	The error message can appear on the **Media Configuration** page or **Server Configuration** page. It is probably the result of trying to change a parameter value (which requires a number) to a value that either contains non-numeric characters, is outside the valid range for the parameter, or contains a decimal point when the value should be an integer. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter a valid value for the parameter. [For detailed instructions refer to the procedure for **Checking/Modifying OM Configuration Parameters** (previous section of this lesson).]
Error: A worker must be assigned to this intervention before any actions may be taken. [Displayed in a dialog box]	Actions cannot be taken on an intervention.	The message appears on the **Open Intervention Detail** page if the operator attempted to take an action on an open intervention before assigning a name in the **Worked by:** text box. (No worker name is required to view the intervention without taking any action.) A real name or a user ID must be entered in the field. Numbers and spaces are allowed. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter a valid name in the **Worked by:** text entry box on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: An [sic] database error was encountered: deadlock could not be resolved after <NUMBER> tries	An action requiring a call to a stored procedure or access to a database table is not taken.	The message appears on the **Error** page after a stored procedure could not be executed due to a database (or table) deadlock. The command is retried a number of times (depending on the DEADLOCK_RETRIES parameter in the configuration file) before the message is displayed. Retrying later may be successful. However, it may be that the OMS database is experiencing a heavy load or is corrupt in some way. If the problem cannot be quickly resolved, there might be a performance issue or the stored procedure may contain an error. 1. At a later time retry the operation that resulted in the error message. 2. If the operation fails again, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-2. Order Manager GUI User Messages (4 of 13)

Message Text	Impact	Cause and Corrective Action
ERROR: Can't open session file: <message>	Requested page does not display.	This error message can occur on any page. The session file is like a cookie – it can expire or become corrupt. For this reason, bookmarks should not be saved for specific **OM GUI** pages. If a session is more than five (5) days old, and the GUI has not been restarted in that amount of time, the error is certain to occur. 1. Reload the GUI by starting it from a bookmark or manually typing the base URL (without a session ID). [For detailed instructions refer to the procedure for **Launching the Order Manager GUI** (previous section of this lesson).]
ERROR: Invalid name entered into Worked by field. You must enter a name into this field before proceeding. [Displayed in a dialog box]	Actions cannot be taken on an intervention.	The message appears on the **Open Intervention Detail** page when the operator attempts to enter non-alphanumeric characters, nothing, or just white space into the **Worked by:** field. A real name or a user ID must be entered in the field. Numbers and spaces are allowed. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter a valid name in the **Worked by:** text entry box on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: It appears that all granules have been failed. You can not submit or partition a request with all FAILED granules. This request should be failed. To do this, Select "Fail Request" from the Request Disposition section and try again. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page. If all the granules in a request have been failed, the request can no longer be submitted or partitioned. The only corrective action is to fail the entire request or place it on hold. 1. Click on the **OK** button to dismiss the dialog box. 2. Either fail the entire request or place it on hold. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
Error: Not that many rows or invalid row number. [Displayed in a dialog box]	The Operator is unable to navigate through rows (on various pages).	An invalid row number was entered in the navigation box at the top of a listing. The error can appear on any page with the navigation feature. 1. Click on the **OK** button to dismiss the dialog box. 2. In the navigation box type a row number within the range of rows displayed on the GUI screen. 3. Click on the **ok** button.

Table 15.16-2. Order Manager GUI User Messages (5 of 13)

Message Text	Impact	Cause and Corrective Action
ERROR: Partition days must be an integer. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page if the operator was partitioning the request and entered a fractional number (or some garbage characters) in the **days** field. The number of days should be entered as a whole number only. 1. Click on the **OK** button to dismiss the dialog box. 2. Verify that the **Partition (current size is *x* MB)** button has been selected (click on the button if necessary). 3. Type the appropriate value (as a whole number) in the **days** text box to specify the time period. 4. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: Partition hours must be an integer. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page if the operator was partitioning the request and entered a fractional number (or some garbage characters) in the **hours** field. The number of hours should be entered as a whole number only. 1. Click on the **OK** button to dismiss the dialog box. 2. Verify that the **Partition (current size is *x* MB)** box has been selected (click on the box if necessary). 3. Type the appropriate value (as a whole number) in the **hours** text box to specify the time period. 4. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (6 of 13)

Message Text	Impact	Cause and Corrective Action
ERROR: You can not change the media type and update the FTP Push parameters. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page, probably due to inadvertently checking the **Update FtpPush Parameters** box. Either the button should be un-checked or the distribution medium should be changed the proper way. 1. Click on the **OK** button to dismiss the dialog box. 2. If the **Update FtpPush Parameters** box was inadvertently checked, click on the box to uncheck it. 3. If the **Update FtpPush Parameters** box was checked on purpose, verify that the **Change Media to:** box is not checked. (Click on it if necessary). 4. If the **Update FtpPush Parameters** box was checked on purpose, verify that the **New Medium** option button is displaying "**- -**". [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 5. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (7 of 13)

Message Text	Impact	Cause and Corrective Action
ERROR: You can not change the media type from <MEDIA> to <MEDIA> - the media types are the same. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page if the operator tried to change the media type to whatever it already is. If the media type should not be changed, the **New Medium** option button should be set to "**- -**". 1. Click on the **OK** button to dismiss the dialog box. 2. Verify that the **Change Media to:** box is not checked. (Click on it if necessary). 3. Verify that the **New Medium** option button is displaying "**- -**". [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 4. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: You can not modify request-level attributes and place the intervention on hold. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page if the operator attempted to modify request-level attributes (e.g., change the media type, update ftp push parameters, or disable limit checking) and then tried to place the intervention on hold. If the selected request-level attribute(s) should be implemented, the request should either be submitted or partitioned. If the selected request-level attribute(s) should not be implemented, the intervention may be placed on hold. 1. Click on the **OK** button to dismiss the dialog box. 2. If the selected request-level attribute(s) should be implemented, either submit or partition the request. 3. If the selected request-level attribute(s) should not be implemented, click on the **Reset** button, then place the intervention on hold. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (8 of 13)

Message Text	Impact	Cause and Corrective Action
ERROR: You can not modify request-level attributes if you are failing the request. [Displayed in a dialog box]	Intervention cannot be resolved.	The message appears on the **Open Intervention Detail** page if the operator attempted to modify request-level attributes (e.g., change the media type, update ftp push parameters, or disable limit checking), then tried to fail the entire request. If the request should be failed, the request-level attribute changes should be deselected, then the request can be failed. 1. Click on the **OK** button to dismiss the dialog box. 2. If the selected request-level attribute(s) should be implemented, either submit or partition the request. 3. If the request should be failed, first deselect the request-level attribute(s), then fail the request. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: You must assign a worker to this intervention before proceeding. [Displayed in a dialog box]	Actions cannot be taken on an intervention.	The message appears on the **Open Intervention Detail** page if the operator attempted to take an action on an open intervention before assigning a name in the **Worked by:** text box. (No worker name is required to view the intervention without taking any action.) A real name or a user ID must be entered in the field. Numbers and spaces are allowed. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter a valid name in the **Worked by:** text entry box on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
ERROR: You must enter a name into the Worked by field before proceeding. [Displayed in a dialog box]	Actions cannot be taken on an intervention.	The message appears on the **Open Intervention Detail** page if the operator attempted to take an action on an open intervention before assigning a name in the **Worked by:** text box. (No worker name is required to view the intervention without taking any action.) A real name or a user ID must be entered in the field. Numbers and spaces are allowed. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter a valid name in the **Worked by:** text entry box on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (9 of 13)

Message Text	Impact	Cause and Corrective Action
INPUT ERROR: There was a problem with the input parameter for a User Profile. Please contact your system's administrator to fix this problem.	Information about a User profile is not displayed.	The error message is rare; it appears when the UserId parameter (usually embedded in the URL) is empty. It indicates that the page was probably accessed directly (i.e., the operator did not arrive at the page via a link). If the operator did arrive at the page through a link, there could be a serious database error or a problem with the Perl code, since the User ID associated with the order was not passed to the page. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the previous page. 2. Attempt to access the desired page by clicking on the appropriate link. 3. If the same error message is displayed again, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
INPUT ERROR: There was a problem with the input parameter for ECS Order. Please contact your system's administrator to fix this problem.	Information about an ECS Order does not get displayed.	The error message is rare; it appears when the ecs_order parameter (usually embedded in the URL) is empty. It indicates that the page was accessed directly (i.e., the operator did not arrive at the page via a link). If the operator did arrive at that page through a link, there could be a serious database error or a problem with the Perl code, since the ECS Order ID was not passed to the page. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the previous page. 2. Attempt to access the desired page by clicking on the appropriate link. 3. If the same error message is displayed again, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
Please hit your browser's Back button and enter a valid name into the "worked by" field and click on "Override Current Worker	Intervention cannot be resolved.	No name has been entered in the **Worked by:** field on the **Open Intervention Detail** page . Before any action on the intervention will be accepted, a name must be entered. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. Enter a valid name in the **Worked by:** text entry box on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (10 of 13)

Message Text	Impact	Cause and Corrective Action
Please hit your browser's Back button and select a disposition.	Intervention cannot be resolved.	No disposition was selected on the **Open Intervention Detail** page. Go to the previous page and select a disposition. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. Select an appropriate disposition on the **Open Intervention Detail** page. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
Sweeper error: <message>	Server Statistics or Queue Status page does not display correct information, or the affected pages do not display at all.	The message appears either on the **Error** page, **Queue Status** page, or **OM Server Statistics** page. **SweeperStart** is a shell script that runs the Sweeper binary, which tells the system whether or not certain servers are up and running. If either the shell script or the Sweeper binary is corrupt, missing, not executable, or has the wrong permissions, the error message is displayed. The **OM GUI** must be reinstalled or the binary or shell script must be manually copied to its proper location and given the proper permissions. Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
The e-mail text box is empty – it should contain a message to the user if you want e-mail sent out. [Displayed in a dialog box]	Intervention resolution cannot be submitted.	The message appears if there is an e-mail text box on the **Close Confirmation** page and the operator did not enter any message text. Some text should be entered and the form should be resubmitted. 1. Click on the **OK** button to dismiss the dialog box. 2. Enter appropriate text in the e-mail text box or click on the **Don't send e-mail** box (as applicable). 3. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
You can not change the FTP Push parameters and change the media type at the same time. Please hit your browser's Back button and correct this	Intervention cannot be resolved.	The message appears if the media type for the request is ftp push. The operator probably elected to change the media type and checked the **Update FtpPush Parameters** box at the same time. The operator should go back to the previous page and uncheck the box. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. Click on the **Update FtpPush Parameters** box to uncheck it. 3. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (11 of 13)

Message Text	Impact	Cause and Corrective Action
You can not update the FTP Push parameters for this request because the media type is <old media>. Please hit your browser's Back button and correct this.	Intervention cannot be resolved.	This message appears if the operator inadvertently checked the **Update FtpPush Parameters** box, even though the media type for the request is not ftp push. The operator should go back and uncheck this box. The error message should be quite rare, because normally the **Update FtpPush Parameters** box does not appear if the media type is not ftp push. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. Click on the **Update FtpPush Parameters** box to uncheck it. 3. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
You have entered partitioning days/hours, but have not indicated that you want to spread the request over this time period! (you probably forgot to check the AND box). Hit your browser's Back button to correct this.	Intervention cannot be resolved.	The operator probably intended to partition the request but forgot to check the "and" box. The redundancy is intended to ensure that the correct action is taken. 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. Click on the box in front of **and spread request over**. 3. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (12 of 13)

Message Text	Impact	Cause and Corrective Action
You have indicated you want to change the media, but did not select the media type. Hit your browser's Back button to correct this.	Intervention cannot be resolved.	The operator checked the **Change Media to:** but did not select a different medium from the **New Medium** option button. The operator should go back to the previous page and either select a new medium or uncheck the **Change Media to:** box and ensure that the **New Medium** option button is set to "**- -**". 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. If a new distribution medium is being selected, verify that the **Change Media to:** box is checked. (Click on it if necessary). 3. If a new distribution medium is being selected, verify that the **New Medium** option button is displaying the appropriate medium. [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 4. If the old distribution medium is being retained, verify that the **Change Media to:** box is not checked. (Click on it if necessary). 5. If the old distribution medium is being retained, verify that the **New Medium** option button is displaying "**– –**". [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 6. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

Table 15.16-2. Order Manager GUI User Messages (13 of 13)

Message Text	Impact	Cause and Corrective Action
You have selected a new media type, but not did indicate you actually wanted the media changed. Hit your browser's Back button to correct this.	Intervention cannot be resolved.	The operator changed the distribution medium for the request on the **Open Intervention Detail** page but did not check the **Change Media to:** box. The redundancy is intended to ensure that the operator does indeed want to change the distribution medium. The operator should go back to the previous page and either check the **Change Media to:** box or ensure that the **New Medium** option button is set to "**- -**". (indicating no change). 1. Click on the ← icon in the **OM GUI** navigation frame to redisplay the **Open Intervention Detail** page. 2. If a new distribution medium is being selected, verify that the **Change Media to:** box is checked. (Click on it if necessary). 3. If a new distribution medium is being selected, verify that the **New Medium** option button is displaying the appropriate medium. [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 4. If the old distribution medium is to be retained, verify that the **Change Media to:** box is not checked. (Click on it if necessary). 5. If the old distribution medium is to be retained, verify that the **New Medium** option button is displaying "**– –**". [If necessary, click and **hold** the **New Medium** option button to display a menu of media, move the mouse cursor to the desired selection (highlighting it), then release the mouse button.] 6. Complete the intervention. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]

15.16.1 Checking Log Files

Log files can provide indications of the following types of problems:

- Communication problems.
- Database problems.
- Lack of disk space.

The procedure for checking log files starts with the assumption that the operator has logged in to the system and the appropriate host.

15.16.1.1 Checking Log Files

1 Access a terminal window logged in to the appropriate host.

- Linux internal server (e.g., x4oml01) host has the following data distribution and Order Manager ALOG files:
  - EcOmOrderManager.ALOG
- Data Pool Server (e.g.,x4dpl01) host has the following Data Pool and Spatial Subscription Server log files:
  - EcDlActionDriver.ALOG.
  - EcDlInsertUtility.log.
  - EcDlNewInsertUtiltiyDPAD.log.
  - EcDlDpmDataPoolGUI.log.
- WebAccess (e.g., x4eil01) host has the following log files:
  - EcDlWebaccess.DEBUGLOG.
  - EcDlRollupWebLogs.log.
  - ECDmEwoc.debug.log

2 Type **cd /usr/ecs/*MODE*/CUSTOM/logs** then press **Return/Enter**.

3 Type **pg *filename*** then press **Return/Enter**.

- ***filename*** refers to the data distribution, log file to be reviewed (e.g., EcDsDdistGui.ALOG, EcDsDistributionServer.ALOG).
- The first page of the log file is displayed.
- Although this procedure has been written for the **pg** command, any UNIX editor or visualizing command (e.g., **vi**, **view, more**) can be used to review the log file.

4 Review the log file to identify problems that have occurred.

5 Respond to problems as follows:

- Communication problems.
  - Notify the Operations Controller/System Administrator of suspected communication problems.
- Database problems.
  - Verify that relevant database servers are running.

- Check for lack of (or corruption of) data in the database using either a database browser or isql commands.
- Notify the Database Administrator of suspected database problems.

- Lack of disk space.
  - Remove unnecessary files.
  - Notify the Operations Controller/System Administrator of recurring disk space problems.

15.16.2 Checking Database Connections

The data distribution database is the repository of data concerning data distribution requests. If applications (including the Data Distribution Operator GUI) are unable to connect to the database, the data distribution request data cannot be retrieved or (in the case of the GUI) displayed. Consequently, if the GUI does not display data or if the display does not refresh, checking the database connections is a logical step in trying to isolate the problem.

The procedure for checking database connections starts with the assumption that the operator has logged in to the system.

15.16.2.1 Checking Database Connections

1 Submit a request to the Database Administrator to identify the values for the following parameters associated with the EcDsDistributionServer:

- **DBName.**
- **DBServer.**
- **DBMaxConnections.**

2 Access a terminal window logged in to the APC Server host.

- Examples of APC Server host names include **e4eil01, n4eil01**
- For detailed instructions refer to the procedure for **Logging in to System Hosts** (preceding section of this lesson).
- APC Server typically hosts Sybase for the data distribution shared database.

3 Type **isql –U*userID* -S*DBServer*** then press **Return/Enter**.

- For example:

  isql –Sx0oml01_srvr

4 At the **Password:** prompt type ***dbpassword*** then press **Return/Enter**.

- The ***dbpassword*** is the password for logging in to the database using the specified ***userID***.

5 Type **sp_who** at the **1>** prompt then press **Return/Enter**.

6 Type **go** at the **2>** prompt then press **Return/Enter**.

7 Type **sp_configure "user connections"** at the **1>** prompt then press **Return/Enter**.

8 Type **go** at the **2>** prompt then press **Return/Enter**.

9 Type **quit** at the **1>** prompt then press **Return/Enter**.

10 Compare the number of actual connections (results of **sp_who**) with the number of connections for which the database has been configured (results of **sp_configure "user connections"**).

11 If the number of actual connections is very close to the number of connections for which the database has been configured, notify the Database Administrator of the fact.

12 If the number of actual connections is **not** very close to the number of connections for which the database has been configured, compare the number of actual connections with the value for DBMaxConnections that the Database Administrator specified (Step 1).

13 If the number of actual connections is very close to the value for DBMaxConnections, notify the Database Administrator of the fact.

- It may be advisable to increase the value assigned to the DBMaxConnections parameter in the Configuration Registry.

15.16.3 Recovering from Order Manager Failures

Actions to be taken when recovering from some common Order Manager problems are described in Table 15.16-3.

Table 15.16-3. Recovering from Order Manager Failures (1 of 4)

Symptom	Likely Cause(s)	Response
Request is hanging in Queued status	Global Staging Status parameter is set to "S."	On the **OMS Server and Database Configuration** page determine whether or not Global Staging Status is set to "S." [For detailed instructions refer to the procedure for **Checking/Modifying Values Assigned to OMS Server or Database Parameters** (previous section of this lesson).]
	Archive Server queue is suspended.	On the **OM Queue Status** page determine whether or not the archive server queue where the data comes from is suspended. [For detailed instructions refer to the procedure for **Checking/Modifying OM Queue Status** (previous section of this lesson).]

Table 15.16-3. Recovering from Order Manager Failures (2 of 4)

Symptom	Likely Cause(s)	Response
Request is hanging in Queued status (Cont.)	Media type specific staging parameter(s) set to 0.	1. For an ftp pull request, on the **Media Configuration** page check the two parameters under the media type of the request. (If either of the two sets to 0, the request cannot be promoted to "Staging.") 2. For an ftp push request, check the configuration on the **FTP Push/SCP Policy Configuration** page (If it is a request for the general group, check the configuration for the OTHER destination. If it is a request for a configured destination, click into that destination to check its configuration.)
	DPL file system is down/not available.	On the **Operator Alerts** page determine whether a specific file system alert has been generated. (If one of DPL file systems is down or not available, ESDTs that are configured for staging to that file system are suspended for staging in OMS.) [For detailed instructions refer to the procedure for **Viewing Operator Alerts on the OM GUI** (previous section of this lesson).]
	Queue is suspended.	On the **OM Queue Status** page determine whether or not the corresponding queue has been suspended. (If so, the request is not going to be worked off until the queue is reactivated.) [For detailed instructions refer to the procedure for **Checking/Modifying OM Queue Status** (previous section of this lesson).]
Request is hanging in Staging status (Cont.)	Granule(s) of the request is (are) stuck in "Staging."	1. On the **Distribution Requests** page click on the request ID to bring up the **Distribution Request Detail** page. [For detailed instructions refer to the procedure for **Monitoring/Controlling Distribution Request Information on the OM GUI** (previous section of this lesson).] 2. Check the status of each individual granule in the request. (If one of them stays in "Staging," the whole request will remain in "Staging" until the granule finishes staging.) [For detailed instructions refer to the procedure for **Monitoring/Controlling Distribution Request Information on the OM GUI** (previous section of this lesson).] 3. If at least one of the granules in the request is still in "Staging," check the DPL DlActionDriver log and DlInsertUtility log to determine why the granule has not completed staging yet. [For detailed instructions refer to the procedure for **Checking Log Files** (previous section of this lesson).]

Table 15.16-3. Recovering from Order Manager Failures (3 of 4)

Symptom	Likely Cause(s)	Response
	Global Staging Status Parameter flag is suspended while the request is in the middle of staging.	Check the Global Staging Status parameter. (If the flag is suspended while the request is in the middle of staging, the request will stay in "Staging" until the suspension is lifted.) [For detailed instructions refer to the procedure for **Checking/Modifying Values Assigned to OMS Server or Database Parameters** (previous section of this lesson).]
	Archive Sever queue is suspended while the request is in the middle of staging.	On the **OM Queue Status** page determine whether or not the Archive Server queue has been suspended. (If the archive is suspended while the request is in the middle of staging, the request will remain in that status until the suspension is lifted.) [For detailed instructions refer to the procedure for **Checking/Modifying OM Queue Status** (previous section of this lesson).]
Request goes to Operator Intervention from Staging	There is a bad granule in the request.	On the **Open Interventions Detail** page fail the bad granule (or replace it with a good one) then resubmit the request. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
Request is hanging in Transferring status	A request usually stays in "Transferring" for one of the following reasons: · Ftp Push login/password failure. · Destination host not reachable. · Destination disk space is full. · Ftp Push operation timed out. · Number consecutive failure for that destination exceeds configured maximum number. If one of the preceding situations occurs, the destination of the request is suspended.	1. On the **Operator Alerts** page or **Suspended Destinations** page get access to the detailed explanation for the alert associated with the FTP Push/SCP Destination name/target host. (Ftp push operations that caused the suspension of destination are listed.) [For detailed instructions refer to the procedure for **Viewing Operator Alerts on the OM GUI** (previous section of this lesson).] 2. If there is a large ftp push load within a certain period of time and it seems that the request stays in "Transferring" for a very long time check the configuration on the **FTP Push/SCP Policy Configuration** page (The number of concurrent ftp push requests for the destination may be set too low.) 3. If it is a request for a configured destination, first check Max Operations on the upper left corner. (If its value is 0, there is no ftp push operation allowed for the configured destination. If the value is too low, the workload will be worked off very slowly.) 4. If it is a request for the general group, check the Max Operations.

Table 15.16-3. Recovering from Order Manager Failures (4 of 4)

Symptom	Likely Cause(s)	Response
Request goes to Operator Intervention from Transferring status	A granule of the request failed ftp push for a reason other than those listed under "Request is hanging in Transferring status."	1. On the **Open Interventions Detail** page fail the bad request (or replace it with a good one) then resubmit the request. [For detailed instructions refer to the procedure for **Responding to an Open Intervention** (previous section of this lesson).]
Ftp pull request goes to Operator Intervention	Quick Server on the APC Server host (e.g., e0acg11, g0acg01, l0acg02, or n0acg01) is down.	On the APC Server host (e.g., x4oml01) determine the status (up or down) of the Quick Server. [For detailed instructions refer to the procedure for **Checking Connections to Hosts/Servers** (previous section of this lesson).]
Ftp pull request goes to Operator Intervention (Cont.)	Permission for creating a subdirectory is denied on the APC Server host.	On the APC Server host determine the permissions for creating an Ftp Pull subdirectory. [For detailed instructions refer to the procedure for **Determining the Permissions for Creating an FtpPull Subdirectory** (subsequent section of this lesson).]

15.16.4 Determining the Permissions for Creating an Ftp Pull Subdirectory

One of the criteria for a successful Ftp Pull distribution is the creation of an Ftp Pull subdirectory for staging the data to be distributed. If permission for creating a subdirectory is denied on the host, the Ftp Pull distribution cannot be accomplished.

The procedure for determining the permissions for creating an Ftp Pull subdirectory starts with the assumption that the operator has logged in to the system.

15.16.4.1 Determining the Permissions for Creating an Ftp Pull Subdirectory

1 Access a terminal window logged in to the appropriate host.

- For example APC Server host names include **e4eil01, n4eil01**
- For detailed instructions refer to the procedure for **Logging in to System Hosts** (preceding section of this lesson).

2 At the command line prompt type **cd *path*** then press **Return/Enter**.

- ***path*** indicates the path to the directory with the permissions to be checked.
- For example:

  cd /usr/ecs/OPS/CUSTOM/acm/x0acg01/data/PullDisk/user

3 Type **ls -al** then press **Return/Enter**.

- The following type of result is obtained:

```
total 32
drwxrwxr-x   30 cmops    cmops       4096 Mar 21  2005 ./
drwxrwxr-x    4 cmops    cmops         88 Nov  9  2002 ../
drwxr-xr-x    2 cmshared cmshared     135 Jun  7  2004 0800011693bFwLJA/
```

drwxr-xr-x 2 cmshared cmshared 135 Jul 7 2004 0800011693rPWeDb/
[…]

4 Observe the results of the **ls –al** command.

- In the example in Step 3 the permissions for the current directory (represented by./ at the end of the end of the line) allow user cmops and other members of the same group (including cmshared, cmts1, and cmts2) but no others to write to the directory. So cmshared could create a subdirectory in the current directory.
- In the example that follows the permissions for the current directory allow the owner (i.e., cmops) only to write to the directory. So cmshared could not create a subdirectory in the current directory.

  total 960
  drwxr-xr-x 5 cmops 4096 Jul 30 2004 .
  drwxr-xr-x 37 cmops 28672 Oct 7 10:48 ..
  -rw-r--r-- 1 cmops 20210 Jul 30 2004
  MISR_AM1_AS_AEROSOL_P015_O008407_F06_0013.hdf
  -rw-r--r-- 1 cmops 78009 Jul 30 2004
  MISR_AM1_AS_AEROSOL_P015_O008407_F06_0013.hdf.met
  […]

15.16.5 HEG Failures

A common means of detecting a HEG failure is the appearance of an intervention on the **OM GUI** [refer to the procedure for **Viewing Open HEG Intervention Information on the OM GUI** (previous section of this lesson)]. Another means of detecting a HEG failure is receiving notification from a user (i.e., via User Services) that the order has not been shipped. In release 8.1 HEG request made through EWOC go through a separate path than those made through the DPL Web Access GUI. These requests are treated as regular requests (even though the Order Type is 'DA') and can be tracked through regular means. Any error results in a HEG Processing Error in the OMS GUI and the Order Manage Server or HegService log must be consulted to see the exact error.

15.16.5.1 Troubleshooting a HEG Failure

1 View information concerning the pertinent open HEG intervention on the **OM GUI**.

- For detailed instructions refer to the procedure for **Viewing Open HEG Intervention Information on the OM GUI** (previous section of this lesson).
- On the **Open HEG Intervention Detail** page there is a link for viewing the HEG processing instructions (XML file).
  - The XML processing instructions may provide indications as to why the request could not be completed.

2 If review of the HEG information on the **OM GUI** indicates that there are no impediments to completing the HEG request, retry processing of the request.

- For detailed instructions refer to the procedure for **Responding to an Open HEG Intervention** (previous section of this lesson).

3 If additional information is needed before taking action, check the log files for error codes.

- Log files include the following files:
  - HEG Server operations log (HegServer.ops.log).
  - HEG Server debug log (HegServer.debug.log).
  - HEG Server performance log (HegServer.perf.log), if available (typically turned off in normal operations)
- Log files are located in the /usr/ecs/*MODE*/CUSTOM/logs directory.
- Error codes and the appropriate responses to them are described in Table 15.16-4.
- For detailed instructions refer to the **Checking HEG Server Log Files** procedure (subsequent section of this lesson).

4 If further information is needed before taking action, check the files in the HEG tempfiles directory.

- The tempfiles directory contains the following types of files:
  - Converter logs.
- resample.log.
- swtif.log.
- gdtif.log.
  - Parameter file (.prm).
  - EcHgHEGConversion.log.
- If debug is on (HegServer.application.debugFlag = true in the EcHgServerConfig.properties file in the /usr/ecs/*MODE*/CUSTOM/cfg directory), a tempfiles directory containing pertinent files is created at the configurable location ***tempDirRoot*/*MODE*/*tempDirTop*/*outputdirectory*/tempfiles**.
  - ***tempDirRoot*** and ***tempDirTop*** are specified in the EcHgServerConfig.properties file in the /usr/ecs/*MODE*/CUSTOM/cfg directory.
  - ***outputdirectory*** is specified in the HEG request XML file.
- For detailed instructions refer to the procedure for **Checking Files in the HEG Tempfiles Directory** (subsequent section of this lesson).

5 If the problem cannot be identified and fixed without help within a reasonable period of time, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (1 of 17)

Error Code/String	Response
-3 ClientDown	Ensure that the client is up.
-2 Rejected	1. Ensure that the MAX_NUM_OF_CONCURRENT_HEG_PROCESS value in the OMS Database OmConfigParameter table (Max Num of Concurrent HEG Process parameter as displayed on the **OM GUI**) is configured to be less than the configured value of HegServer.application.maxClientRequests in HEG server configuration file (/usr/ecs/*MODE*/CUSTOM/cfg/EcHgServerConfig.properties). [For detailed instructions refer to the procedure for **Checking Files in the HEG Tempfiles Directory** (subsequent section of this lesson) and the procedure for **Checking/Modifying Values Assigned to OMS Server or Database Parameters** (previous section of this lesson).] 2. If the value assigned to the configuration parameter is correct and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
-1 Cancelled	[No action necessary.]
0 HegConversionSuccessful	[No action necessary.]
200 InputXmlValidationErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
201 ErrCreateWorkingDirectory	1. Verify that cmshared has write permission ("drwxrwxr-x") to the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking). 2. If the write permission is correct, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
202 InvalidInputInBandContainerErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
203 CreateSummaryFileErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
204 MoveOutputErr	1. Verify that there is enough space to move the TIF/HDF/MET files from the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) to the destination directory (/datapool/*MODE*/user/*FS*#/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID). 2. Ensure that cmshared has write permission ("drwxrwxr-x") to the destination directory (/datapool/*MODE*/user/*FS*#/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID). 3. If cmshared has write permission to the destination directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (2 of 17)

Error Code/String	Response
205 CreateTempFilesDirErr	1. Verify that cmshared has write permission ("drwxrwxr-x") to the temp files directory (/datapool/*MODE*/user/*FS#*/HEGTemp/datapool/*MODE*/user/*FS#*/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID/tempfiles). 2. If cmshared has write permission to the tempfiles directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
206 RunConverterExceptionErr	1. Verify that the HEG converters and jar file (bandtool, swtif, gdtif, resample, hegtool, and HEG.jar) exist in the correct location (/usr/ecs/*MODE*/CUSTOM/bin/HEG). 2. If the HEG converters and jar file are in the correct location and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
207 OutputDirIsNotADirErr	1. Verify that the output directory (/datapool/*MODE*/user/*FS#*/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID) is a directory. 2. If there is an appropriate output directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
208 OutputDirUnwritableErr	1. Verify that cmshared has write permission ("drwxrwxr-x") to the output directory (/datapool/*MODE*/user/*FS#*/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID). 2. If cmshared has write permission to the output directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
209 OutputDirCreateErr	1. Verify that cmshared has permission ("drwxrwxr-x") to create the output directory (/datapool/*MODE*/user/*FS#*/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID). 2. If cmshared has permission to create the output directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
210 WorkingDirIsNotADirErr	1. Verify that the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) is a directory. 2. If there is an appropriate working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
211 WorkingDirUnwritableErr	1. Verify that cmshared has write permission ("drwxrwxr-x") in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking). 2. If cmshared has write permission in the working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (3 of 17)

Error Code/String	Response
212 ConversionLogCreateErr	1. Verify that cmshared has permission ("drwxrwxr-x") to create/write the EcHgHEGConversion.log file in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking). 2. If cmshared has permission to create/write the EcHgHEGConversion.log file in the working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
213 InputHDFEOSFileNotExistErr	1. Verify that the hdfeos file exists in the datapool. 2. If the hdfeos file exists in the datapool and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
214 ErrDeleteExistingWorkingDir	1. Verify that cmshared has permission ("drwxrwxr-x") to delete the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking). 2. Determine whether the debug flag in the HEG Server cfg file (/usr/ecs/*MODE*/CUSTOM/cfg/EcHgServerConfig.properties) is set to false for the server to remove the working directory. (If the debug flag isn't set to false, this error won't occur because the working directory will be preserved.) 3. If the debug flag is set to false, cmshared has delete permission, and an error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
500 CantRunHegtool	1. Verify that the hegtool executable exists in the correct location (/usr/ecs/*MODE*/CUSTOM/bin/HEG). 2. Check the /usr/ecs/*MODE*/CUSTOM/utilities/EcHgServerStart script to ensure that the environment variables MTDDATADIR, MRTDATADIR, PGSHOME are set correctly; i.e., MTDDATADIR=/usr/ecs/$MODE/CUSTOM/data/HEG MRTDATADIR=/usr/ecs/$MODE/CUSTOM/data/HEG PGSHOME=/usr/ecs/$MODE/CUSTOM/data/HEG/TOOLKIT_MTD 3. If the hegtool executable is present in the correct location, the environment variables are set correctly, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
501 ErrReadingProperties	1. Verify that the HEG Server properties file exists in the correct location (/usr/ecs/*MODE*/CUSTOM/cfg/EcHgServerConfig.properties). 2. If the HEG Server properties file is present in the correct location and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
502 ErrReadingHdfeos	1. Verify that the hdfeos file exists in the datapool. 2. If the hdfeos file is present in the datapool and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (4 of 17)

Error Code/String	Response
503 InputFileNotHdfeos	1. Verify that the input file is an hdfeos file. 2. If the input file is an hdfeos file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
504 ErrLoadingDataInArray	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
505 ErrWritingParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
506 ConverterExecuteErr	1. Verify that the HEG converters and HEG jar file (bandtool, hegtool, swtif, gdtif, resample, HEG.jar) exist in the correct location (/usr/ecs/*MODE*/CUSTOM/bin/HEG). 2. If the HEG converters and HEG jar file are present in the correct location and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
508 NoParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
509 ErrCopyCompressedFile	1. Verify that the compressed file exists in the datapool. 2. Verify that cmshared has write permission ("drwxrwxr-x") to the destination directory (/datapool/*MODE*/user/*FS#*/.orderdata/OUTPUTS*encrypted*/HEGOUT.001*encrypted*/HEG/requestID.granuleID). 3. If the compressed file is in the datapool, cmshared has write permission to the destination directory, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
510 ErrDecompressingFile	1. Verify that the correct decompression utility is specified in the HEG Server cfg file (/usr/ecs/*MODE*/CUSTOM/cfg/EcHgServerConfig.properties) and that it exists in the operating system. 2. Verify that the compressed file exists in the datapool. 3. If the correct decompression utility is specified in the HEG Server cfg file, the compressed file is in the datapool, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
511 DecompressCommandFormatErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
512 SubsetAreaNotInMISRFile	1. Verify that the geographic extent of the spatial subset area entered by the user intersects the granule. 2. If the geographic extent of the spatial subset area intersects the granule and an error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
600 NO ERROR - SUCCESSFUL	[No action necessary.]
601 GeneralProcessingErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (5 of 17)

Error Code/String	Response
602 AssertErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
603 EnvironmentVariableNotFound	1. Verify that the environment variables are set correctly (i.e., MTDDATADIR=/usr/ecs/$MODE/CUSTOM/data/HEG MRTDATADIR=/usr/ecs/$MODE/CUSTOM/data/HEG PGSHOME=/usr/ecs/$MODE/CUSTOM/data/HEG/TOOLKIT_MTD) in the EcHgServerStart script, which is located at /usr/ecs/*MODE*/CUSTOM/utilities. 2. If the environment variables are set correctly and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
604 MemoryAllocationErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
605 ErrWaitingForThreadTermination	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
606 SemaphoreErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
607 MutexErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
608 ErrSpaceInName	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
609 ErrCommandLineUsage	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
610 ErrOpenInputParameterFile	1. Verify that the parameter file (.prm) exists in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking). 2. If the parameter file exists in the working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
611 ErrReadInputParameterFile	1. Verify that the input parameter file (.prm) in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) is a valid file. 2. If the input parameter file is a valid file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
612 ErrOpenOutputParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
613 ErrWriteOutputParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
614 ErrOpenInputImageFile	1. Verify that the input image file (hdfeos file) exists in the datapool. 2. If the input image file is in the datapool and the error still occurs, submit a trouble ticket.
615 ErrReadInputImageFile	1. Verify that the input image file (hdfeos file) read in is valid. 2. If the input image file read in is valid and the error still occurs, submit a trouble ticket.

Table 15.16-4. Troubleshooting HEG Problems (6 of 17)

Error Code/String	Response
616 ErrOpenOutputImageFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
617 ErrWriteOutputImageFile	1. Verify that cmshared has write permission ("drwxrwxr-x") in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) 2. Verify that there is enough space to write the output image file to the working directory. 3. If cmshared has write permission, there is enough space to write the output image file to the working directory, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
618 ErrOpenInputHeaderFile	1. Verify that the HegHdr.hdr file exists in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking). 2. If HegHdr.hdr file is in the working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
619 ErrReadInputHeaderFile	1. Verify that the HegHdr.hdr file [in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking)] is a valid file. 2. If the HegHdr.hdr file is a valid file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
620 ErrOpenOutputHeaderFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
621 ErrWriteOutputHeaderFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
622 NoCommandLineArgument	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
623 MissingOrBadParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
624 UnknownCommandLineArgument	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
625 BadOrMissingInputFileNameExtension	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the value assigned to the INPUT_FILENAME contains an hdfeos file with a .hdf extension. 2. If the value assigned to INPUT_FILENAME contains a .hdf file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (7 of 17)

Error Code/String	Response
626 BadOrMissingOutputFileNameExtension	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the OUTPUT_FILENAME parameter contains a filename with either a .hdf or .tif extension. 2. If the value assigned to OUTPUT_FILENAME contains a .hdf file or a .tif file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
627 BadOrMissingResampleType	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the RESAMPLING_TYPE parameter is NN, BI, or CC. 2. If the value assigned to RESAMPLING_TYPE is NN, BI, or CC and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
628 BadOrMissingProjectionType	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the OUTPUT_PROJECTION_TYPE parameter is one that works for that particular hdfeos (granule) file. 2. If the value assigned to OUTPUT_PROJECTION_TYPE is one that works for that particular hdfeos (granule) file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
629 BadOrMissingInputFileNameField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the INPUT_FILENAME parameter specifies an hdfeos file from the datapool. 2. If the value assigned to INPUT_FILENAME specifies an hdfeos file from the datapool and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
630 BadOrMissingSpectralSubsetField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
631 BadOrMissingSpatialSubsetField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the values assigned to the SPATIAL_SUBSET_UL_CORNER and SPATIAL_SUBSET_LR_CORNER parameters are valid. 2. If the values assigned to the SPATIAL_SUBSET_UL_CORNER and SPATIAL_SUBSET_LR_CORNER parameters are valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (8 of 17)

Error Code/String	Response
632 BadOrMissingOutputFileNameField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the OUTPUT_FILENAME parameter has the correct file extension. 2. If the value assigned to OUTPUT_FILENAME has the correct file extension and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
633 BadOrMissingResampleTypeField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the RESAMPLING_TYPE parameter is NN, BI, or CC. 2. If the value assigned to RESAMPLING_TYPE is NN, BI, or CC and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
634 BadOrMissingOutputProjectionField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the OUTPUT_PROJECTION_TYPE parameter is one that works for that particular hdfeos (granule) file. 2. If the value assigned to OUTPUT_PROJECTION_TYPE is one that works for that particular hdfeos (granule) file and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
635 BadOrMissingOutputProjectionParametersField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the values assigned to the OUTPUT_PROJECTION_PARAMETERS parameter are valid. 2. If the values assigned to OUTPUT_PROJECTION_PARAMETERS are valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
636 BadOrMissingDataTypeField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (9 of 17)

Error Code/String	Response
637 BadOrMissingProjectionParameters Field	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that each of the following parameters: INPUT_FILENAME, OBJECT_NAME, FIELD_NAME, BAND_NUMBER, OUTPUT_PIXEL_SIZE_X, OUTPUT_PIXEL_SIZE_Y, SPATIAL_SUBSET_UL_CORNER, SPATIAL_SUBSET_LR_CORNER, RESAMPLING_TYPE, OUTPUT_PROJECTION_TYPE, OUTPUT_PROJECTION_PARAMETERS, OUTPUT_FILENAME, and OUTPUT_TYPE is enclosed in a BEGIN and END block. 2. Ensure that the first line of the parameter file has a value assigned to the NUM_RUNS parameter that is equal to the number of BEGIN and END blocks in the file. 3. If the parameters are formatted properly, the NUM_RUNS parameter has a value that is equal to the number of BEGIN and END blocks in the file, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
638 BadOrMissingProjectionParameters Value	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that values assign to the following parameters: INPUT_FILENAME, OBJECT_NAME, FIELD_NAME, BAND_NUMBER, OUTPUT_PIXEL_SIZE_X, OUTPUT_PIXEL_SIZE_Y, SPATIAL_SUBSET_UL_CORNER, SPATIAL_SUBSET_LR_CORNER, RESAMPLING_TYPE, OUTPUT_PROJECTION_TYPE, OUTPUT_PROJECTION_PARAMETERS, OUTPUT_FILENAME, and OUTPUT_TYPE are valid. 2. If the parameters are valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
639 BadOrMissingSpatialExtentsCorner	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the values assigned to the SPATIAL_SUBSET_UL_CORNER and SPATIAL_SUBSET_LR_CORNER parameters are valid. 2. If the spatial subsetting values are valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
640 BadOrMissingNBANDSField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that there is a BAND_NUMBER parameter. 2. If there is a BAND_NUMBER parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (10 of 17)

Error Code/String	Response
641 BadOrMissingNBANDSValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the value assigned to the BAND_NUMBER parameter is valid. 2. If the value assigned to the BAND_NUMBER parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
642 BadOrMissingBANDNAMESField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that there is a BANDNAMES parameter. 2. If there is a BANDNAMES parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
643 BadOrMissingBANDNAMESValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the value assigned to the BANDNAMES parameter is valid. 2. If the value assigned to the BANDNAMES parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
644 BadOrMissingDATATYPEField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
645 BadOrMissingDATATYPEValue	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
646 BadOrMissingNLINESField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
647 BadOrMissingNLINESValue	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
648 BadOrMissingNSAMPLESField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
649 BadOrMissingNSAMPLESValue	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
650 BadOrMissingPIXEL_SIZEField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that there are OUTPUT_PIXEL_SIZE_X and OUTPUT_PIXEL_SIZE_Y parameters. 2. If there are OUTPUT_PIXEL_SIZE_X and OUTPUT_PIXEL_SIZE_Y parameters and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (11 of 17)

Error Code/String	Response
651 BadOrMissingPIXEL_SIZEValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the values assigned to the OUTPUT_PIXEL_SIZE_X and OUTPUT_PIXEL_SIZE_Y parameters are valid. 2. Ensure that the correct units are specified for the parameters (either meters or degree decimal). [If Geographic projection is selected, the pixel sizes should be in degree decimal (DD) units. For all other projections, the pixel size should be in meters.] 3. If the parameter values are valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
652 BadOrMissingMINVALUEField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
653 BadOrMissingMINVALUEValue	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
654 BadOrMissingMAXVALUEField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
655 BadOrMissingMAXVALUEValue	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
656 BadOrMissingBACKGROUND_FILL Field	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
657 BadOrMissingBACKGROUND_FILL Value	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
658 TotalBandsFoundInconsistantWithN BANDS	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
659 NoBandsSelectedForOutput	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
660 BadOrMissingUTMZoneField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that there is a UTM_ZONE parameter. 2. If there is a UTM_ZONE parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
661 BadOrMissingUTMZoneValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking) ensure that the value assigned to the UTM_ZONE parameter is valid. 2. If the value assigned to the UTM_ZONE parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (12 of 17)

Error Code/String	Response
662 BadOrMissingELLIPSOID_CODEField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that there is a ELLIPSOID_CODE parameter. 2. If there is a ELLIPSOID_CODE parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
663 BadOrMissingELLIPSOID_CODEValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the value assigned to the ELLIPSOID_CODE parameter is valid. 2. If the value assigned to the ELLIPSOID_CODE parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
664 MissingBoundingRectangularCoordinates	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
665 ErrPixelSizeLessThanMinimum	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the values assigned to the pixel size parameters (e.g., OUTPUT_PIXEL_SIZE_X and OUTPUT_PIXEL_SIZE_Y) are not less than the minimum value. 2. Ensure that the correct units are specified for the parameters (either meters or degree decimal). [If Geographic projection is selected, the pixel sizes should be in degree decimal (DD) units. For all other projections, the pixel size should be in meters.] 3. If the parameter values are not less than the minimum value, are expressed in the appropriate units, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
666 ErrPixelSizeGreaterThanMaximum	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that the values assigned to the pixel size parameters (e.g., OUTPUT_PIXEL_SIZE_X and OUTPUT_PIXEL_SIZE_Y) are not greater than the maximum value. 2. Ensure that the correct units are specified for the parameters (either meters or degree decimal). [If Geographic projection is selected, the pixel sizes should be in degree decimal (DD) units. For all other projections, the pixel size should be in meters.] 3. If the parameter values are not greater than the maximum value, are expressed in the appropriate units, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
667 ErrCommandLineUsage	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
668 ErrOpenLogFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (13 of 17)

Error Code/String	Response
669 ErrOpenGeoTemp	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
670 ProjectionProcessingErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
671 OpenDatumFileErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
672 OpenSpheroidFileErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
673 ProjectionMathErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
674 PointLiesInBreakErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
675 OutputFileNameNotSpecifiedErr	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that a value is specified for the OUTPUT_FILENAME parameter. 2. If a value is specified for the OUTPUT_FILENAME parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
676 ProjectionTransformationFailed	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
677 FailedToConvergeAfterManyIterations	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
678 TooManyIterationsForInverseRobinson	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
679 TooManyIterationsInInverse	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
680 InputDataErr	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
681 IllegalDMSField	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
682 InconsistentUnitAndSystemCodesForInput	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
683 IllegalInputSystemCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
684 IllegalInputUnitCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
685 IllegalInputZoneCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (14 of 17)

Error Code/String	Response
686 PointProjectsIntoInfinity	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
687 LatitudeFailedToConvergeAfterManyIterations	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
688 InconsistentUnitAndSystemCodesForOutput	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
689 IllegalOutputSystemCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
690 IllegalOutputUnitCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
691 IllegalOutputZoneCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
692 TransformationCantBeComputedAtThePoles	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
693 PointCantBeProjected	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
694 PointProjectsIntoACircleOfUnacceptableRadius	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
695 FiftyIterationsPerformedWithoutConversion	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
696 SpheroidCodeResetToDefault	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
697 EqualLatitudesForStdParallelsOnOppositeSidesOfEquator	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
698 IllegalZoneNumber	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
699 ErrOpenStatePlaneParameterFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
700 IllegalSourceOrTargetUnitCode	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
701 MissingProjectionParameters	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
702 InvalidCornerCoordinatesForInputImage	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (15 of 17)

Error Code/String	Response
703 OutputWindowFallsOutsideMappingGrid	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
704 NUM_RUNSFieldIncorrect	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
705 ErrorWithBEGIN_ENDFields	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
706 BadOrMissingOBJECT_NAMEField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that a valid value is specified for the OBJECT_NAME parameter. 2. If a valid value is specified for the OBJECT_NAME parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
707 BadOrMissingFIELD_NAMEField	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that a valid value is specified for the FIELD_NAME parameter. 2. If a valid value is specified for the FIELD_NAME parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
708 BadOrMissingOUTPUT_TYPEField	1. In the parameter file (.prm) that is located in the working directory (/datapool/MODE/user/FS#/HEGWorking) ensure that there is an OUTPUT_TYPE parameter. 2. If there is an OUTPUT_TYPE parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
709 BadOrMissingOUTPUT_TYPEValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/MODE/user/FS#/HEGWorking) ensure that the value assigned to the OUTPUT_TYPE parameter is valid. 2. If the value assigned to the OUTPUT_TYPE parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
710 BadOrMissingBAND_NUMValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/*MODE*/user/*FS*#/HEGWorking) ensure that a valid value is specified for the BAND_NUMBER parameter. 2. If a valid value is specified for the BAND_NUMBER parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
711 SubsetAreaNotInFile	1. Verify that the geographic extent of the spatial subset area entered by the user intersects the granule. 2. If the geographic extent of the spatial subset area intersects the granule and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

Table 15.16-4. Troubleshooting HEG Problems (16 of 17)

Error Code/String	Response
712 BadOrMissingSTPZoneField	1. In the parameter file (.prm) that is located in the working directory (/datapool/MODE/user/FS#/HEGWorking) ensure that there is an STP_ZONE parameter. 2. If there is an STP_ZONE parameter and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
713 BadOrMissingSTPZoneValue	1. In the parameter file (.prm) that is located in the working directory (/datapool/MODE/user/FS#/HEGWorking) ensure that the value assigned to the STP_ZONE parameter is valid. 2. If the value assigned to the STP_ZONE parameter is valid and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
714 UnableToOpenSTPZoneFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
715 GranuleOutsideUSCantFindDefault StatePlaneZone	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
716 ErrorGettingAlaskanSTPZone	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
720 ErrorOpenInputHDFFile	1. Verify that the input hdf (granule) file exists in the datapool. 2. Ensure that cmshared has read permission on the input hdf file. 3. In the HEG Server debug log file (/usr/ecs/*MODE*/CUSTOM/logs/ HegServer.debug.log) verify that the hegtool is called correctly. [The hegtool call should look like this: /usr/ecs/*MODE*/CUSTOM/utilities/EcHgHEGStart *MODE* hegtool -h <*location of the hdf file in the datapool*>.] [For detailed instructions refer to the procedure for **Checking HEG Server Log Files** (subsequent section of this lesson).] 4. If the input hdf file is in the datapool, cmshared has read permission on the input hdf file, the hegtool was called correctly, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
721 ErrorReadingInputHDFFile	1. Verify that the input hdf (granule) file is in hdfeos format. 2. Ensure that cmshared has read permission on the input hdf file. 3. In the HEG Server debug log file (/usr/ecs/*MODE*/CUSTOM/logs/ HegServer.debug.log) verify that the hegtool is called correctly. [The hegtool call should look like this: /usr/ecs/*MODE*/CUSTOM/utilities/EcHgHEGStart *MODE* hegtool -h <*location of the hdf file in the datapool*>.] [For detailed instructions refer to the procedure for **Checking HEG Server Log Files** (subsequent section of this lesson).] 4. If the input hdf file is in hdfeos format, cmshared has read permission on the input hdf file, the hegtool was called correctly, and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

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Error Code/String	Response
722 UnableToOpenHeaderFile	1. Verify that there is a HegHdr.hdr file in the working directory (/datapool/*MODE*/user/*FS#*/HEGWorking). 2. If there is a HegHdr.hdr file in the working directory and the error still occurs, call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
723 UnableToFindShortName	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.
724 UnableToOpenGEOFile	Call the help desk and submit a trouble ticket in accordance with site Problem Management policy.

15.16.6 Checking HEG Server Log Files

HEG server log files show the activities involved in processing each HEG request. The following types of HEG server log files can be generated:

- HEG Server operations log (HegServer.ops.log).
- HEG Server debug log (HegServer.debug.log).
- HEG Server performance log (HegServer.perf.log), if available (typically turned off in normal operations).

The amount of information provided in logs varies with the type of log being viewed and the level of logging configured for the type of log. In general most of the entries in the operations log are duplicated in the debug log. The HEG Server logs can be set to record data at any of the following levels of detail (listed from most-detailed to no logging):

- XVERBOSE.
- VERBOSE.
- INFORMATION.
- NONE.

In normal operation the HEG Server logs are typically set (in the EcHgServerConfig.properties file in the /usr/ecs/*MODE*/CUSTOM/cfg directory) to record data at the following levels of detail:

- HEG Server operations log (HegServer.ops.log) - INFORMATION.
- HEG Server debug log (HegServer.debug.log) – INFORMATION.
- HEG Server performance log (HegServer.perf.log) – NONE.

The HEG Server can manage several concurrent activities. This is accomplished through the use of threads. Information concerning HEG Server processing of requests (identified by thread) is recorded in the HEG Server logs (assuming some level of log recording is specified in the corresponding configuration file).

The procedure for checking HEG server log files starts with the assumption that the operator has logged in to the system and the appropriate host.

15.16.6.1 Checking HEG Server Log Files

1 If the level of logging should be adjusted to assist in troubleshooting, notify the Operations Controller/System Administrator to have the adjustment made.

- Detailed levels of logging may have negative effects on system performance.

2 Access a terminal window logged in to the appropriate host.

- HEG Server (e.g., x4hel01) host has the following HEG server log files:
  - HegServer.ops.log.
  - HegServer.debug.log.
- For detailed instructions refer to the procedure for **Logging in to System Hosts** (preceding section of this lesson).

3 Type **cd /usr/ecs/*MODE*/CUSTOM/logs** then press **Return/Enter**.

- Change directory to the directory containing the HEG server log files (e.g., HegServer.ops.log, HegServer.debug.log).

4 Type **more *filename*** then press **Return/Enter**.

- ***filename*** refers to the HEG log file to be reviewed (e.g., HegServer.ops.log, HegServer.debug.log).
- The first page of the log file is displayed.
- Although this procedure has been written for the **more** command, other UNIX visualizing commands (e.g., **view**) can be used to review the log file.
- The following **more** commands (at the **--More--** prompt) are useful:
  - **Return/Enter** (go down one line).
  - ***n*Return/Enter** (go down ***n*** number of lines).
  - ***n***Space bar (go down ***n*** number of lines).
  - Space bar (go down one screen).
  - **z** (go down one screen).
  - ***n*z** (go down ***n*** number of screens; ***n*** becomes the default for subsequent **z** commands).
  - ***n*b** (go back ***n*** number of screens).
  - ***n*CTRL-B** (go back ***n*** number of screens).
  - ***n*d** (go down ***n*** number of lines; ***n*** becomes the default for subsequent **d** commands).
  - ***n*CTRL-D** (go down ***n*** number of lines; ***n*** becomes the default for subsequent **d** commands).
  - ***n*f** (skip ***n*** screens full and then display a screen).
  - ***n*s** (skip ***n*** lines and then display a screen).
  - **h** (help - display a description of all the **more** commands).

- **CTRL-L** (refresh the screen).
- ***n*/*pattern*** (search forward for the ***n***th occurrence of the ***pattern*** and display a screen starting two lines before the line that contains the specified pattern match.
- ***n*n** (search for the ***n***th occurrence of the last pattern entered.
- **v** (drop into the **vi** editor at the current line of the current file).
- **=** (display the current line number).
- **:f** (display the name of the current file and the current line number).
- **q** (exit from **more**).
- **Q** (exit from **more**).
- **!*command*** (invoke a shell to execute ***command***).

5 At the **--More--** prompt type **/*requestID*** then press **Return/Enter**:

- ***requestID*** is the HEG Request ID from the **OM GUI** [refer to the procedure for **Viewing Pending HEG Granules** or the procedure for **Viewing Open HEG Intervention Information on the OM GUI** (previous sections of this lesson)].
  - The XML processing instructions for each HEG request are included in the HEG Server debug log if the log.debug.level is set to XVERBOSE.
- For example, type:

  /0403300996
  - The file is searched for the specified text.
- If the specified text is in the log file, the following type of response is displayed.

  ...skipping
  12.14.2005 14:22:19.667 : Thread ID [21161] : XVERBOSE : Monitor thread created.
  12.14.2005 14:22:19.680 : Thread ID [21161] : VERBOSE : input xml validation succeeded for Request 10576
  12.14.2005 14:22:19.680 : Thread ID [21161] : INFORMATION : Incoming request from client: OMS with uid: 0403300996.85000004172274.3312040939 is assigned serverRequestId: 10576
  […]
  --More--(16%)
- If the specified text is not in the log file, the following type of response is displayed.

  Pattern not found
- The **Thread ID** (21161 in the preceding example) and **Server Request ID** (10576 in the preceding example) can be used to track entries concerning the specific request in the log file.

NOTE: Thread IDs are reused frequently. There may be multiple processes with the same thread ID in any particular log file. It is important to follow the correct instance of the thread (i.e., the one with the desired Server Request ID).

NOTE: It is likely that HEG would try again to process a failed request. Subsequent request processing may use the same thread ID or a different thread ID. However, it could be found through the Order Manager (OM GUI) Request ID.

6 If checking the operations log file, at the **--More--** prompt type **/: 0 for Request: *ServerRequestID*** then press **Return/Enter**:

- ***ServerRequestID*** is the Server Request ID discovered in Step 5.
- For example, type:

  /: 0 for Request: 10576

  - The file is searched for the specified text.
- The following type of response is displayed.

  ...skipping
  12.14.2005 14:22:34.138 : Thread ID [21178] : XVERBOSE : poller thread terminated for request: 10582
  12.14.2005 14:22:34.139 : Thread ID [21161] : VERBOSE : Move output successfully for Request 10576
  12.14.2005 14:22:34.139 : Thread ID [21161] : java.lang.String : INFORMATION : HEGConvProcessor.convert() returned status code: 0 for Request: 10576
  12.14.2005 14:22:34.139 : Thread ID [21179] : XVERBOSE : poller thread terminated for request: 10576
  […]
  --More--(18%)
- If the specified text is not in the log file, the following type of response is displayed.

  Pattern not found
- If a status code of 0 (zero) or 600 for a particular Server Request ID is found in the log, HEG processing was successful. This statement should be in the both the operations log and debug log regardless of the level of detail specified in the configuration file (unless logging is turned off; i.e., log level is NONE for a particular type of log).
  - Of course, there could still be problems with the request; e.g., failure to move the output files to the output directory.
- If a status code of 0 (zero) or 600 for a particular Server Request ID is **not** found in the log, HEG processing was either unsuccessful or is incomplete.

7 If checking the debug log file, at the **--More--** prompt type **/: 0 for Request *ServerRequestID*** then press **Return/Enter**:

- ***ServerRequestID*** is the Server Request ID discovered in Step 5.
- For example, type:

  /: 0 for Request 10576

  - The file is searched for the specified text.

- The following type of response is displayed.

  ...skipping
  12.14.2005 14:22:33.771 : Thread ID [21161] : XVERBOSE : Request 10576 converter execution time: 10 seconds.
  12.14.2005 14:22:33.771 : Thread ID [21167] : XVERBOSE : Request 10582 converter execution time: 10 seconds.
  12.14.2005 14:22:33.772 : Thread ID [21161] : INFORMATION : Conversion process returned status: 0 for Request 10576
  12.14.2005 14:22:33.772 : Thread ID [21167] : INFORMATION : Conversion process returned status: 0 for Request 10582
  […]
  --More--(32%)

- If the specified text is not in the log file, the following type of response is displayed.

  Pattern not found

- If a status code of 0 (zero) or 600 for a particular Server Request ID is found in the log, HEG processing was successful. This statement should be in the both the operations log and debug log regardless of the level of detail specified in the configuration file (unless logging is turned off; i.e., log level is NONE for a particular type of log).
  - Of course, there could still be problems with the request; e.g., failure to move the output files to the output directory.
- If a status code of 0 (zero) or 600 for a particular Server Request ID is **not** found in the log, HEG processing was either unsuccessful or is incomplete.

8 Examine the contents of the log file(s) to determine whether there were errors in processing the HEG request.

- If a status code other than 0 (zero) or 600 for the particular Server Request ID is found in the log(s), go to Step 9.
- A successful HEG request should result in the following types of entries being made in the operations log:

  12.14.2005 14:22:19.667 : Thread ID [21161] : XVERBOSE : Monitor thread created.
  12.14.2005 14:22:19.680 : Thread ID [21161] : VERBOSE : input xml validation succeeded for Request 10576
  12.14.2005 14:22:19.680 : Thread ID [21161] : INFORMATION : Incoming request from client: OMS with uid: 0403300996.85000004172274.3312040939 is assigned serverRequestId: 10576
  12.14.2005 14:22:19.685 : Thread ID [21161] : VERBOSE : working directory: /datapool/OPS/user/FS1/HEGWorking/10576 created successfully for Request 10576
  12.14.2005 14:22:19.686 : Thread ID [21161] : VERBOSE : ConversionItem created successfully for Request 10576
  12.14.2005 14:22:23.654 : Thread ID [21161] : XVERBOSE : Getting properties

12.14.2005 14:22:23.673 : Thread ID [21161] : VERBOSE : parameter file created successfully for Request 10576
12.14.2005 14:22:23.884 : Thread ID [21161] : INFORMATION : Sent pid: 5542 back to client for Request 10576
12.14.2005 14:22:23.884 : Thread ID [21161] : INFORMATION : Heg converter is running with pid: 5542 for Request 10576
12.14.2005 14:22:33.772 : Thread ID [21161] : INFORMATION : Conversion process returned status: 0 for Request 10576
12.14.2005 14:22:33.772 : Thread ID [21161] : INFORMATION : Run heg converter executable successfully for Request 10576
12.14.2005 14:22:33.824 : Thread ID [21161] : VERBOSE : summary file created successfully for Request 10576
12.14.2005 14:22:33.931 : Thread ID [21161] : XVERBOSE : Create temp directory:
/datapool/OPS/user/FS1/HEGTemp//datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI//HEG/0403300996.85000004172274//tempfiles successfully for Request 10576
12.14.2005 14:22:34.139 : Thread ID [21161] : VERBOSE : Move output successfully for Request 10576
12.14.2005 14:22:34.139 : Thread ID [21161] : java.lang.String : INFORMATION : HEGConvProcessor.convert() returned status code: 0 for Request: 10576

- A successful HEG request should result in the following types of entries being made in the debug log:

12.14.2005 14:22:19.666 : Thread ID [21161] : XVERBOSE : Connection from /198.115.220.179
12.14.2005 14:22:19.666 : Thread ID [21161] : XVERBOSE : client processing mode is: 1
12.14.2005 14:22:19.666 : Thread ID [21161] : XVERBOSE : Start processing request: 10576
12.14.2005 14:22:19.667 : Thread ID [21161] : XVERBOSE : client input xml:
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<request xmlns="http://newsroom.gsfc.nasa.gov/sdptoolkit/toolkit.html">
<requestInfo>
<clientName>OMS</clientName>
<uId>0403300996.85000004172274.3312040939</uId>
<metaFlag>false</metaFlag>
<summaryFlag>true</summaryFlag>
</requestInfo>
<inputFiles>
<file>

<fileName>/datapool/OPS/user//FS1/MOGT/MOD02HKM.004/2002.01.01//labtest_2017250970</fileName>

```
      </file>
   </inputFiles>
   <outputData>

<outputPath>/datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HE
GOUT.001hMEzIIJI//HEG/0403300996.85000004172274/</outputPath>
      <format>GEO</format>
      <projection>
         <projectionType>GEOGRAPHIC</projectionType>
      </projection>
      <spatialSubsetBoundingBox>
         <upperLeftCornerPoint>
            <latitude>10</latitude>
            <longitude>-50</longitude>
         </upperLeftCornerPoint>
         <lowerRightCornerPoint>
            <latitude>-10</latitude>
            <longitude>50</longitude>
         </lowerRightCornerPoint>
      </spatialSubsetBoundingBox>
      <bandContainer>
         <object>
            <objectName>MODIS_SWATH_Type_L1B</objectName>
            <field>
               <fieldName>EV_500_RefSB</fieldName>
               <dim3>
                  <dim3Name>Band_500M</dim3Name>
                  <dim3Number>1</dim3Number>
               </dim3>
            </field>
         </object>
      </bandContainer>
   </outputData>
</request>


12.14.2005 14:22:19.667 : Thread ID [21161] : XVERBOSE : Monitor thread
created.
12.14.2005 14:22:19.680 : Thread ID [21161] : VERBOSE : input xml validation
succeeded for Request 10576
12.14.2005 14:22:19.680 : Thread ID [21161] : INFORMATION : Incoming
request from client: OMS with uid: 0403300996.85000004172274.3312040939 is
assigned serverRequestId: 10576
12.14.2005 14:22:19.680 : Thread ID [21161] : XVERBOSE : InputXml content:
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
```

```
<request xmlns="http://newsroom.gsfc.nasa.gov/sdptoolkit/toolkit.html">
   <requestInfo>
      <clientName>OMS</clientName>
    <uId>0403300996.85000004172274.3312040939</uId>
  <metaFlag>false</metaFlag>
      <summaryFlag>true</summaryFlag>
   </requestInfo>
   <inputFiles>
      <file>

<fileName>/datapool/OPS/user//FS1/MOGT/MOD02HKM.004/2002.01.01//labte
st_2017250970</fileName>
      </file>
   </inputFiles>
   <outputData>

<outputPath>/datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HE
GOUT.001hMEzIIJI//HEG/0403300996.85000004172274/</outputPath>
      <format>GEO</format>
      <projection>
         <projectionType>GEOGRAPHIC</projectionType>
      </projection>
      <spatialSubsetBoundingBox>
         <upperLeftCornerPoint>
            <latitude>10</latitude>
            <longitude>-50</longitude>
         </upperLeftCornerPoint>
         <lowerRightCornerPoint>
            <latitude>-10</latitude>
            <longitude>50</longitude>
         </lowerRightCornerPoint>
      </spatialSubsetBoundingBox>
      <bandContainer>
         <object>
            <objectName>MODIS_SWATH_Type_L1B</objectName>
            <field>
               <fieldName>EV_500_RefSB</fieldName>
               <dim3>
                  <dim3Name>Band_500M</dim3Name>
                  <dim3Number>1</dim3Number>
               </dim3>
            </field>
         </object>
      </bandContainer>
```

</outputData>
</request>

12.14.2005 14:22:19.680 : Thread ID [21161] : XVERBOSE : currentClientRequestCount = 0, MaxClientRequestCount = 20
12.14.2005 14:22:19.680 : Thread ID [21161] : XVERBOSE : continue processing the request.
12.14.2005 14:22:19.685 : Thread ID [21161] : VERBOSE : working directory: /datapool/OPS/user/FS1/HEGWorking/10576 created successfully for Request 10576
12.14.2005 14:22:19.685 : Thread ID [21161] : XVERBOSE : metaFlag = false, summaryFlag = true for Request 10576
12.14.2005 14:22:19.685 : Thread ID [21161] : XVERBOSE : Request 10576 decompression command is: null
12.14.2005 14:22:19.686 : Thread ID [21161] : VERBOSE : ConversionItem created successfully for Request 10576
12.14.2005 14:22:19.686 : Thread ID [21161] : XVERBOSE : Startup hegtool: /usr/ecs/OPS/CUSTOM/utilities/EcHgHEGStart OPS hegtool -h /datapool/OPS/user//FS1/MOGT/MOD02HKM.004/2002.01.01//labtest_2017250970
12.14.2005 14:22:19.686 : Thread ID [21161] : XVERBOSE : cwd is: /datapool/OPS/user/FS1/HEGWorking/10576
12.14.2005 14:22:23.654 : Thread ID [21161] : VERBOSE : hegtool ran OK
12.14.2005 14:22:23.657 : Thread ID [21161] : XVERBOSE : We have 1 swaths
12.14.2005 14:22:23.657 : Thread ID [21161] : XVERBOSE : Loading swath MODIS_SWATH_Type_L1B into output info list
12.14.2005 14:22:23.663 : Thread ID [21161] : XVERBOSE : ParameterFileMaker: createAnOutFileName(): usefulInFileName = labtest_2017250970
12.14.2005 14:22:23.663 : Thread ID [21161] : XVERBOSE : ParameterFileMaker: createAnOutFileName(): usefulInFileName = labtest_2017250970
12.14.2005 14:22:23.664 : Thread ID [21161] : XVERBOSE : ParameterFileMaker: createAnOutFileName(): usefulInFileName = labtest_2017250970
12.14.2005 14:22:23.669 : Thread ID [21161] : XVERBOSE : Preparing to write parameters to /datapool/OPS/user/FS1/HEGWorking/10576/labtest_2017250970_37282773432866145_swath.prm
12.14.2005 14:22:23.670 : Thread ID [21161] : XVERBOSE : Band #1: objectName = MODIS_SWATH_Type_L1B, fieldName = EV_500_RefSB, dim3Name = Band_500M, dim3Num = 1, dim4Name = null, dim4Num = -9, bandOutputFileName = null
12.14.2005 14:22:23.670 : Thread ID [21161] : XVERBOSE : within method

loadARangeOfConversions().
12.14.2005 14:22:23.673 : Thread ID [21161] : VERBOSE : parameter file created successfully for Request 10576
12.14.2005 14:22:23.673 : Thread ID [21161] : VERBOSE : Request 10576 constructed conversion command:
/usr/ecs/OPS/CUSTOM/utilities/EcHgHEGStart OPS swtif -p /datapool/OPS/user/FS1/HEGWorking/10576/labtest_2017250970_37282773432866145_swath.prm -d -noMetadata
12.14.2005 14:22:23.684 : Thread ID [21161] : XVERBOSE : About to start heg converter execution for Request 10576
12.14.2005 14:22:23.884 : Thread ID [21161] : INFORMATION : Sent pid: 5542 back to client for Request 10576
12.14.2005 14:22:23.884 : Thread ID [21161] : INFORMATION : Heg converter is running with pid: 5542 for Request 10576
12.14.2005 14:22:33.771 : Thread ID [21161] : XVERBOSE : heg converter execution finished for Request 10576
12.14.2005 14:22:33.771 : Thread ID [21161] : XVERBOSE : Request 10576 converter execution time: 10 seconds.
12.14.2005 14:22:33.772 : Thread ID [21161] : INFORMATION : Conversion process returned status: 0 for Request 10576
12.14.2005 14:22:33.772 : Thread ID [21161] : INFORMATION : Run heg converter executable successfully for Request 10576
12.14.2005 14:22:33.825 : Thread ID [21161] : VERBOSE : summary file created successfully for Request 10576
12.14.2005 14:22:33.931 : Thread ID [21161] : XVERBOSE : Create temp directory:
/datapool/OPS/user/FS1/HEGTemp//datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI//HEG/0403300996.85000004172274//tempfiles successfully for Request 10576
12.14.2005 14:22:34.139 : Thread ID [21161] : VERBOSE : Move output successfully for Request 10576
12.14.2005 14:22:34.139 : Thread ID [21161] : java.lang.String : INFORMATION : HEGConvProcessor.convert() returned /datapool/OPS/user//FS1/MOGT/MOD02HKM.004/2002.01.01//labtest_2017250970|0|HegConversionSuccessful|/datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI//HEG/0403300996.85000004172274//labtest_2017250970_0403300996_ConverterSynopsis.txt /datapool/OPS/user/FS1//.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI//HEG/0403300996.85000004172274//labtest_2017250970_EV_500_RefSB__1_0403300996.tif for Request: 10576
12.14.2005 14:22:34.139 : Thread ID [21161] : XVERBOSE : About to send conversion result back to client.
12.14.2005 14:22:34.139 : Thread ID [21161] : INFORMATION : Finished sending conversion result back to client.

12.14.2005 14:22:34.139 : Thread ID [21161] : INFORMATION : Finish processing request: 10576

9 If a status code other than 0 (zero) or 600 for a particular Server Request ID is found in the log(s), take the appropriate action as indicated in Table 12, Troubleshooting HEG Problems.

10 If HEG request processing of a particular request is suspected of being incomplete (rather than failed), at the shell prompt type **xterm -n 'HEG Server Log' -sl 5000 -sb &** then press **Return/Enter**.

- A new xterm window is opened.

11 If HEG request processing of a particular request is suspected of being incomplete (rather than failed), at the shell prompt in the new xterm window type **tail -f *filename* | grep '*ServerRequestID*'** then press **Return/Enter**.

- ***filename*** refers to the HEG log file to be reviewed (e.g., HegServer.ops.log, HegServer.debug.log).
- ***ServerRequestID*** is the Server Request ID discovered in Step 5.
- For example:

  tail -f HegServer.ops.log | grep '10576'

- If new entries with the particular Server Request ID are being posted to the log, the operation has not finished yet.
  - If the same entries continue to be repeated over and over, there could be a problem with the server/converter.
  - Notify the Operations Controller/System Administrator of suspected server problems.
- If it is necessary to exit from a tailed log, type **^c** [Ctrl c] then press **Return/Enter**.

12 If the operation has not finished yet, monitor the tailed log for a while.

- If a status code other than 0 (zero) or 600 for the particular Server Request ID is found in the log(s), go to Step 9.
- If the operation does not seem to finish (i.e., if entries continue to be made to the tailed log) after a reasonable period of time (e.g., 30 minutes), notify the Operations Controller/System Administrator of the problem.
- If it is necessary to exit from a tailed log, type **^c** [Ctrl c] then press **Return/Enter**.

13 If errors/problems with HEG request processing of a particular request were detected in the HEG Server log(s), check for a corresponding open HEG intervention (by HEG Request ID) on the **OM GUI**.

- Go to the procedure for **Viewing Open HEG Intervention Information on the OM GUI**. (previous section of this lesson).

15.16.7 Checking Files in the HEG Tempfiles Directory

The HEG Server and the HEG converters create temporary files in the HEG Server working directory while processing each HEG request. If the HEG Server debug flag is on (HegServer.application.debugFlag = true in the HEG Server cfg file), the temporary files are saved in a temporary file directory when the request completes.

The tempfiles directory contains the following types of files:

- Converter logs.
  - resample.log.
  - swtif.log.
  - gdtif.log
- Parameter file (.prm).
- EcHgHEGConversion.log.

The procedure for checking files in the HEG tempfiles directory starts with the assumption that the operator has logged in to the appropriate host.

15.16.7.1 Checking Files in the HEG Tempfiles Directory

1 Access a terminal window logged in to the appropriate host (e.g., x4hel01).

- For detailed instructions refer to the procedure for **Logging in to System Hosts** (preceding section of this lesson).

2 Type **cd /usr/ecs/*MODE*/CUSTOM/cfg** then press **Return/Enter**.

- Change directory to the directory containing the HEG configuration files (e.g., EcHgServerConfig.properties).

3 Type **more *filename*** then press **Return/Enter**.

- ***filename*** refers to the HEG configuration file to be reviewed (e.g., EcHgServerConfig.properties).
- The first page of the configuration file is displayed.
- Although this procedure has been written for the **more** command, other UNIX visualizing commands (e.g., **view**) can be used to review the log file.
- The following **more** commands (at the **--More--** prompt) are useful:
  - **Return/Enter** (go down one line).
  - ***n*Return/Enter** (go down ***n*** number of lines).
  - ***n***Space bar (go down ***n*** number of lines).
  - Space bar (go down one screen).
  - **z** (go down one screen).
  - ***n*z** (go down ***n*** number of screens; ***n*** becomes the default for subsequent **z** commands).
  - ***n*b** (go back ***n*** number of screens).

- ***n*CTRL-B** (go back ***n*** number of screens).
- ***n*d** (go down ***n*** number of lines; ***n*** becomes the default for subsequent **d** commands).
- ***n*CTRL-D** (go down ***n*** number of lines; ***n*** becomes the default for subsequent **d** commands).
- ***n*f** (skip ***n*** screens full and then display a screen).
- ***n*s** (skip ***n*** lines and then display a screen).
- **h** (help - display a description of all the **more** commands).
- **CTRL-L** (refresh the screen).
- ***n*/*pattern*** (search forward for the ***n***th occurrence of the ***pattern*** and display a screen starting two lines before the line that contains the specified pattern match.
- ***n*n** (search for the ***n***th occurrence of the last pattern entered.
- **v** (drop into the **vi** editor at the current line of the current file).
- **=** (display the current line number).
- **:f** (display the name of the current file and the current line number).
- **q** (exit from **more**).
- **Q** (exit from **more**).
- **!*command*** (invoke a shell to execute ***command***).

4 Record (e.g., write down) the values corresponding to the following parameters in the configuration file:

HegServer.application.workDirRoot

HegServer.application.workDirTop

HegServer.application.tempDirRoot

HegServer.application.tempDirTop

- For example:

HegServer.application.workDirRoot = /datapool

HegServer.application.workDirTop = user/FS1/HEGWorking

HegServer.application.tempDirRoot = /datapool

HegServer.application.tempDirTop = user/FS1/HEGTemp

5 Type **cd /*path*** then press **Return/Enter**.

- Change directory to the HEG tempfiles directory for the HEG request.

- ***path*** refers to the path to the HEG tempfiles directory for the HEG request. The tempfiles directory is created at the following configurable location:

  ***tempDirRoot*/*MODE*/*tempDirTop*/*outputdirectory*/tempfiles**.

  - ***tempDirRoot*** and ***tempDirTop*** are specified in the EcHgServerConfig.properties file in the /usr/ecs/*MODE*/CUSTOM/cfg directory.
  - ***outputdirectory*** is specified in the HEG request XML file.
- The HEG request XML file (processing instructions) can be viewed using the **OM GUI** [e.g., refer to the procedure for **Viewing Pending HEG Granules** or the procedure for **Viewing Open HEG Intervention Information on the OM GUI** (previous sections of this lesson)].
- If the HEG Server debug log level is set at XVERBOSE, the HEG request information (processing instructions) can be viewed in the log file.
  - In the following example:

    /datapool/OPS/user/FS1/HEGTemp/datapool/OPS/user/FS1/.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI/HEG/0403300996.85000004172274/tempfiles
- **/datapool** is the ***tempDirRoot***.
- **OPS/user/FS1/HEGTemp** is the ***tempDirTop***.
- **datapool/OPS/user/FS1/.orderdata/OUTPUTSDDWmmfGD/HEGOUT.001hMEzIIJI/HEG/0403300996.85000004172274** is the ***outputdirectory***.

6 In the terminal window type **ls** then press **Return/Enter**.

- A listing of the directory is displayed, for example:

  EcHgHEGConversion.log
  HegHdr.hdr
  labtest_2017250970_37282773432866145_swath.prm
  FileNameLog_0403300996.log
  hegtool.log

  - OR -

  EcHgHEGConversion.log
  HegHdr.hdr
  resample.log
  FileNameLog_0403398929.log
  hegtool.log
  filetable.temp_3698
  labtest_2017201550_2167927653420515_grid.prm

7 Review the contents of the HEG request's tempfile directory to determine whether the expected types of files are listed.

- The examples in the preceding step have the expected types of files.

8 Type **more** ***filename*** then press **Return/Enter**.

- ***filename*** refers to a file (in the HEG tempfile directory) to be reviewed (e.g., FileNameLog_0403300996.log).
- The first page of the specified file is displayed.
- Although this procedure has been written for the **more** command, other UNIX visualizing commands (e.g., **view**) can be used to review the log file.
- The FileNameLog… contains the names of the output file and the input file; for example:

  OUTPUT FILE: labtest_2017250970_EV_500_RefSB__1_0403300996.tif
  INPUT FILE: labtest_2017250970

- The parameter file (e.g., labtest_2017250970_37282773432866145_swath.prm) contains the names of the output file and the input file (including the directory paths); for example:

  INPUT_FILENAME =
  /datapool/OPS/user//FS1/MOGT/MOD02HKM.004/2002.01.01//labtest_2017250970
  […]
  OUTPUT_FILENAME =
  /datapool/OPS/user/FS1/HEGWorking/10576/labtest_2017250970_EV_500_RefSB__1_0403300996.tif

9 Examine the contents of the file to determine whether there were errors in processing the HEG request.

10 Repeat Steps 9 and 10 as necessary.
